

## **New England's Fishing Communities**

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## 1. Introduction

The research upon which this report is based had two objectives, to identify fishing communities in the New England region and more specifically, to assess the fishing-dependency of these communities. The communities of interest are those whose fishing fleets work in the exclusive economic zone (EEZ) under the jurisdiction of New England Fisheries Management Council.<sup>1</sup> Despite almost 25 years of regional fisheries management, New England's fishing communities are facing economic and social uncertainty due to declines in a number of fish species and the resulting management efforts to rebuild those stocks.

Information about the impact of regulatory change on communities has been constrained by a dearth of long-term, systematic studies of fisheries dependent communities in New England. Shortly after the New England Fisheries Management Council was established in 1976 by the Magnuson Fishery Conservation and Management Act (the Magnuson Act), a flurry of useful studies were published. Some attempted to characterize New England's fishing industry<sup>2</sup> or a limited number of ports<sup>3</sup>. Later reports focused on the economy<sup>4</sup> or attempted to measure the social impacts of specific management regulations.<sup>5</sup> Nowhere, however, was there a database of consistently gathered information about fishing dependent communities (FDCs) in the region.

While some of the recent studies have given managers and social scientists an improved understanding of the impact of regulatory changes on individual communities, neither their cumulative impacts nor the reverberation of impacts across communities and regions coincident with regulatory change have been assessed. In order to begin to monitor these dynamic and complex consequences of change, consistent data-collection over time is needed.

This MARFIN-funded study is an attempt to lay the groundwork for regional and community data sharing among fishery managers, policy makers, and fishing industry participants and communities. This study of the social and cultural parameters of the fisheries is complemented by an economic model (based on IMPLAN) being developed at Woods Hole Oceanographic Institution. Future in-depth or more specific analyses of the human aspects of fisheries issues in New England will benefit from the baseline drawn by these two studies.

The Magnuson-Stevens Fishery Conservation and Management Act (SEC. 303 (a) (2))<sup>6</sup> requires fishery management plans to: "contain a description of the fishery, including, but not limited to, the number of vessels involved, the type and quantity of fishing gear used, the species of fish involved and their location, the cost likely to be incurred in management, actual and potential revenues from the fishery, any recreational interest in the fishery, and the nature and extent of foreign fishing and Indian treaty fishing rights, if any. . . "

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<sup>1</sup> The portion of the EEZ controlled by the New England Fishery Management Council lies off of the states of Connecticut, Rhode Island, Massachusetts, New Hampshire and Maine.

<sup>2</sup> Smith and Peterson 1977, 1979; Peterson and Smith 1981; Acheson et al 1980; Danowski 1980; Dewar 1983; Gatewood & McCay 1988; Gersuny, Poggie & Marshall 1976; Ladner et al 1981; Penrose 1981

<sup>3</sup> Acheson ed. 1980; McConnell and Smith 1979; Poggie and Pollnac 1980; Dewar et al 1978; Husing 1980; McCay 1980; 1989; Miller and Van Maanen 1979

<sup>4</sup> Doeringer, Moss and Terkla 1986; Fox and Lesser 1981; Holmsen 1976

<sup>5</sup> Hall-Arber (1993); Griffith and Dyer (1996); Dyer, Poggie and Hall-Arber (1998)

<sup>6</sup> 16 U.S.C. 1853

In addition, plans must “(9) include a fishery impact statement for the plan or amendment (in the case of a plan or amendment thereto submitted to or prepared by the Secretary after October 1, 1990) which shall assess, specify, and describe the likely effects, if any, of the conservation and management measures on—(A) participants in the fisheries and fishing communities affected by the plan or amendment. . .”

Discretionary provisions of the management plans include permission to establish a “limited access system for the fishery in order to achieve optimum yield. . .” If this is done, however, “the Council and the Secretary take into account-- (A) present participation in the fishery, (B) historical fishing practices in, and dependence on, the fishery, (C) the economics of the fishery, (D) the capability of fishing vessels used in the fishery to engage in other fisheries, (E) the cultural and social framework relevant to the fishery and any affected fishing communities, and (F) any other relevant considerations”. . .

When the Magnuson-Stevens Fishery Conservation and Management Act was amended in 1996 by the Sustainable Fisheries Act, a number of standards were identified as requisite for fishery management plans. Among them, National Standard 8 dictates “Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.”<sup>7</sup>

In its section on definitions, the Act defines the term “fishing community” as “a community which is substantially dependent on or substantially engaged in the harvest or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew and United States fish processors that are based in such a community.”<sup>8</sup>

Thus, the fishing community is defined as a “place” and the legislation requires that the impact of regulations on fishing communities be analyzed. The question then arises, how should the boundaries of that “place” be drawn and its dependency measured? Does the whole setting have to be included in the measure or can a “fishing community” be abstracted from the whole and its dependency quantified? Furthermore, is the focus on dependency the only critical assessment to be made or is there another parameter of equal value? Those of us who are interested in fishing communities know that the answer is critical. The success or failure of fisheries management may be inextricably bound to notions of “community.” Co-management and community quota systems are two of the most promising steps towards making fisheries sustainable without eliminating a “fishing way of life.” Both require a defined community.

A general absence of social and cultural longitudinal data on fishing communities in the U.S. has led to an effort to fulfill the requisite of National Standard 8 through simple economic assessment. Unfortunately, such an approach is inadequate, and maybe even harmful, when applied to specific cases.<sup>9</sup> Measurement of fishing dependence must include a complex of features that takes into account fishing history, infrastructure, specialization, social institutions and gentrification trends, in addition to economic characteristics. Most importantly, fishing communities must not be viewed as economic isolates but as contributing partners in regional networks of total capital flows and transformations associated with Natural Resource Regions.<sup>10</sup>

While the three principal investigators collaborated on each portion of the project, each of us took the lead in a particular approach to identifying fishing communities and ranking their fishing dependency. Chris Dyer and John Poggie, in collaboration with Dr. James

<sup>7</sup> SEC. 301. NATIONAL STANDARDS FOR FISHERY 16 U.S.C. 1851 <http://www.nmfs.noaa.gov/sfa/>

<sup>8</sup> SEC. 3. DEFINITIONS 16 U.S.C. 1802  
<http://www.nmfs.noaa.gov/sfa/>

<sup>9</sup> E.g., the spiny dogfish fishery.

<sup>10</sup> Dyer and Poggie (2000)

McNally of the University of Michigan, were responsible for the theoretical context based on a regional consideration of fishing-related employment. John Poggie formulated the approaches that measure the complexity of the fishing infrastructure and the degree of gentrification of specific communities. Madeleine Hall-Arber was principally responsible for the port profile approach that provides a more detailed consideration of individual ports, revealing patterns of contacts, characteristics of the community's culture and institutions, and some perspective on local residents' views about their way of life and about fisheries management. All of the principal investigators interviewed key respondents and wrote portions of the profiles. In addition, Renee Gagne wrote the profile of Chatham, Massachusetts.

These three methods, along with economic analyses, offer a way to approach a comprehensive analysis of human ecosystem dynamics in coastal regions. Ultimately, our goal is to take fisheries management development one step closer to the incorporation of knowledge about the whole "resource system from the resource base to the fishermen,<sup>11</sup> their families and communities, and the broader networks of policy distribution, and consumption of which they are also a part."<sup>12</sup>

We propose that the regional theory and method outlined here reflect the reality of contemporary coastal communities having a fishing component in their economies. Furthermore, we suggest that this method be tested in other regions to determine if it should be accepted as the standard for the analysis of the fishing industry and fishing-dependent communities nationwide in fulfillment of the requisite associated with National Standard 8.

While we present this publication as an important step toward understanding fishing communities in New England, we do so with the caveat that we are aware of three major lacunae. The first is that our dependency measures do not incorporate comparative economic data. Since the dependency of a community on particular resources is necessarily affected by the value of those resources, the economic profiles are requisite for a more complete profile. Likewise, the second insufficiently covered pertinent aspect is history. While each community profile incorporates a small historical sketch, these sketches hardly do justice to the rich, complicated history of fishing in New England and so provide only the barest context for what exists today. Finally, because the Census numbers are based in part on samples, they seem to undercount the numbers of individuals involved in the fishing industry.<sup>13</sup> Nevertheless, when the regions are compared using the indices based on Census data, the relative dependency of communities on the fishing industry seems to be fairly accurately indicated. Even so, we caution that the indices should not be relied upon for absolute numbers. The ultimate dependency of the communities must also be weighed according to the infrastructure differentiation, gentrification scale, analysis of total capital flow and, importantly, according to the perspective of community stakeholders as described in the profiles.

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<sup>11</sup> Both men and women who fish in New England seem to prefer to be referred to as fishermen rather than the academically-popular term "fisher." The term fisherman is used in this study as though gender-neutral.

<sup>12</sup> Durrenberger and King (2000)

<sup>13</sup> Another difficulty in using Census data that is easily accessible (via the Internet, for example), is that the area being referred to is not always clear. Many of the fishing communities are "CPD" (Census Designated Place)— "a statistical area defined for a census as a densely settled concentration of population that is not incorporated but which resembles an incorporated place in that it can be identified with a name." Or they are a subdivision of a county. Other Census data is based on school districts.



## 2. Conceptual Framework

### 2.1. *A Regional Ecosystem Approach*

The conceptual framework for this report is based on a regional approach that has its foundation in ecosystem modeling. Internationally, the ecosystem paradigm is emerging as a dominant approach to large-scale management of natural resources. For example, resource managers and social scientists concerned with the degradation of the world's seas suggest focusing on large ecosystems as a way to recover ecosystem health and make the utilization of renewable resources sustainable. Emergence of this paradigm has also been spurred by the failure of single species approach to management. Yet, theoretical and applied paradigms linking human systems and large-scale ecosystems are undeveloped.

Some fundamental issues that *are* being addressed include the spatial and temporal scales of governance and policy-making arrangements that structure the institutional linkages between marine ecosystems and their governance. However, the dynamic between regional natural systems and human actions at the individual, household and community level is generally not included in ecosystem modeling and praxis. Given the worldwide state of decline in ecosystem health, there is an urgent need for marine policy bodies to develop and apply conceptual-theoretical models of human action that complement the large-scale ecosystem approach.

This report examines fishing-dependent communities in a regional context. We use a community and regional (large-scale) approach to the analysis of the New England fisheries in a way that complements Sherman et al.'s work on Large Marine Ecosystems (LMEs). LMEs are geographic areas of oceans that have distinct bathymetry, hydrography, productivity, and tropically dependent populations. The LME approach attempts to link the management of drainage basins and coastal areas with continental shelves and dominant coastal currents. Our report provides a framework for monitoring and assessing socio-economics and governance of the associated Natural Resource Regions (NRR) of the US Northeast Shelf LME. The Natural Resource Regions are defined through identification of networks of communities acting as nodes of regional total capital flow. Communities are not viewed in isolation, but are defined internally through social, ethnic, and historical ties and externally through networks of regional and extra- regional total capital flow.

### 2.2. *Space and Place in Human Ecosystems*

Although not conceptually linked to large-scale marine systems, the study of uses of space and place, including degradation by human action, is receiving some renewed attention from social scientists.<sup>14</sup> These studies contribute much to our understanding of how people perceive their connection to place. Yet most efforts to understand induced changes in environment suffer from a parochialism of scale. At the extreme are interpretations of human-environment interactions that take a person-centered (ego centered) approach to place as modified through human action.<sup>15</sup> By emphasizing localized, individual or community-level outcomes, yet ignoring potential impacts and connections to regional and extra-regional factors, researchers can miss much of what determines the ultimate direction and magnitude of human-induced environmental change. While providing valuable insights into the localized interpretation and use of space and place, such foci also miss the connection of humans, communities, and the places they occupy as well as change as a *regional process*, dominated by human behavioral and value systems interfaced with environment.

<sup>14</sup> Aihoshi and Rodman (1992); Auge (1995); Basso (1988); Hirsch and O'Hanlon (1991); Kahn (1990); Munn (1990); Myers (1991); Pandya (1990); Parmentier (1987); Stewart (1988); Wassman (1991); Weiner (1991); Feld and Basso (1996)

<sup>15</sup> Berdoulay (1989); Entrikin (1989); Nir (1991); Shields (1991); Tauan (1991); Yoon (1986)

The political ecology of change does provide us with some parallels to a regional human-environment approach. For example, Giblin describes how the 19<sup>th</sup> century politics of environmental control created famine for farmers in Northeast Tanzania.<sup>16</sup> In this case, the ability of farming communities to control disastrous cattle infections and subsequent starvation depended on how external forces affected patronage and redistributed wealth. The most important relations of production were between patron and client, so the policy of patronage determined whether pre-colonial farmers succeeded in controlling disease, accumulating livestock and food reserves, and preventing drought from causing famine.

Adaptation to disruptive events within social systems has also been explored. For events such as cyclic ecological problems of drought, earthquakes, or floods, many societies are noted to possess adaptive flexibility, also described as “equilibration.”<sup>17</sup> Equilibration is adjustment to changed environmental conditions in the face of new socio-technological exigencies, and is well documented in the ethnographic literature.<sup>18</sup> However, no parallel models of regional change exist to guide governance of marine natural resources. Modeling of natural resource management in fisheries has been dominated by biologists using, for example, such tools as the Schaefer-Gordon curve in fisheries management, with collaborating contributions from economists. A lack of a regional perspective that includes social and cultural aspects of human action makes such bio-economic models inadequate as vehicles for the thorough understanding of human transformations of natural resources.

Moreover, with the recent exception of economic modeling, input of social scientists to natural resource models has historically been trivialized by policy and management bodies. For example, the standard requirement for social science assessment of U. S. fisheries management stipulates use of the “best available information.” Unfortunately, due in part to the lack of longitudinal studies and/or consistent data collection and analysis, the “best available” often consists of collected anecdotal opinions from public hearings as well as out-of-context and dated information applied from one fishery to another. Furthermore, what information is available is often reviewed in a very hurried and reactive manner.

Social science data often fall into the category of add-ons to dominant biophysical or bio-economic models, which leave little room for human thought and action, and give even less consideration to the human consequences of resource management schemes.<sup>19</sup> Yet, the very nature of the critical resource transformations that are the target of management are founded in human perceptions and actions. It is not surprising that resource managers are not aware of the powerful influence of most non-bioeconomic factors in resource transformations, as their policy mandates are frequently swayed by participation in specialized intellectual environments that are inflexible in their consideration of new forms of interpretation.<sup>20</sup> Social scientists too are partly to blame, as resource managers have not been provided the necessary ‘human’ models to manage such human actions at the same regional scale in which they strive to deal with ecosystem transformations. The consequences of this shortcoming are potentially severe, and can include the collapse and degradation of the resource base despite the best intentions to manage it. One of the intents of this chapter is to help rectify this situation.

A remarkable pioneer formulation of a regional human resource model is Bennet’s study of adaptive strategies of social groups of the Canadian Great Plains.<sup>21</sup> Bennet describes how his regional approach differs from prior intellectual traditions: “In defining an approach for this study we had available the following academic research traditions: human or cultural geography, with its descriptive emphasis on cultural-environmental correlation; economic development, with its concern for the ways agrarian populations use resources to forge a

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<sup>16</sup> Giblin (1992)

<sup>17</sup> Torry (1978)

<sup>18</sup> Zaman (1991); Dirks (1980); Waddell (1976); Brookfield and Brown (1967); Spencer (1959)

<sup>19</sup> Poggie ( ); Dyer (1994)

<sup>20</sup> Ward and Weeks (1994)

<sup>21</sup> Bennet (1969)

viable economy; or cultural ecology, with its emphasis on the important role played by economic and technological adaptations in shaping institutions. None of these approaches by itself seemed to provide a suitable format for the synthesis of a large quantity of data from a particular geographical and human region.”<sup>22</sup>

Bennet chose a regional approach over a community-based one in part because the complexity of resource flows of the Great Plains setting demanded it: “We selected a regional instead of the usual nucleated community studied by anthropologists and sociologists because of the way human activities are distributed in the Great Plains. Since resources are unevenly distributed, people who depend entirely on livestock production will occupy different portions of the region than those who depend on grain crops. Indians are confined to marginal “bush” areas of the hills. Some towns will have many services, others are highly specialized.”<sup>23</sup>

Another early precursor to our model is the work of Pelto and Poggie in which they outline the utility of regional approaches to the understanding of processes of culture change. “The community approach used in anthropological studies produces rich and detailed descriptions of how rapid social and cultural changes have transformed the lives of individuals and local groups. On the other hand, such studies often depict local developments without sufficient attention to the ways in which the local community is articulated to the larger regional and national socioeconomic and political systems. Moreover, anthropologists frequently have placed heaviest emphasis on the unusual and different—the exceptional cases of modernization, good and bad. Thus it is not clear how these studies can be built into a more generalized theoretical framework.”<sup>24</sup>

### 2.3. *The Natural Resource Region*

We propose a regional model for New England to understand human-environmental interactions as shaped and transformed by various forms of capital in their interface with large-scale marine ecosystems. This approach builds on Bennet’s and Pelto and Poggie’s work, but differs in that it defines regions through a network of communities acting as nodes of regional total capital flow. Communities are not viewed in isolation, but are defined internally through social, ethnic, and historical ties and externally through networks of regional and extra- regional total capital flow.

Capital—tangible or intangible resources that contribute to the long-term adaptation of a person, group, or population—is used here in the broadest sense to include human, social, cultural, biophysical, and economic transformations and exchanges, which we refer to as ‘flows.’ An empirical question in regional studies is the extension of ‘capital’ beyond the economic. In some cases, economic capital may predominate as the most significant driver in a community and regional system. In most cases, we suspect other forms or combinations of capital forms (social, human, cultural, and economic) may predominate, with economic capital being one of a complex mix with others. The patterns and importance of various combinations of capital flow must be ascertained by empirical research and not assumed to be the same everywhere.

Economic capital is conceived to include more than monetary resources, but involves formal and informal exchanges of goods and services, with the primary source derived through production and transformation of biophysical capital (e.g. marine resources). For example, groundfishing in Downeast Maine traditionally includes exchange of labor (human capital—helping offload fish) and information (cultural capital—letting folks know where the fish are) among community residents without any formal monetary exchanges.<sup>25</sup> Such reciprocity results in the flow of long-term sustainable benefits that carry much more than narrowly conceived economic value.

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<sup>22</sup> Ibid, p. 26

<sup>23</sup> Ibid, p. 27

<sup>24</sup> Pelto and Poggie (1974), p. 114

<sup>25</sup> Griffith and Dyer (1996)

Elsewhere, in a community-based assessment of the Native response to the Alaska Native Claims Act (ANCSA), Berger found overwhelming rejection by Alaska Natives of proposed economic incorporation.<sup>26</sup> Incorporation meant dividing up the natural resources (land, minerals, trees) into corporate stock, from which the corporations were to benefit. Berger demonstrated that the social and cultural capital associated with the Native subsistence way of life and resources were considered to be of much greater importance (value) to Native communities than any economic capital to be accrued through incorporation of Native lands and communities.

Since Berger's work, virtually all the Native corporations under ANCSA are bankrupt. Outside investors with no stake in maintaining the social and cultural capital of native Alaskan communities have been purchasing land and associated resources since a 1992 ANCSA sunset clause on stockholder control. Subsequent social problems and community decline in these Native populations confirms Berger's assessment that the natural resources possessed greater long-term social and cultural value in sustaining Alaska Native communities and their nature-focused life-ways than what was derived as short-term economic gain for corporate (community) stockholders.

Besides recognizing the importance of capital in all its forms, we propose that marine resource policy and management can benefit from a regional approach. We argue that by taking an isolated community, overall statistical, or individual perspective on place-space transformations, social scientists have misinterpreted cause and effect, seeing only disconnected pieces of what are actually wider processes of a regional and extra-regional dynamic of human-environment interaction.

There may, in fact, be inter-cultural diversity, communities may vary and there may be differently linked networks in the same region, but these are empirical questions that must be addressed in each specific NRR studied. Our focus is on networks of communities linked to *marine resource utilization*. Other regional use networks focused on such enterprises as agriculture, the service industry, manufacturing, and tourism necessarily overlap and integrate with the marine resource networks.

Variation in levels of capital exchange in marine-resource dependent regions reflects a continuum of community isolation and integration of capital flows. More isolated maritime communities are often economically marginal, have limited control over regional natural resources, are frequently culturally or ethnically distinct and geographically distant from more structurally differentiated communities in a region.<sup>27</sup> More integrated maritime communities are economically tied to regional networks; can represent a complex mix of ethnicity and cultural practices; and are less distinctive from and geographically closer to other such communities.<sup>28</sup>

The regional model proposed here, the Natural Resource Region (NRR) unifies elements of human actions and values to allow for interpretation and application of human factors by natural resource managers working within the framework of Large Marine Ecosystems (LMEs).<sup>29</sup> The LME model outlines five linked modules to assess ecosystem sustainability: productivity of the ecosystem, fish and fisheries, pollution and ecosystem health, socioeconomic conditions, and governance.<sup>30</sup> Modules of governance and socio-economics are at present undeveloped for LMEs.

The NRR is focused on the 'socioeconomic' module, but takes a much broader perspective in that it expands 'socio-economics' to include social, cultural, human, economic and biophysical capital and their dynamic interactions. In the interface with LMEs, primary

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<sup>26</sup> Berger (1985)

<sup>27</sup> Dyer and Leard (1994)

<sup>28</sup> Griffith and Dyer (1996)

<sup>29</sup> Sherman et al (1998); Sherman et al (1993); Sherman et al (1992); Sherman et al (1990)

<sup>30</sup> Ibid

units of human-environment interaction—individuals, families, or communities—are to be viewed as interconnected within regional networks held together by forms of capital. The community as a nodal form of human organization helps structure regional interactions and capital flows. In aggregate, communities provide for points of spatial reference by which to study the LME/NRR dynamic. We begin detailed discussion of the model with the building blocks of NRRs—Natural Resource Communities (NRCs).<sup>31</sup>

#### 2.4. *The Natural Resource Community as a Regional Base Unit*

In a collection of case studies on folk management in fisheries around the world, Dyer and McGoodwin draw upon the concept of the Natural Resource Community (NRC) to characterize fishing communities worldwide.<sup>32</sup> The NRC is a social unit anchored in local history and local understandings of ecological relationships, consisting of "...a population of individuals living within a bounded area whose primary cultural existence is based on the utilization of renewable natural resources."<sup>33</sup> Residents of fishery-based Natural Resource Communities tend to hold in common a localized worldview, and locally developed assertions about how to best manage local natural resources. As such, NRCs can come in conflict with management regimes that impose external controls without acknowledging local interests, as often occurs in developed fisheries regimes.<sup>34</sup>

Although fishermen interact, often quite regularly, with individuals and institutions who have few or no ties to fishing, "where they [fishermen] live and work is still a localized, specific place, and quite often they perceive that they take their catches from a specific, bounded, marine ecosystem, which from their perspective has unique systemic attributes."<sup>35</sup> Thus, the NRC model provides a useful spatial context upon which to begin the study of regional and extra-regional ecosystem dynamics.

Nevertheless, unlike the original conceptualization of the NRC, which describes communities as spatially 'bounded,' most contemporary fishing NRCs are not isolated from national governance nor from the commercial and other institutions of the cities, towns and villages which share their region. Also, residents in marine-dependent communities do not perceive the ecosystems upon which they depend as closed systems. Moreover, extra-regional influences such as global market systems can dominate or even destroy regional networks and the communities they comprise. For example, in the late 19<sup>th</sup> century, the marine fisheries of Maine were tied into a three-way trade of sugar cane, dried fish, and salt with Europe and the Caribbean.<sup>36</sup> When the external demand for dried cod collapsed, the offshore marine fishery also collapsed, resulting in significant social, cultural and economic decline in the coastal Maine NRR.

Gallaher and Padfield, in their theory of the 'dying community', describe such declines as including (1) abandonment of a natural region, (2) decay of a sociocultural system or civilization and (3) extinction of a particular form of association.<sup>37</sup> Their 'form of association' is synonymous with the totality of interdependent relationships—or total capital—that define a community. Furthermore, the social and cultural fabric of *individual communities* is interwoven through a series of regional exchanges—economic, ritual, and otherwise. These exchanges define the degree of community dependence on the marine environment, and can be linked to varying regional and extra-regional influences of the marketplace, changing environments (e.g. sea level rise), governance, and extraction technologies and their associated innovations (e.g. nylon versus cotton nets).<sup>38</sup>

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<sup>31</sup> Dyer, Gill and Picou (1992)

<sup>32</sup> Dyer and McGoodwin (1994)

<sup>33</sup> Dyer, Picou and Gill (1992)

<sup>34</sup> McGoodwin (1990)

<sup>35</sup> Dyer and McGoodwin (1994)

<sup>36</sup> O'Leary (1966); Gallaher and Padfield (1980)

<sup>37</sup> Gallaher and Padfield (1980), p.20

<sup>38</sup> Firth (1946)

Dyer and Griffith isolated five variables that help identify community dependence on a fishery.<sup>39</sup> These are relative isolation or integration of fishery-dependent people into alternative economic sectors; vessel types/ gear strategies within the port's fishery; degree of regional specialization; percentage of population involved in fishery or fishery-related industries; and competition and conflict within the port among different components of the fishery.

While each of these components is considered in the profiles that follow, our analyses combine them in different ways. For example, the indices based on occupational categories combines the variable of relative isolation or integration into alternative economic sectors with the variable concerning the percentage of population involved in fishery-related industries. The profiles also describe vessel and gear types, specialization and to some extent, the competition within ports.

Clearly, the components of community dependence on fishing define the social, economic and cultural relationships between fishermen and their communities. Benefits that flow from these relationships are multiplied through a series of networked community exchanges and transformations based on different forms of capital. Understanding the various forms of capital and their relationships provides the basis for our regional model.

## 2.5. *Forms of Capital*

Complementary forms of capital and their interactions allow for the production and reproduction of systems of marine resource utilization such as fisheries. Social, cultural, human, biophysical and economic capital maintain production units such as households and fishing crews and over time allow for recruitment of new community members into the occupational hierarchies of the fishery.

### **Social capital**

The concept of *social capital*—the configuration and functions of people's personal ties—was explicitly articulated by the late James Coleman but earlier versions have appeared in sociological and anthropological theory.<sup>40</sup> Drawing on several works in sociology and anthropology that demonstrate ways in which social ties influence and organize economic behavior, Coleman arrives at a definition of social capital that returns to his central themes of behavior as the product of self-interest and control: "Social capital is defined by its function. It is not a single entity, but a variety of different entities having two characteristics in common: They consist of some aspect of a social structure, and they facilitate certain actions of individuals who are within the structure. Like other forms of capital, social capital is productive, making possible the achievement of certain ends that would not be attainable in its absence. Like physical capital and human capital, social capital is not completely fungible, but is fungible with respect to certain activities. A given form of social capital that is valuable in facilitating certain actions may be useless or even harmful for others. Unlike other forms of capital, social capital inherits the structure of relations between persons and among persons. It is lodged neither in individuals nor in physical implements of production."<sup>41</sup>

In Coleman's sense, social capital enables individuals with reduced or no access to investment capital to accumulate the symbolic and material means to participate successfully in an economic activity such as fishing. Social capital depends, however, on the social field in which people give and receive jobs, information, low-interest or no-interest loans, gifts, and so forth. It is that social field which gives social capital life, transcending the individual without leaving her or him out of the equation, "...both accounting for different outcomes at the level of individual actors and making the micro-to-

<sup>39</sup> Griffith and Dyer (1996)

<sup>40</sup> Colman (1990, 1988); Coase (1960)

<sup>41</sup> Colman (1990)

macro transition without elaborating the social structural details through which this occurs."<sup>42</sup>

The social relations that engender social capital also assure its circulation through the group and its continual replenishment and reproduction. Drawing on social capital carries with it the obligation to replenish the fund, depending on trust, expectation, normative values, cultural rules, etc., and some means—authority, shame, gossip, force—to enforce the obligation. In the context of the regional resource model proposed here, we define social capital as the configuration and functioning of social ties that occur within and between communities. Social capital is key to the flow of other forms of capital, as well as central to the dynamics of governance and resource utilization.

### **Human and cultural capital**

Closely related to social capital is human and cultural capital, which are key to understanding fishery dependence. These forms of capital are similar to social capital in that they depend on social ties that have meaning for the individuals who benefit from them. Human capital includes people and their individual occupational and familial roles, achieved through schooling, apprenticeship, experience, and other formal and informal training. This concept is better known among economists than either social or cultural capital, and is recognized by the general public (including potential employers) as something, if not entirely tangible, certainly useful.

Cultural capital is less familiar to and less widely recognized by the general public. Nevertheless, most potential employers inadvertently consider cultural capital in selecting employees. Cultural capital consists of specific behaviors, values, and skills transmitted among and between members of a population, including across generations, applied to their adaptation to specific environments including the transformation and utilization of natural, human, and social resources in those environments.

Cultural capital can be either subtle or overt characteristics and learned skills and behavior. The use of language and slang, notions of personal space, appropriate dress, presentation and learned use of specific technologies is part of a group's cultural capital. In addition, the myriad parts of personal cultures, such as personal preferences that make one more or less satisfied, comfortable and, most importantly, predictable to be around are part of cultural capital. People acquire cultural capital through families, peer groups, neighborhoods, special cultural centers such as bars or exclusive college campuses, churches or other voluntary associations.

### **Function of social, human and cultural capital**

Berkes and Folke define cultural capital as "factors that provide human societies with the means and adaptations to deal with the natural environment."<sup>43</sup> We extend the adaptive character in our formulation to include human, social, and economic capital variations and their interactions. If these interactions are disrupted or modified in a way that significantly reduces utilized marine resources, they may be modified to allow the system to recover, or if the disruption is too great, systematic collapse may take place.

It is assumed that the sociocultural evolution of specific adaptive strategies and occupations in a natural system such as a fishery can involve considerable individual and intergenerational investment to develop appropriate social, cultural and human capital networks necessary for the cultural and biological production and reproduction of households and families. This also entails long-term investment in gaining and applying knowledge necessary to compete for marine resources. As long as a healthy fishery exists - one that continues to promote the generation, mobilization, and use of the various forms of

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<sup>42</sup> Ibid, p. 305

<sup>43</sup> Berkes and Folke (1994)

capital - current individuals operating within the industry will be able to weather economic and ecological downturns and reproduce the fishery through adaptive shifts in resource utilization patterns.

Understanding the interplay of social, human, cultural, capital with economic and biophysical capital has rarely been attempted. In their discussion of the share systems that characterize payments to labor and capital in the New England groundfishing industry, Doeringer, Moss, and Terkla recognize the importance of these alternative forms of capital without explicitly defining them as we have.<sup>44</sup>

Like the communities that make them up, Natural Resource Regions can be variably 'open' or 'closed' depending on the dynamic flow of biophysical, cultural, and human capital. A fishery can also be the sole socioeconomic entity in a region or it may be embedded in a more complex socioeconomic whole, as is the case in New England.<sup>45</sup> We propose that NRRs are interconnected by the flow of total capital – information, ideas, people and their behavior, technology, money, resources and seasonal and annual changes in fishing strategies.

A fundamental premise of the regional model is that use of natural resources for one's primary livelihood engenders relationships of dependence between the extractors (e.g. fishermen) and their support networks. Significant changes in access to fisheries resources thus has a multiplier effect across these personal networks that affects all levels of the social structure, including communities, businesses, organizations, families and individuals. These networks are both formal and informal, and fluctuate with changes in participants and communities within the region. Dependence on renewable natural resources such as fisheries presents an opportunity, but also limits the degree to which participants can engage in alternate activities. As one fishery-dependent informant in Downeast Maine puts it: "...when I first went inland 10 or 12 miles from the coast and I looked around, I asked myself, how can these people possibly make a living?"

## 2.6. *Total capital and the NRR*

The direction of life activities towards natural resource extraction enlists various forms of capital—human, cultural, economic, and social, that when interfaced with the biophysical resources of the adjacent marine environment define the character of the region in which communities interact. The forms of capital which make up this dynamic in their whole are the total capital of the regional human ecosystem or NRR.<sup>46</sup>

Components of total capital are the same as those for NRCs with the addition of marine biophysical capital. Total capital is conceptually defined as the sum of all the component units of capital and their interactive states within a region. The interface between a regional natural system of extractive NRCs, their capital flows and the associated LME is here defined as a Natural Resource Region (NRR). An NRR is conceptualized as a network of Natural Resource Communities, linked to the marine resources of a Large Marine Ecosystem, whose existence is defined by the interactive flow of total capital. The context of this conceptualization may have a marine and fisheries focus depending upon its linkage to LMEs. The 'marine' NRR overlaps with the LME in both the terrestrial and marine sectors. For example, a fishing boat out at sea is a production-extraction unit of the NRR, relying directly on the physical attributes of the ocean to tap into the biological productivity of the fisheries of the LME (the NRR's biophysical capital). The fishing boat is thus an extension of the NRC from which it came, carrying with it social, cultural, and human and economic capital in its hunt for fish resources.

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<sup>44</sup> Doeringer, Moss and Terkla (1986)

<sup>45</sup> Doeringer, Moss and Terkla (1986)

<sup>46</sup> Dyer and Poggie (1998)



Non-marine manifestations of large ecosystems, such as the Great Plains or the Amazon River Basin, have their own NRC networks and capital flows, and thus also represent NRRs. Linkages to biophysical capital can be dominated by economic, cultural, or social capital, but most commonly in a NRR is a complex mix of these—comprising what is often described in fishery-dependent NRCs as a “way of life.” The conceptualization of capital flows within an NRR network lends understanding to the occupational valuation placed on a “way of life.” For example, Doeringer, Moss and Terkla show how kinship support systems—a form of social capital in our formulation—allow fishermen to maintain labor linkages to the fishing industry despite seemingly debilitating economic conditions.<sup>47</sup>

The Natural Resource Region model provides a spatial-temporal framework that links the biophysical with the human-ecological, and most importantly points the way to understanding system dynamics over space-time as forms of total capital flow in the system. The interaction between human, cultural, social, biophysical, and economic forms of capital in an NRR represents a continuous dynamic that changes over time and is subject to both internal and external influences. The NRR model provides managers with a powerful tool to help to anticipate the consequences of proposed policies and human-resource interactions arising as direct and indirect consequences of policies, often so lacking in attempts to ‘manage’ the environment.

## 2.7. Externalities to the NRR

Regional studies of human ecological processes help make possible systematic examination of the range of variation within particular political-ecological zones rather than depending on single fishery-dependent communities as type cases. The externalities presented for each capital form are idealized, non-exhaustive lists, and for any specific case must be empirically studied to ascertain the contemporary political ecology and environmental history of the NRR under consideration. Local inventions would not be considered externalities in that they would be part of the dynamic component of cultural capital.

### **Externalities**

As an externality, *technology* refers to the means by which resources are extracted and transformed for human use, and is most frequently developed in extra-regional locations and “imported” into NRRs under study. *Governance* is an externality that identifies the form and function of decision-making bodies, including the nature of policies and how resource policies are implemented. *Markets* refer to the linkages of the producers in any particular NRR with buyers in other NRRs and/or with extra-national entities such as global markets (e.g., what Jentoft refers to as the “global fishing village” or Greider the “global capitalist system”).<sup>48</sup> *Environment* as a regional externality refers to processes and consequences of changes such as global climate, ecosystem-wide shifts in temperature regimes, or sea level rise associated with anthropogenic factors of pollution (e.g. the greenhouse effect), or as part of other large-scale cycles of natural changes.

### **Population**

Population as an externality refers to the pressure of migration into coastal NRRs. Throughout the developing world, the coastal zone represents one of the last refuges for the impoverished and dispossessed. Coastal regions of Southeast Asia are under pressure from landless immigrants seeking new resources, or from those moving from one environmentally degraded coastal area to another that still supports viable marine-based communities. In the developed world, coastal areas attract economic entrepreneurs, the elite, and others desiring the recreational-cultural capital offered by life near the sea.

Different forms of capital are equally weighted in our ideal model to avoid *a priori* valuing or devaluing any specific criteria at the expense of others. This does not mean their

<sup>47</sup> Doeringer, Moss and Terkla (1986)

<sup>48</sup> Jentoft (1995); Greider (1996)

importance cannot differ across NRRs, as they clearly do. Such differentiation is guided by the nature of associated LMEs, and the ethnohistory and political ecology of associated human communities and their governance aggregates (e.g. states, counties). The operationalization and empirical measurement of these domains of capital and associated changes in externalities are currently being developed by the co-authors in field research in two diverse parts of the world—New England in the US, and Palawan in the Philippines.

Once assessment of total capital is completed, measured capital importance is ranked and compared. With this information, it is possible to anticipate the magnitude and direction of policy agendas (a governance externality) on the total capital flows of the NRR in question. This gives decision-makers the capacity to determine the most favorable policy options to apply in a specific Natural Resource Region in order to maximize desired management goals and minimize negative outcomes. This analysis considers the assessment of 'total capital value' to include *direct value* (derived goods and services), *indirect values* (e.g. ecosystem and NRC maintenance), *option values* (future potential uses), and *existence values* (derived from some esthetic appreciation of biophysical capital). An example of existence value derives from the knowledge of the continued existence of some marine species, whether personally observed or not.<sup>49</sup>

## 2.8. *Flows and Changes in Total Capital*

Natural Resource Regions have been described here as consisting of networks of Natural Resource Communities, held together by the flow of total capital. These networks include communities directly interfaced with the biophysical capital and communities on the interior margin, connected by roads or by waterways to the marine environment. To understand the interactive flows of the different forms of capital, we must examine the conditions under which residents of Natural Resource Communities operate within the system. A basic assumption here is that there is some degree of reliance on natural resources, in this case, the biophysical capital of a Large Marine Ecosystem. The concept of biophysical capital used here is similar to "natural capital," first introduced by Vogt.<sup>50</sup>

The occupational roles involved in biophysical capital extraction define NRC residents as extensions of their environment.<sup>51</sup> However, this does not mean that such systems are static and unchanging. NRRs are constantly in flux, in rhythm with the changing availability of biophysical capital to residents. For example, a downward trend in the availability of one targeted fish species, for whatever reason, is often associated with shifting effort towards other species by fishing units.<sup>52</sup> Innovation and invention in resource extraction can also shift the balance of resource availability, at times favoring one group over another, or at times resulting in the total collapse of exploited fishery stocks. Also, seasonal shifts in effort from one species to another are often practiced in NRRs. Pelagic seasonal stocks are supplemented in the off-season with benthic shellfish or crustaceans (e.g., combining lobster fishing with seasonal herring fishing by weirs in the eastern part of the Gulf of Maine sub-LME).

### **Response to biophysical capital decline**

When environmental factors result in a significant decline in available biophysical capital in an NRR, residents respond in culturally patterned ways. Unfortunately, the dynamic equilibrium in many world NRRs and their associated LMEs is being disrupted beyond normal recovery from intense anthropogenic pressures degrading the ability of environments to recover and ultimately leading to environmental disaster. The identified human-nature relationship that follows disaster in an NRR can be conceptually linked by the ecological-symbolic approach.<sup>53</sup> This approach recognizes the existence of culturally

<sup>49</sup> Goulder and Kennedy (1997)

<sup>50</sup> Vogt (1948)

<sup>51</sup> Dyer (1993)

<sup>52</sup> Dyer and McGoodwin (1994)

<sup>53</sup> Kroll-Smith and Couch (1991)

based responses to extreme environmental disruptions. Its basic tenants are: “(1) people exist in exchange relationships with their built, modified, and biophysical environments, and (2) disruptions in the ordered relationship between individuals, groups, and communities, and their built, modified, and natural environments are labeled and responded to as hazards and disasters.”<sup>54</sup> Disasters exceed the limits of the system to recover, and reaching such a state through poor policy or management, or failure of a technology externality (e.g. a major coastal oil spill) can permanently damage an NRR to the point of non-recovery.<sup>55</sup>

As a fundament of total capital flow in an NRR, it is assumed that there are limits to the system. Ecological models predict such limits in natural systems, but economic growth models generally do not. The explanatory power of the NRR relies on understanding limits and options presented by the total capital in the system. However, accepting and working within natural limits is antithetical to the economic strategy practiced by the wider capitalist society.<sup>56</sup> This worldview is best portrayed using what Catton and Dunlap call the Dominant Social Paradigm (DSP).<sup>57</sup>

The assumptions of the Dominant Social Paradigm are:

1. Humans are fundamentally different from all other creatures on earth over which they have domination.
2. Humans are masters of their destiny; they can choose their goals and learn to do whatever is necessary to achieve them.
3. The world is vast, and thus provides unlimited opportunities for humans; and
4. The history of humanity is one of progress, for every problem there is a solution, and thus progress need never cease.

A corollary to DSP is the construct, Economic Man, the idea that everyone acts individualistically to maximize satisfaction of their needs or desires. Hardin’s “Tragedy of the Commons,” the most commonly quoted rationale for fisheries management, limited access, and privatization, is based on a belief that “Economic Man” will inevitably overuse any property held in common.<sup>58</sup> As a result, the argument continues, common property should be privatized so that self-interest constrains the owner and improves stewardship.

Certainly, there were limits to natural systems. Unlimited access to resources without constraints on manner or means of extraction could lead to system collapse. However, examination of cooperative and co-management systems of fisheries management suggest there are alternatives to privatization. Furthermore, this project suggests that management is more appropriately conceived within the conceptual framework of the Natural Resource Region and the natural resource communities (NRC) of which they are composed.

Characteristics of NRCs that contrast them to the DSP model, and act as a buffer against degradation of the natural resource base are as follows:

1. Residents of NRCs are strongly linked to their resource base by behavioral and ideational patterns that blend with the natural order.
2. To the extent that anthropogenic activities may destroy renewable resources, NRC residents frequently attempt to practice local management of resources within their NRR. This allows for sustainable reproduction of total capital in the region.
3. Because natural resources are utilized and renewed within bounded areas of LMEs, they are viewed as limited and limiting in the variety of opportunities they provide their human stewards.

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<sup>54</sup> Ibid, p.361

<sup>55</sup> Dyer (in press)

<sup>56</sup> Goulder and Kennedy (1997)

<sup>57</sup> Catton and Dunlap (1980)

<sup>58</sup> Hardin (1968)

4. Progress, as in change towards a DSP model, is resisted to the extent that it threatens the sustainability of the community network and the capital flows that hold it together.<sup>59</sup>

The ideal NRC relies exclusively on renewable natural resources, but most contemporary fishing communities are not 'pure' NRCs. They are instead modified NRCs existing on a continuum of community somewhere between the ideal DSP and NRC types. The character of social capital is a key in distinguishing between a primarily DSP type community and a NRC, with the contrast between DSP social capital and NRC social capital being a central point of conflict.

An example of such conflict is the gentrification process and its impact on coastal fishing communities.<sup>60</sup> As more community space is gentrified for tourist and associated recreational pursuits, the squeeze on the commercial fishing sectors inhibits the maintenance of total capital within the functioning NRR network. There are other less apparent costs as well. Social capital within an NRR is based on kinship and cooperative social ties. This has positive effects on household maintenance and occupational continuity within families. Other benefits include lowering social service costs and maintaining mental and physical health.<sup>61</sup>

Although impersonal social contracts predominate between residents and outside organizations, they are not prominent within the NRC units. Extended networks of family and worker relationships (e.g. fishing crews) allow for intense cooperative interaction in the occupational roles of natural resource extraction. By comparison, a DSP community within the same region relies heavily on social contracts both within and without the community. A social contract can be defined as a voluntary and mutual agreement to engage in purposefully limited cooperative endeavor.<sup>62</sup> Emphasis on "social contract" versus "social relationship" can limit the degree of traditional stewardship expressed toward other capital components (e.g. biophysical capital). We illustrate the NRR model with an analysis of the contemporary Multispecies groundfish fishery of New England.

## 2.9. *The New England NRR and the Multispecies Groundfish Fishery*

The 1976 Magnuson Fisheries and Conservation Act (re-authorized in 1996 as the Magnuson-Stevens Act), was instituted to protect the marine resources of the United States. It established a 200-mile Exclusive Economic Zone (EEZ) to regulate fisheries in the federal zone. Four years prior to the passage of the Magnuson Act, in an effort to 'revitalize' community-based fisheries, the National Marine Fisheries Service (NMFS) was authorized to provide low-interest loans to build up a domestic fishing fleet.<sup>63</sup> At the time, there were virtually no social scientists advising NMFS on policy and no assessment was made of the potential impact of increasing the economic production capital (boats and gear) of US fisheries communities.<sup>64</sup> This loan program can be conceptualized as a "strong market externality" that artificially increased the available economic capital in the region. We suggest that the loan program was based on a DSP worldview that saw only economic opportunity in the EEZ without consideration of the potential long-term biophysical, social, cultural and human impacts to communities.

In New England, investors quickly took advantage of the loan program (which was open to anyone) and the fishing capacity of domestic fleets increased dramatically. Just about every major East Coast port including Gloucester, Boston, and New Bedford (Massachusetts), Portland and Rockland (Maine), Newport and Point Judith (Rhode Island)

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<sup>59</sup> Dyer (1993)

<sup>60</sup> Margavio (1992)

<sup>61</sup> Caritas Christi Health Care System (1996)

<sup>62</sup> Hillery (1982)

<sup>63</sup> The Fishing Vessel Obligation Guaranty Program was implemented in 1972 when Congress amended Title XI of the Merchant Marine Act of 1936 at the instigation of both the New England and California congressional delegations (Fricke, P., personal communication, 2002).

<sup>64</sup> McGoodwin (1990)

dramatically built up their fleets with powerful stern trawlers under the Fishing Vessel Obligation Guaranty Program.

Besides the buildup of the large dragger fleet, many small and medium size vessels were built, putting increased fishing pressure on both inshore and offshore stocks. Some of these smaller boats even ventured offshore to such rich areas in the Gulf of Maine and beyond as Cashes Ledge, Franklin Swell, Three Dory Ridge, and Platts Bank.<sup>65</sup> Contributing to the pressure on fishing stocks was the loss of prime areas of Georges Bank under a 1984 United Nations World Court decision. When the Court drew the Hague Line allocating parts of the Gulf of Maine and most of the Georges Bank's productive Northeast peak to the Canadians, fishing effort concentrated on the remaining grounds and accelerated stock declines.

Key respondents in fishing communities claimed that many of those who took advantage of the fishing vessel loan program were newcomers to the fishery.<sup>66</sup> Specifically, they claimed that from 1977-1980 many new vessel owners were outsiders whose primary occupations (e.g., doctor or lawyer) identified them as fishery "investors," not fishermen. As fishery "investors," they had no prior social, cultural, or human capital networks in the local fishing communities, and were thus not bound by the responsibilities and reciprocal exchanges of total capital that marked traditional fishing families, households, and networks. Furthermore, the sustainability and reproduction of the social, cultural, and human capital in the NRC fishing communities occupying the Natural Resource Regions of the New England Fisheries Management Zone was of no concern to these outsiders. This "outsider only" rationalization does not explain why Congress continued to reauthorize new funds until 1995.<sup>67</sup>

Build up of the Groundfish fleet resulted in intense pressure on stocks, both inshore and offshore. As competition for groundfish resources increased, the breakdown and loss of capital (human, social, cultural, and biophysical) also increased both within and between fishing dependent communities.<sup>68</sup> Competition and acrimony increased between both the fleets of different ports and gear types in the same ports: "...The draggers really believe that gillnets are one of the major problems because there are ghost nets that get left out in the ocean, and they fish forever." (Dragger; Gloucester, MA); "I mean, they should say, "it is the large scale mobile gear fleet tearing up the bottom (and) ...negatively impacting the food chain at its source." (Gillnetter; Gloucester, MA).

With the increase in fleet capacity and the pressure to provide "return on investment," overfishing of stocks followed. "NMFS representatives and Senators Gravell and Chaffee consistently made the point that the majority of overfished stocks on the East Coast were being overfished by domestic fishermen."<sup>69,70</sup> Despite NMFS advice in the late 1970's urging the New England Fishery Management Council (the Council) to address this problem, no effective measures were taken until implementation of Amendment 5 to the Multispecies Fishery Management Plan, a long negotiated plan to gradually cut fishing effort by 50 percent over 5 years. When NMFS scientists established that the primary groundfish stocks were more seriously depleted than originally thought, emergency regulations were imposed closing large portions of Georges Bank. The Council quickly drafted Amendment 7 to the Multispecies plan, drastically cutting the number of allowable days at sea (DAS) for the groundfishing vessels. It also eliminated significant exceptions to effort control regulations and broadened area closures to protect juvenile and spawning fish.

A 1998 National Research Council review of the New England groundfish stock assessment concluded that there was a significant overfishing capacity that could be directly traced to

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<sup>65</sup> Prybot (1999)

<sup>66</sup> Griffith and Dyer (1996)

<sup>67</sup> Fricke (2002), personal communication.

<sup>68</sup> Communities dependent primarily on groundfish include Galilee (Rhode Island), Chatham, New Bedford and Gloucester (Massachusetts) and Portland (Maine)

<sup>69</sup> Fricke (2002), personal communication.

<sup>70</sup> Dewar (1983)

the government loan program. "When foreign harvesters were excluded when the exclusive economic zone (EEZ) was introduced in the 1970s, various public plans were put into place to increase the capacity of the Northeast fishing fleet. The plans encouraged recruitment of harvesters and increased investments in the industry, evidently in excess of what the fishery could sustain."<sup>71</sup>

The overall impact of the groundfish declines and subsequent regulations were catastrophic. In 1980, there were 3,500 finfish harvesters and 5,700 workers in the processing sector in Massachusetts. By 1992, finfish harvesters had decreased to 1,500 and processing workers to 2,700 (a respective 58% and 53% decline in 12 years). Related social impacts ranged from declines in attendance and participation in local fishermen organizations, outmigration (some older fishermen even returned to Sicily and Portugal "in disgrace"), and fierce gear conflicts between draggers, gillnetters and longliners of groundfish. In addition, there was a withdrawal of economic support from local banking systems, attrition of fishermen (human capital) and loss of portside support facilities such as marine railways, and declines in health insurance holders in the industry.<sup>72</sup>

Notable household impacts included increased domestic strife and avoidance behavior: "We used to go out to the club and go to church, but I don't do that anymore. What is the point? There is nothing good to talk about. We just go from the boat to the house. Sometimes we go to church, but it's usually now only on Easter or other holidays." In Gloucester, MA, participation in the local fishing association *Societa Siciliana* decreased from 304 in 1991 to 89 in 1995 (a 70% decline) and Sons of Italy from 200 in 1991 to 79 in 1995 (a 60% decline). By comparison, non-fishing associations such as the Gloucester Elks, whose membership consisted of newly arrived Boston suburbanites, increased from 76 members in 1991 to 185 in 1995.

In the health care sector, increasing health care costs and the changing nature of eligibility for public programs led to a high proportion of the industry being left without health insurance. Lack of insurance caused even greater hardship as regulations restricted fishing effort and incomes declined, forcing already stressed fishing families out of the industry. A survey of 485 finfish fishing industry households in Massachusetts found that increased insurance costs and declines in income forced many families to go without health insurance.<sup>73</sup> In 1996, forty-seven percent of surveyed male adults, 37 percent of women, and 34 percent of children were uninsured at least one month during the year, representing an overall ten year decrease in insured fishing family members for the region of 35 percent.

The total at risk from lack of health insurance was 52 percent, including 43 percent uninsured and an additional 9 percent who were uninsured at the time of the survey but had a period of insurance during the last year. By comparison, the National Medical Expenditure Survey found that only 20 percent of the U.S. population was uninsured for all or part of the year 1989.<sup>74</sup> For the state of Massachusetts, the rate of uninsured was 13 percent for adults. Thus, the 1996-uninsured rate in fishing communities was at least three times higher than the statewide average.

Government reaction to the crisis included a \$25 million buy-back program for groundfishing vessels, and retraining programs for fishermen. According to Andrea Marcaurelle, loan specialist for the NMFS Northeast Financial Services Office, the goal of the program "was to take out the most fishing capacity for the amount of money we had." Beginning with a \$2 million pilot program which bought out 11 vessels, the initiative progressed with another \$23 million and a final buyout count of 67 East Coast fishing vessels and their fishing permits. Bought out vessels were either scraped, sunk at sea, or transferred to non-fishery use such as research vessels for organizations such as the Maritime

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<sup>71</sup> NRC (1998:37)

<sup>72</sup> Griffith and Dyer (1996)

<sup>73</sup> Caritas Christi (1996)

<sup>74</sup> <http://www.meps.ahrq.gov/>

Discovery Center in Rochester, NY.<sup>75</sup> Ironically, the buyback program represented an attempt to decrease the over-capacity in economic (fishing) capital originally created by the vessel loan program. Unfortunately, a recent evaluation of the buyback program indicated that it ultimately failed to reduce capacity.<sup>76</sup>

Retraining programs represented an effort to redirect *human capital* into alternate occupational roles. Some characteristics of fishermen arising from their collective cultural capital posed challenges to the retraining effort. For example, many fishermen have independent natures and they find it difficult to comply with set (clocked) schedules within a workplace. Others have difficulty relating to support personnel with different worldviews and there are often linguistic barriers to retraining. In addition, fishermen who were 40-45 years of age regarded participation as evidence of having given up on fishing and considered it losing face in front of their peers.<sup>77</sup> Despite these barriers, by 2000 the retraining program run by the Gloucester Fishermen and Family Assistance Center, under the guidance of the Gloucester Fishermen's Wives Association, had successfully trained 305 fishermen and other eligible workers, 137 of who obtained new employment.<sup>78</sup>

The overall loss in social, cultural, and human capital during the groundfish crisis was accompanied by the breakdown of capital flows within and between fishing NRCs of New England. A cascade of multiplied effects reduced fish production, broke down credit relationships and social contracts, decreased cooperation and sharing on shore and at sea (e.g., sharing fishing information), and increased social problems as job satisfaction plummeted.<sup>79</sup>

The New England NRR groundfish case study illustrates how a strong market externality (low interest federal loans for purchase of fishing vessels) combined with the loss of a historically utilized and significantly important fishing area through the 1984 Hague Line decision (a governance externality) contributed to drastic declines in available biophysical capital (groundfish stocks). This destabilized the fishery-dependent NRCs of New England, creating subsequent declines in total capital and disruption of capital flows in the system. These declines continue to have severe community impacts that are socially and economically devastating to fishing families and households in the region.

An anthropologically informed, community NRC-based assessment guided by a NRR/total capital model could have mitigated the decline in the multispecies fishery and the associated human impacts that followed. For example, a careful assessment of the community impacts of the Fishing Vessel Obligation Program informed by the NRR model could have led to checks on overfishing capacity by restricting the program to community residents having direct and historically dependence on the fishery. This could have reduced overfishing and sustained the total capital networks of the now (belatedly) recognized Fishing Dependent Communities of the region.<sup>80</sup>

Successful operationalization of the NRR approach requires adaptive flexibility in natural resource governance strategies - a flexibility that is only now being considered in New England. Funding of regional community studies of fisheries in New England and the recent creation of a Social Science Advisory Committee by the Council, should lead to improvements in the nature and direction of future management decisions.<sup>81</sup> The

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<sup>75</sup> Prybot (1998)

<sup>76</sup> Federal Fisheries Investment Task Force (1999) <http://www.nmfs.noaa.gov/sfa/ITF.html>

<sup>77</sup> Griffith and Dyer (1996)

<sup>78</sup> Angela San Filippo, personal communication.

<sup>79</sup> See Pollnac and Poggie 1988; Gelles 1974; Strauss 1979

<sup>80</sup> See discussion of National Standard 8 of the Sustainable Fisheries Act discussed in the introduction.

<sup>81</sup> The Social Science Advisory Committee consists of 14 social scientists from the New England region familiar with current issues and problems facing regional management and fishery-dependent communities. Their mandate includes advising the NEFMC on policy, reviewing fishery management options and FMPs, and advising on ways to improve communication and collaboration among communities and managers.

potential impacts on fishing dependent communities and the total capital upon which they depend would be identified and, hopefully, mitigated.

### 2.10. *Developing an NRR Model for New England*

Development of fisheries management plans for New England is complicated by the diversity and complexity of the historical ecology and geography of the region. Because of this complexity, understanding the social and economic outcomes of any particular management measure is fraught with pitfalls. What may seem obvious as a likely outcome in one sub-region may not apply elsewhere. Relying primarily on stock assessments to select management options without consideration of the diversity of human communities and strategies across the region can result in deleterious oversimplifications.

Regional management needs to be refined with timely and in-depth understanding of the complexities of critical aspects of the human use equation. In each region, the unique dynamics of the fishing people and their communities stem from the history of their interactions with the environment and the opportunities afforded by the biophysical capital of the region. For example, in the Downeast Maine Sub-Region (Downeast), poor soils, community isolation, and underdeveloped transportation systems have resulted in few economic alternatives to fishing.

Many Downeast communities approach the 'pure' NRC type, with strong dependence on local natural resources, a high degree of environmental awareness among residents, and few inroads by forces of gentrification (economic externalities). At the opposite extreme, the DSP community of Stonington, Connecticut, historically a Portuguese fishing enclave with in-town residences dominated by fishing families, is highly gentrified. Most fishing families cannot now afford to live in the upscale water front neighborhoods, and live in lower cost areas away from the water.

Commercial fishing activities in Stonington constitute a small portion of the local economy. The fishing pier has no room for expansion, is surrounded by tourist facilities such as seafood restaurants and souvenir shops, and is just down river from a large marina for recreational boaters. While folks Downeast talk of fishing as a sustainable way of life, fishermen in Stonington talk about fishing as an economic survival act, their struggle to "keep their job," and the general lack of community ties among fishermen. Fishing, as everywhere, carries with it a great degree of uncertainty, but in Stonington this is magnified by the lack of expansion opportunities, numerous regulations and paperwork, the overall decline in fish stocks, days-at-sea restrictions, and market limitations.

One of the first respondents interviewed in Stonington (October 1998) operated one of two dockside fish wholesale operations. Six months later, he was out of business and his facility stood empty. This represented 50% of the total fish processing capacity in the port. Thus, the "Connecticut" sub-region (Stonington plus several smaller enclaves of finfish and lobster operations) is highly DSP oriented with fishing a tenuous but steady enterprise. In contrast, Downeast is much more NRC oriented and fishing intense. Overall, we divided New England up into *eleven* distinct subregions, centered on major ports or clusters of fishing or fishing-related industry. We then considered the social, cultural, human, and economic capital devoted to fishing enterprises in each of these subregions.



### 3. Measuring Fishery Dependency and Externalities in the New England NRR

As noted in Chapter 2, after the Magnuson Act effectively eliminated foreign fleet competition by creating the 200-mile exclusive economic zone, the US government substantially expanded the fishing capacity of the domestic fleet by granting low-interest loans for fishing vessels. This change occurred virtually over night without analysis of the potential impact of such an expansion on fishery stocks and fishery-dependent populations in the coastal zone.

This promotion of vessel ownership, combined with technological advances in navigation and gear development, led to a great expansion in fishing capacity and effort and ultimately, proved disastrous for both fishing stocks and fishing communities and regions.<sup>82</sup> For several years in New England, losses in fishery stocks combined with losses in regional total capital—social, cultural, human and economic capital characterized a declining industry and lowered fishing productivity.

Partially in response to such declines, the Sustainable Fisheries Act (SFA) amended the Magnuson Fishery Conservation and Management Act (renamed the Magnuson-Stevens Fishery Conservation and Management Act) in 1996. SFA amendments and changes to the Magnuson Act include numerous provisions requiring science, management and conservation action by the National Marine Fisheries Service (NMFS).<sup>83</sup> Importantly, this Act provided fishery management guidance by establishing National Standards on such topics as overfishing, by-catch and fishing communities.

SFA reflects changes in the political ecology of management that has experienced an increase in the number and complexity of stakeholder groups and special interest agendas. Now commercial harvesters, recreational fishermen, fisheries managers, fishery scientists, fish processors, fishery unions, and environmental organizations are all part of the debate over the future and uses of fishery stocks. Out of this debate has come a recognition of the "fishing community" as a unit of management, and of fishing dependence as a potential gauge of regulatory impact.

Specifically, National Standard 8 states: "Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities."<sup>84</sup>

As a result of National Standard 8, all fishery management plans (FMPs) are now required to account for and assess the potential social and economic impacts to fishing communities of any particular management option under consideration. The caveat is that fishery conservation supercedes consideration of specific human (i.e. community) impacts from regulations. In many cases, councils use a regulatory impact review (RIR) in lieu of a community-based social impact assessment (SIA). An RIR differs from an SIA in that an RIR does not consider as important the historical dependence on and participation in a fishery by fishermen and communities (NMFS 1998).

A proper SIA requires that fishing dependence be measured in some way. Just what is a 'fishing community', and how we can measure 'fishery dependence' is not wholly answered in the legislation. Section 3(16) of the MSFCMA (16 U.S.C. 1802(16)) defines fishing community to mean "a community which is substantially dependent on, or engaged in the harvest or processing of fishery resources to meet social and economic needs, and includes

<sup>82</sup> Griffith and Dyer 1996; Dyer and Poggie 2000

<sup>83</sup> <http://www.nmfs.noaa.gov/sfa/>

<sup>84</sup> SEC. 301. NATIONAL STANDARDS FOR FISHERY 16 U.S.C. 1851 (104-297)

fishing vessel owners, operators, and crew and United States fish processors that are based in such a community." The NOAA General Counsel has interpreted "fishing community" as simply any place where vessel owners, operators, and crew or U.S. fish processors are based.

Small boat fleets run by family fishermen are not given specific consideration yet clusters of such boats are spread throughout New England and make up a large proportion of the total number of licensed vessels in the region. As coastal communities have developed, fishing has declined in its overall percentage contribution to local economies. Nevertheless, small-scale fishing enclaves or fishing 'villages within towns' define themselves not by their local community alone but through a network of connections with other such villages within other towns.

Such embedded villages have become more common as fishing fleets have shrunk and the value of commercial fishing dock space has risen. The small-scale fishery is presently endangered in places such as Cape Ann and the Gulf of Maine, where a shutdown of the inshore fishery via enlarged closed areas threatens the sustainability of the family-owned fleet. Commercial fishermen and processors are also concerned that a geographically based (site-specific) interpretation of dependence could harm "fishing communities" that are based on shared interest rather than shared place.

Efforts to develop a baseline description of New England fisheries have been sporadic and not linked to any conceptual-theoretical framework. Baseline data provides for measurement of change and adaptation brought on by adoption of new management measures or through other vectors of community change such as gentrification or environmental degradation. Baseline data collection should strive to establish a set of plainly understood benchmark terms and concepts that once communicated to managers become part of their decision-making tool kit. Research priorities can also be tailored to the identification of immediate and relevant information from a region or community.

Social scientists engaged in fisheries or fisheries-dependent community research may intuitively understand why a port profile or regional assessment is significant for anticipating the impacts of regulatory change. However, such understanding must be linked up to a theoretical framework that is understood by managers and social scientists alike for the data to have any cognitive relevance in their decision making. Explanations should build on what is known (the baseline template, or community profiles, regional assessments, and variables such as 'educational level' and 'ethnicity').

Since much of the government's statistical database is aggregated to the county level, the county is a highly convenient unit for statistical interpretation of change processes. One solution to the problem of shifting baselines with a system under stress is to use measures that are independent of immediate flux in particular communities. Such measures can identify dependency at levels above the community, and thus fit well with a regional approach to dependency analysis and policy making.

While we suggest the use of this approach as one step towards improving knowledge about the likely impacts of regulatory change on fishing communities, we do caution that frequent "sampling" at the community level is needed to confirm the analyses. Furthermore, because the proposed measures rely on statistical data (regional census data) that is extremely limited in the numbers of parameters of interest, we strongly encourage the funding and use of in-depth studies on a regular basis.

### 3.1. *Using Dependency Ratios*

Although measuring fishery dependence is considered crucial to recent management goals, few attempts to do so have been made.<sup>85</sup> Developing comparative dependency ratios is one solution to the measurement of fishery dependence. Ratios of various forms

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<sup>85</sup> Griffith and Dyer 1996

are measures commonly used to analyze and compare independent population units with different age, income or social structures. A dependency ratio is a special application of the ratio approach that provides a summary measure of the relationship or dependency between two related but independent populations. This measure represents one of a family of standardization techniques commonly employed in demography to examine and describe aggregate population phenomena. Dependency ratios are useful because they allow one to make direct comparisons between independent groups rather than just describe a group's proportionate share within the sample or universe of interest. An added advantage of the dependency ratio is that, unlike Hoover and other dissimilarity indexes, dependency ratios are statistically insensitive to population size and so allow for direct comparisons across regions.

Dependency ratios compare some sample population (the numerator) against a base population (the denominator). The higher the ratio the higher the hypothetical dependence of the numerator population upon the denominator population. The youth dependency ratio is a common example of this type of application as employed in demographic research. In this case, the population aged 0 to 15 is divided by the total working aged population 16 to 64 years of age. The higher the resulting ratio the more young people the working aged population has to support. The lower this resulting ratio is the fewer young people the working-aged population has to support.<sup>86</sup>

Dependency ratios are used by economists,<sup>87</sup> demographers,<sup>88</sup> and both ecologists and coastal resource management researchers.<sup>89</sup> Because of their flexibility of application and wide array of use within the social and physical sciences they are commonly recognized as a useful diagnostic tool for comparative research. However, our review of the literature found no direct application of dependency measures in the analysis of the regional management of fisheries, or in the delineation of fishery dependent communities. We are hopeful this application will add an additional useful diagnostic tool to this research discipline.

### 3.2. *Community Measures of Fishery Dependence*

An ideal measure of the dependence of a community on a production sector accounts for the complexity of that sector and the contribution of that and other sectors to the overall community dynamic. Fishery components include the fishing fleet, transportation, processing/marketing, and related supply and repair businesses. However, management focuses on the fishing sector, with little attention paid elsewhere. Unfortunately, the regional census data we use to generate our comparative dependence measures also focuses on this sector. Our comparative fishing dependence measure is thus best viewed as a comparative tool to be tempered with the local ethnography of communities and regions. For example, Boston has historically had a central role in regional and international marketing of fishery products, yet has a small contemporary fleet for the size of the port. Thus, focusing on the harvesting sector for this port would underestimate the contribution of the marketing/transportation sectors to the overall fishing industry of Boston and the region. What should not be overlooked in the search for fisheries dependency is the equally important consideration, what we term "Essential Provider." While Boston's harvesting sector is modest, the service Boston provides to other fishing communities is essential to their survival. The port profiles highlight the importance of retaining local-level data collection to complement the systematic regional efforts described herein.

One conceptualization of community that addresses dependence is the Natural Resource Community: "a population of individuals whose primary cultural existence depends upon

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<sup>86</sup> Weeks (1989).

<sup>87</sup> Mason (1988), Horrell and Humphries (1992) and Frankel (1992)

<sup>88</sup> Massey (1987), Ahlburg (1993), Ahlburg and Vaupel (1990) and Jiang (1994)

<sup>89</sup> Howarth (1988), Levitan (1992), Johnson and Carpenter (1994), Livingston (1991), Mangel (1993).

the utilization of renewable natural resources."<sup>90</sup> Dependence in this community model is linked to cultural dependence on sustained fishery stocks. Declines in fishery stocks are therefore key to measurement of temporal changes in the fishing culture of communities and regions. However, external changes in the place and space of fishing communities (gentrification) can also force fishermen out of their occupational roles despite the ongoing sustainability of any available fishery stocks. This is accelerated when fishing efforts are reduced due to regulation or market influences.

Another community-centered attempt to measure fishery dependence stems from identification of social, cultural, and economic indicators, such as fishing monuments, fishing unions, and numbers of processing facilities to derive a Fishing Dependency Index (FDI) of the major ground fishing ports.<sup>91</sup> Although Dyer and Griffith's cumulative index included diverse indicators, it was not a comprehensive and dynamic measure. It did not link communities across common regions or measure changes in total capital forms across fisheries, since it was confined to the five identified primary ground fishing ports (New Bedford, Gloucester, Chatham, Point Judith, Portland) in New England.

### *3.3. Community Vulnerabilities and Externalities Affecting Fishery Dependence*

Change between and within fishing dependent communities is occurring at an ever-accelerating pace. Driven by externalities of development, changes transform the linkages between communities and regions and modify the contexts within which people live and work. In New England, the significant forces of gentrification are modifying the coastal areas. Gentrification is a nation-wide trend as more people of means are attracted to coastal areas as places to live, play, and own property. This trend often plays out as a direct threat to established enclaves and communities dedicated to commercial fishing.

The mystique of commercial fishing is often evoked in posters and brochures advertising the quaint characteristics of New England by the sea, despite the fact that in many of the places depicted, gentrification has forced commercial fishing to the brink of extinction. For example, in highly gentrified Hyannis, Massachusetts, fishing interests in the community have been squeezed into a small piece of the overall town dock with the highest docking and unloading fees (\$1.00/foot of vessel length/day) in New England. This decline of space and place has occurred despite the fact that significant runs of valuable fish such as fluke are still found in waters off Hyannis. Fishermen, who would prefer to dock in Hyannis for safety and convenience, come from other ports specifically to target this rich resource. However, landing fish amounts to a potential 'crash derby' as boats wheel and turn in the small space to offload their fish product one at a time to an out-of-town fish trucker.<sup>92</sup>

Such transformations strain the ability of fishing enclaves and communities to reproduce their particular forms of total capital. Thus, social networks, access to marine resources, and commitment to the occupation of fishing are devalued, while other aspects such as recreational fishing, tourism, and vacation residence construction begin to dominate. The argument can be made that maintaining a mixed economy, which allows for both fishing dependent populations and new wave populations to co-exist, is a viable option. Yet, evidence shows that when the momentum for transformation to non-traditional (gentrified) processes takes hold without protection for existing fishing operations, essential and irreplaceable fishing infrastructure (ice houses, marine railways, fish processors) is often lost.

Essential fishing infrastructure is impossible to replace once an upward shift occurs in property values and uses.<sup>93</sup> In the past, traditional fishing communities have not had any need for protective adaptations to resist such change. The energy to fight such changes

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<sup>90</sup> Dyer et al (1992).

<sup>91</sup> Griffith and Dyer (1996)

<sup>92</sup> Dyer, Poggie and Hall-Arber (2000).

<sup>93</sup> Griffith and Dyer (1996), Bergeron, personal communication (1999)

divides the attention and efforts of fishing populations to survive such a dynamic. This is particularly true when they are also burdened by increasingly numerous and complex fishing regulations, described as regulatory layering.<sup>94</sup>

A recent example of this is the transformation of the Mississippi coast from a multi-ethnic fishing culture of Southeast Asians, Black and Whites to a gentrified row of gambling casinos (dockside gambling). Shoreside, nothing remains of the once thriving fishing cultures of Biloxi and Ocean Springs. Remnants struggle to survive in the backwaters and upstream inaccessible for casino development. In the New England sub-NRRs, the strong dependence on marine biophysical capital makes it crucial to recognize how management choices can affect community sustainability.

Downeast Maine, with a rugged coastline and strong dependence on fishing is one of the poorest areas in the region. Any curtailment of access to the fisheries could seriously hamper the ability of locals to make a living. In a social impact assessment of the New England herring fishery, Dyer, Poggie and Hall-Arber demonstrated crucial dependence on the herring-processing sector in several coastal communities.<sup>95</sup> At that time, fishery managers were considering allowing offshore processing of the fish. Locals anticipated that such a step would effectively put the onshore processing sector out of business, disenfranchising up to a thousand workers and creating economic hardship and total capital losses across these fishing-dependent communities.

### 3.4. *Fishermen Individual-level Characteristics and Dependence*

Not everyone can be a fisherman, and once a person becomes a successful fisherman, it is very difficult for him or her to assume other occupational roles. The steps to fishing success entail a highly selective process characterized by investments of time and behavior. Individuals who are thus selected tend to be uniquely suited for this occupational role, which tends to preclude their being selected to other ones.

Fishing is a hunting activity that has psycho-cultural requirements unmatched in any other contemporary occupation. Because the hunting lifestyle is rare today, it is hard for persons who have not studied or experienced this life strategy to understand the motivations and requirements that make one a successful hunter at sea. Nevertheless, we argue that fishing is unique in our contemporary space and time and requires special understanding and consideration in its management.

Dependence on natural resources necessarily limits occupational roles of residents and can result in an intense assimilation of some offspring to the fishing lifestyle.<sup>96</sup> Part of the assimilation process occurs through the incorporation of appropriate newcomers and youth into existing social relations and cooperative networks. Another part of this process comes in the form of self-selection by those who have the necessary psycho-cultural prerequisites to be successful in this way of life. Assimilation coincides with the creation of boundaries that protect these established networks of social capital against external (competing) networks.<sup>97</sup>

Boundaries are also defined by the sharing of special knowledge on where, when, and how to fish targeted species. These boundaries can be distinctive enough to delimit fisheries even within communities by gear type, ethnicity, or by generation.<sup>98</sup> In communities homogeneous by gear type, such as the lobster gangs of Mid-coast Maine studied by Acheson, knowledge is shared by distinct groupings that have territories established by tradition and effort, and which are informally protected and respected.<sup>99</sup> Other

<sup>94</sup> Dyer, Poggie and Hall-Arber (2000)

<sup>95</sup> Dyer, Poggie and Hall-Arber (2000)

<sup>96</sup> Firestone (1967), Ruddle (1994)

<sup>97</sup> Acheson (1987); Palmer (1994).

<sup>98</sup> Acheson (1987); Griffith and Dyer (1996); Dyer and Leard (1994)

<sup>99</sup> Acheson (1985)

characteristics include limits on the sharing of knowledge between kin and gangs and a high degree of personal independence.<sup>100</sup>

On the psycho-cultural level, Poggie provides strong support for the idea that a deferred gratification orientation is inherent in being successful at small-scale fishing and is therefore one of the psycho-cultural components of a maritime life.<sup>101</sup> Deferred gratification provides the psycho-cultural underpinnings for anticipation and management of uncertainty in resource availability. This is clearly adaptive in fishing communities where fluctuations in annual catch and market conditions contribute to high periodicity of income. For example, this attribute allows individuals to save monetary resources when abundant to provide a reserve for potentially leaner seasons ahead. Those who are unable to defer gratification are unlikely to be successful as fishermen or to remain long in this occupational culture.

The indices we are advocating in this paper should not be taken to mean that fishing is a highly fungible activity. In other words, alternative occupations are not easily substituted or exchanged for fishing as an occupation or as a way of life. A cultural dependence on renewable natural resources that must be hunted and the behavioral characteristics of fishing populations has long insured the continuity of a tradition of fishing.<sup>102</sup>

This argument is most applicable to the small to medium-scale operations characteristic of inshore lobstermen, day, and short-trip fishermen that also have a high preponderance of owner operators. Larger-scale operations such as scallop boats out of New Bedford that formerly employed as many as 13-15 men (before regulations set a 7-member crew limit) were less likely to rely on "traditional" fishermen. Crewmembers tended to be "young men with strong backs" rather than necessarily individuals with particular psycho-cultural characteristics, members of fishing families or a fishing way of life. Interestingly, Pollnac and Poggie found fishermen in the port of New Bedford had the lowest overall level of job satisfaction in their New England regional sample.<sup>103</sup> Nevertheless, when the large-scale operations were scaled back due to restrictive management measures, some of the vessels returned to a more traditional crew composition with kin and friends having first priority for job retention.

Factors such as ethnic barriers and economic marginality can also affect measures of fishing dependency among individuals. Before the Gloucester dragger fleet was decimated by stock declines and regulations, many crew were middle-aged Sicilian immigrants with poor English language skills and little occupational experience outside of fishing, and thus were highly dependent on fishing.<sup>104</sup>

Such dependence is not easily modified because it is so specifically linked to utilization of a particular biophysical resource—fish. This affects how people work and live, the schedule of their lives, their desires and needs as well as the uncertainty and risk required for success in this way of life. Given the occupational characteristics and the special forms of cultural capital needed to extract resource from nature, it is very wrenching for individuals to attempt to change their way of life and pursue a different occupation. In many cases it is impossible for individuals to do so. This fact can lead to severely negative psychological, family, and social consequences.

In their study of the structure of job satisfaction among New England fishermen, Pollnac and Poggie used nine different measures of this construct.<sup>105</sup> These were drawn from a

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<sup>100</sup> Palmer (1994; 1991; 1990), Griffith and Dyer 1996, Dyer and Poggie (2000)

<sup>101</sup> Poggie (1978)

<sup>102</sup> Characteristics typical of successful fishermen include: ability to defer gratification, ability to adapt to working non-traditional hours, and a profound need for personal independence as well as a proclivity for working on the sea and a devotion to family traditions.

<sup>103</sup> Pollnac and Poggie (1988)

<sup>104</sup> Griffith and Dyer (1996)

<sup>105</sup> Pollnac and Poggie (1988)

principal component analysis of the 22 items shown in Table 1. Two of the most significant questions asked whether the respondent would still go into fishing if he had his life to live over and whether he would advise a young person to go into fishing. Whether or not the respondent said he would go into fishing if he had his life to live over is a measure that is considered by many researchers to be the best single indicator of job satisfaction.<sup>106</sup>

While the relationship of job satisfaction to other variables such as port, age, owner-skipper status, and type of fishing is very complex, for the overall New England sample (Maine, Massachusetts, Rhode Island), the high level needs factor is the strongest predictor of the job satisfaction measure. Thus, the factor considered the best single indicator of job satisfaction is whether a person said he would go into fishing if he had his life to live over. This finding indicates that self-actualization is an important component of job satisfaction among New England fishermen.<sup>107</sup> This is contrary to the opinion expressed by some that fishermen only care about making money (the 'greedy' fisherman/tragedy of the commons stereotype).

**Table 1. Rotated factor loadings of job satisfaction items on middle-level, basic, and high-level needs factors (modified after Pollnac and Poggie 1988).**

	Needs Factors		
	Middle-level	Basic	High-level
Time away from home	<b>.81</b>	.09	.21
Hours spent working	<b>.72</b>	.25	.17
Time for recreation/family activities	<b>.71</b>	.06	.12
Ability to come and go as desired	<b>.61</b>	-.12	.41
Time it takes to get to grounds	<b>.47</b>	.21	.14
Doing deckwork on vessel	<b>.41</b>	.12	.40
Opportunity to be own boss	<b>.39</b>	-.21	.34
Community in which live	<b>.39</b>	.12	.21
Cleanliness	-.03	<b>.59</b>	.02
Physical fatigue of job	.03	<b>.56</b>	.02
Predictability of earnings	.11	<b>.49</b>	.08
Mental pressure on job	.18	<b>.48</b>	.03
Job safety	.19	<b>.45</b>	.11
Earnings	.19	<b>.36</b>	-.15
Healthfulness	.21	<b>.31</b>	.26
Being out on the water	.14	-.02	<b>.71</b>
Adventure	.16	.05	<b>.71</b>
Challenge of job	.18	-.01	<b>.66</b>
Working outdoors	.23	.08	<b>.57</b>
Feeling job is worthwhile	.12	.28	<b>.51</b>
Peace of mind	.28	.24	<b>.34</b>
Performance of state and federal officials	.20	-.15	.22

Given the argument that fishermen must be uniquely psycho-culturally adapted to be successful at their work, it stands to reason that people who have been in fishing for an extended period would tend to have the greatest number of these characteristics. Individuals lacking such characteristics would be likely to seek alternative employment. Over time there would be a tendency for such characteristics to dominate a fishing fleet. Furthermore, this argues that any group of successful fishermen would be unlikely to be suited to a 9 to 5 working environment. This is anecdotally confirmed with fishermen who

<sup>106</sup> Robinson, Athanison and Herd (1969).

<sup>107</sup> Maslow (1954)

have tried other occupations such as engineer, oceanographer, gas station attendant, or truck driver but found that they were dissatisfied and returned to fishing. These were all people with prior experience fishing and who returned to it because it better suited them. These observations suggest why fungibility (or interchangeability) of fishing with other occupations is so difficult. This not only affects how one looks at the construct of “dependency on fishing” but also raises the important issue of job satisfaction and its many known implications for health and well-being of individuals and families.

In the aforementioned analyses by Pollnac and Poggie, they argue that job satisfaction is a pivotal variable in people’s lives. Job satisfaction profoundly impinges on people’s mental and physical health, and low job satisfaction can result in increased family violence and other psycho-cultural and psychosocial maladies. Fishermen as a group express a high degree of job satisfaction:

*“I have been in this business for 45 years, and if I had to go back and do it over again – I would.”*

*“Fishing is my life – I love being out there on the water”*

*“This is the greatest job in the world – because you have no boss, and are free out there on the water.”*

*“In fishing you set your own hours – you can work hard or not, depending on how much money you want to earn – it’s all up to you.”*

A reduction in job satisfaction can accompany fishermen who are well adapted to and selected for fishing when they are forced to transfer to jobs they are not well suited for. Fungibility thus is a key consideration that amplifies the dependency factor of individuals on fishing and collectively of populations of individuals within communities and regions on the fishing industry. This is especially true in populations of well-established fishermen who remain in the industry even though it is difficult to do so at this time because of low stock levels and corresponding government regulations.

### 3.5. Precautions in Defining Dependency

It is extremely important to note that strictly defined, “fishing-dependent communities,” as stand-alone, independent entities are very rare in contemporary settings. As the core of fishing’s cultural, social, and economic activity is surrounded by non-fishing development, the percentage contribution of the fishing-related activity to the total capital of the community may be diminished, particularly with regard to occupational numbers. Just fifteen years ago, there were over 90 medium to large-scale draggers with 5 to 7 men crews in Gloucester Harbor, today fewer than a dozen are in operation, most with smaller crews. Nevertheless, the economic impact of fishing activities remains high in Gloucester with significant landings and exchange associated with the two-year old display auction.

Other smaller ports, such as the fishing communities of New Hampshire, may retain infrastructure and fleet size despite an increase in surrounding coastal development. A 1978 study (Acheson et al) of Seabrook/Hampton, Rye and Portsmouth describes extant fishing activities and infrastructure within a context of surrounding gentrification and development. In 1978 the Seabrook /Hampton fishing complex consisted of 35 lobster boats and 12 vessels that participated in dragging, gillnetting, and/or switched gear to pursue herring or sea urchins. Twenty years later, the number of vessels has remained essentially unchanged, although over half the draggers are inactive because of closures and other restrictions on catch. Other changes include declines in numbers of individuals hired as crew. Many fishermen are “going it alone” and often migrating seasonally to other areas to fish species such as monk fish and dogfish.

Overall, fifty commercial fishing vessels, both the operative and idle, still grace the port facility near Seabrook. However, tourist development in nearby Hampton has increased tremendously over the last twenty years. During the summer peak, fishermen and their families are lost in a swarm of thousands of daily visitors taking advantage of the nearby diversions - beach facilities, restaurants, hotels, bars, and nightclubs. Thus, the overall



contribution of the fishing sector has declined dramatically in twenty years, but the scale of fishing remains essentially constant, although seriously threatened by recent fishing regulations. Moreover, even though the contribution of fishing to the local economy has declined, and no one could describe tourist-driven Hampton as a "fishing dependent community," the infrastructure and social yield of fishing has been sustained. However, looking at our dependency indices puts the New Hampshire ports in the lowest third of fishing dependency (Table 2).

Consequently, we cautiously use the concept of dependency and ask: (1) what is the total collective contribution of such communities to local and regional fishing commerce, and (2) what would be the total capital replacement costs if we allowed such communities to be destroyed by management regulations that fail to take into account regional and spatial differences in total capital interactions in fisheries?

The tourist restaurants and hotels of Hampton, for example, have no real substitute to offer their customers if the fresh fish and traditional ambiance provided by the local fleet is lost. Moreover we cannot discount survivorship of total fishing capital in the face of surrounding development and growth. Managers should identify and conserve fishing facilities and populations that collectively provide a substantial benefit to the overall fishery commerce of a region, even if such commerce does not dominate the economy of a specific town or city.

If "fishing dependent communities" are so narrowly defined that only towns or cities that are "substantially dependent on ... fishing resources ..." are considered in the analysis, a large portion of the regional total fishing capital, and therefore, fishery commerce, of the New England Natural Resource Region could be ruined. In fact, we contend that the only communities that could possibly fit such a narrow interpretation of the Magnuson-Stevens Act's definition of 'fishing dependency' would be relatively isolated lobstering villages such as Jonesport, Cutler, or Beals Island in Downeast Maine.

While we use occupational census data to identify dependency on fishing in the context of the surrounding village, town or city, and offer further analysis based on the degree of gentrification, individual community profiles reveal critical details (cultural capital variables) that temper the number-driven rankings of dependency. For example:

- Ethnicity: ethnic and language barriers make it difficult to transfer to alternate occupational roles. Examples include Portuguese and Sicilian fishermen (New Bedford, Gloucester) faced with language and educational barriers, and less obviously, Downeast Mainers faced with cultural and dialectical differences. For example, Mainers face job discrimination from a telemarketing firm that will not hire locals "because of their accent" (key respondent, Jonesport, Maine).
- Adaptive specialization, meaning people successful at fishing are not well suited for other occupational roles, and may be limited by these characteristics to fishing. Adaptive specialization includes a strong need for independence, inability to tolerate fixed temporal (9 to 5) schedules, deferred gratification orientation, and tolerance of temporal periodicity in familial and other social relationships.
- High job satisfaction in fishing, and a correspondingly strong resistance to switching jobs due to the characteristics noted above.
- A strong sense of place, meaning fishermen and their families identify with a location on land and water that serves as a nexus for their sense of community. Connection to this specific place also helps build their self-reliance, meaning their ability to utilize local, on-hand (spatially bound) resources for daily problem solving, survival, extraction, and exchange. Further, sense of place both limits and grounds fisher folk's experiences to their location, while giving them familiarity and constancy—things leads to a high quality of life including social, emotional, and cultural stability. This accounts for the high mental, social and physical health of fisher folk under normal conditions compared to the wider populace (Caritas Christi 1996). Conditions which can abrogate this sense of place include forced seasonal migration when local stocks cannot provide income or fishing them is restricted by regulations, or complete collapse of local

resource from environmental disaster or overexploitation.

### **What this Model of Dependency Does Not Yet Include**

Alluded to above, dependency measures used here do not incorporate comparative economic data. While this project complements one refining an economic model, the work is being done simultaneously, so we are not able to compare the results of the different approaches. Held in abeyance, then, is a fourth index of dependency that should be compared to the three indices described here, that is, economic value of landings and/or product sales within a community.

Dependency of a community on particular resources is necessarily affected by the value of those resources. It is conceivable that the ratio comparing numbers of individuals dependent on fishing relative to those in other occupations could be small even though the value of the landings are high. Yet incomes and expenditures associated with the value of the landings may provide tax-generated revenue and other benefits to the community that make it more dependent on fisheries-related activity than is predicted by the dependency model suggested here. This deficiency is, we believe, partially countered by the richness of the depiction of total capital flow (social, cultural and economic variables) and the community profiles in this report. Nevertheless, as the model is applied elsewhere, the importance of the fishing industry's revenue generation should not be ignored.

### *3.6. Establishing Dependence by Sub-Region*

Using the individual human characteristics and community dynamic of the NRC model, we propose a regional approach. In this approach, the New England NRR is divided into sub-NRRs consisting of networks of NRCs that are held together by flows of total capital (Dyer and Poggie 2000). Although each is not totally unique, it is clearly distinct in its combination of characteristics from its adjacent sub-Regions.

Sub-regions consist of one or more coastal counties, and hence represent useful clusters for socioeconomic and demographic analysis of the changing human dynamics of coastal fisheries. The dynamic includes the human, social, cultural, and biophysical components that make up the system. This system can then be modified or transformed in ways that can either negatively or positively influence the sustainability of fishery dependent communities (the NRCs within the system). A negative impact would be one where the fishery dependent sector (fishing boats, families, fish processors, transporters, and suppliers) and the total capital it comprises would be lost from the system, or transformed in a way that leads to its loss at some proximate future point.

Embedded within any of the eleven sub-NRRs are both dispersed clusters of fishing vessels-fishing households, related infrastructure, and communities sharing both fishing place and culture. Whether fishermen and their families and support networks live and work from "clusters" or from more distinctively identifiable communities, defining dependence within regions is key in the mitigation of harmful regulatory impacts.<sup>108</sup> Even though each of our indices is distinct and emphasizes particular aspects of dependency, we suggest that they are sufficiently similar in that they should co-vary and hence provide a measure of convergent validity of our measures of the underlying construct of fisheries dependence.

The eleven sub-NRRs of New England are, from south to north, (1) the Connecticut Seacoast, (2) Rhode Island, (3) New Bedford and the South Shore, (4) the Cape and Islands, (5) the Boston Area, (6) Gloucester/the North Shore, (7) New Hampshire Seacoast, (8) Southern Maine, (9) Lower Mid-Coast Maine, (10) Upper Mid-Coast Maine, and (11) Downeast Maine.

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<sup>108</sup> Dyer and McGoodwin (1999)

### Dependency Indices

We propose to systematically measure fishery dependence in the eleven sub-NRRs using three indices. These are: (1) the percentage of labor force in fishing, (2) the percentage of related occupations within the Bureau of Labor Statistics category of fisheries /forestry/ farming, and (3) a summary measure of a series of dependency ratios that explore the number of fishermen per hundred to various alternative occupational roles that fishermen could enter with their particular skill profiles. Of the three, the most heuristically useful, and the one that provides the best tool for comparison across sub-NRRs, is the occupational alternatives index, discussed in detail below.

Measures 1 and 2, examine other aspects of the relationship of fishing to the region. Measure 1 is the simple percentage of fishermen to other occupations in the sub-NRR region.

$$\frac{\sum \text{fishermen}}{\text{all occupations}} * 100 \quad \text{Measure 1}$$

This measure reflects the assumption that the higher the overall percentage of fishermen making up the labor force, the more dependent the particular sub-NRR is on fishing. Our second measure, the proportion of fishermen in relation to other occupations in the Bureau of Labor Statistics defined category of fishing/farming/forestry also assumes the higher the percentage of fishermen in this category, the more dependent a sub-NRR is on fishing.

$$\frac{\sum \text{fishermen}}{\text{BLS\_category}(I)} * 100 \quad \text{Measure 2}$$

This measure is useful since most analysis of economic regions do not look specifically at fishermen but rather look at their broader occupational group of fishing/ farming/ forestry. The use of this measure provides us with a conservative estimated that can be compared across other studies related to the sub-NRR regions using economic or BLS based analysis of economic activity. Caution needs to be employed, however, as the measure represents a mixed category with fishermen as only a portion.

Our third index is, the Occupational Alternative Ratio Summary (OARs). This measure is more complex than the more straightforward proportion and ratios described above. OARs is an attempt to summarize a standard array of independent occupational alternative ratios within regions in a manner that provides a single measure of the impact of fishing upon the region in relation to other occupations available to people engaged in commercial fishing. The OARs measure emphasizes both the importance of fishing as an occupation to individual participants in the local labor force and the dependency of the local economy on the fishing industry.

The OARs measure is constructed in a series of steps. First, a series of occupational alternative dependency ratios (OAR) are calculated for a predetermined set of occupations. These OAR measures represent a standard set of alternative occupations that are compatible with the basis skills and training that are part of the fishing occupation. It is assumed that a fisherman could take up any one of these occupations but chooses not to, due to satisfaction with their current position as a fisherman. The alternative occupations identified and employed in this analysis consist of 13 occupations ranging from

mechanical trades to unskilled labor and active unemployment.<sup>109</sup> While this occupation set is not argued to be exhaustive, it is felt to represent a reasonable approximation of the potential occupation set open to fishermen in all 11 of the NRRs identified above. The OAR measures are calculated using the standard formula for a dependency ratio:

$$\frac{\sum \text{fishermen}}{\text{alternative\_occupation } (i)} * 100 \quad \text{Measure 3}$$

where (i) is the total number of individuals engaged in the ith alternative occupation.

Once the 13 OAR measures have been calculated they are then summed into a single measure of the total impact of fishing on an economic region.

$$\text{OARs} = \frac{\sum_{n=1}^1 \text{OAR}}{N} \quad \text{Measure 4}$$

Where N=13 in this specific instance.

The OARs measure summarizes the average potential impact that the size of the fishing industry has upon the supply of labor for alternative occupations within individual NRRs. The OARs measure provides two valuable insights into the importance of the fishing industry. First, it tells us the relative competitiveness of the fishing industry within a specific NRR. The higher the OARs score the more important fishing is as an economic occupation within the NRR compared to the alternative occupation set. A score of 100 or greater suggests that, on average, fishing serves as the primary employment for as many individuals as are employed in any one of the typical alternative occupations. A score below 100 suggests that, on average, fishing serves as the primary employment for fewer individuals than are working in any one of the typical alternative occupations. Second, the OARs score suggests the potential impact on the local labor force of a specific NRR if fishing should suddenly cease as viable occupation.

Looking at the Downeast Maine NRR for example, it is seen that this sub-region has an OARs score of 255, indicating the powerful impact that fishing has on the region as a primary occupation. If fishing should suddenly cease however the OARs score suggests that there would be two and one half fishermen for every individual working in a single alternative occupation on average. Thus, if any one occupational alternative were more attractive to former fishermen, then the labor supply for this occupation would immediately be saturated. This could result in the driving down of wages and depressing the overall labor market as alternative but less attractive occupations were sought by fishermen.

In contrast, the Connecticut Seacoast NRR with an OARs score of only 2.61 shows that fishing has little or no measurable impact on the overall economic strength of the sub-region. If fishing were to end as an occupation in this NRR then the dispossessed fishermen would represent an increase in the labor pool of only two and one half workers per hundred workers in any average alternative occupation. In this case, fishermen could easily be absorbed into the existing labor force economy without significant disruption to the NRR occupational structure.

<sup>109</sup> The thirteen occupational categories are: (1) security guard, (2) food service/janitor, (3) trees and farming, (4) mechanics, (5) skilled construction, (6) machine operators, (7) manufacturing, (8) hand workers (9) truck drivers (10) marine related, (11) laborers & helpers, (12) manufacturing/other, and (13) unemployed.

The OARs index is a straightforward and easily interpreted measure but it represents only a summary measure that fails to capture the richness of the cultural life that underlies fishing as an occupation and as an avocation. Specifically, the OARs does not address the question of occupational fungibility (i.e., interchangeability). While the movement of fishermen to other occupational roles is clearly possible, Measure 3 implicitly assumes that the skills involved in fishing are readily transferable. As we have discussed, this assumption is contrary to the characteristics of fishermen, the nature of their community dependencies, and consequently the very form and direction of capital flows within regions.

### **Sample Design**

The file used in this analysis is the 1990 Equal Employment Opportunity (EEO) Special File (US Bureau of the Census, 1994). The EEO data files and tabulations have represented the primary recognized source of national and subnational estimates of detailed employment for the United States during the decades of 1980 to 1990 and 1990 to 2000. The information is drawn directly from civilian labor force data gathered as part of the Decennial Census and is primarily intended to provide occupational and educational attainment data to support affirmative action planning for equal employment opportunity. The EEO file for the 1990 Census year consists of two sets of cross tabulations for the United States civilian labor force. The first set of tables, which is used for this analysis, provides data for 512 occupational categories by sex, race, and Hispanic origin. The second set of files that we employ in this analysis provides detailed information on educational attainment.

The EEO data files used to generate estimates is based on the 1990 census sample. The data are estimates of the actual figures that would have been obtained from a complete count. When all Census samples on occupation are accounted for across the Nation for the 1990 Census period, approximately one out of every six households in the United States were included in the 1990 EEO census sample file on occupation. It is the size of the EEO sample that makes it particularly attractive to the purposes of this analysis. Fishing as an occupation does not include a sizable portion of the total US population and as a result most samples are too small to allow us to look at the concentration of fishermen in any specific area.

While studies that focus on fishermen and fishing communities do exist, the number of individuals included in the study are generally small and cannot be generalized to the broader population. Because the EEO files provide detailed occupation down to a sub-county level we are able to exactly reconstruct the total population of fishermen within each of the 11 defined NRR's in the New England area. Using the EEO files we can also reconstruct total employment within each member of our set of alternative occupations that fishermen could engage in. At present, no other data set of this size and detail exists so it represents the best tool available for our research design.

### **Assessment of Indices**

In Table 2, we have rank ordered the sub-NRRs by our first index (% related occupations), with Downeast Maine being the most fishing dependent and Connecticut Seacoast the least. It is quite clear from the correlation coefficients between and among the indices (Table 3) that there is a high degree of concordance, indicating a strong convergent validity for the measures.

A second observation from inspecting the data in these three indices is that there are three fairly homogeneous clusters of rankings, with Downeast and Upper Mid-Coast Maine, and Cape Cod and the Islands (I) being the most fishery dependent sub-NRRs. New Bedford/South Shore, Rhode Island, Lower Mid-Coast Maine, Southern Maine, and Gloucester/North Shore (II) form an intermediate cluster of dependency. New Hampshire Seacoast, Boston Area and Connecticut Seacoast (III) cluster as the least dependent grouping. We shall discuss in detail the characteristics of each sub-NRR as reflected in the ethnographic and geographic setting of each region and as evident in our OAR ratio index.

Table 2. Comparative Fishing Dependence Indices for the Eleven Sub-NRRs of New England

<b>Sub-NRR</b>	<b>A. % Related Occupations</b>	<b>B. % Of Total Employed</b>	<b>C. Alternative Occupation Ratio Summary</b>
Downeast Maine	45	3.6	255.54
Upper Midcoast ME	36	2.0	171.05
Cape and Islands	27	0.79	104.43
Lower Midcoast ME	23	0.46	51.32
New Bedford/ South Shore	27	0.40	38.95
Southern Maine	23	0.39	36.94
Rhode Island	24	0.31	30.86
Gloucester/North Shore	20	0.21	24.91
New Hampshire Coast	8	0.09	9.46
Boston Area	7	0.05	6.39
Connecticut Coast	2	0.01	2.61

Table 3. Comparing the Three Dependency Ratios Using Pearsons r-Correlation

Dependency ratios	A. % Related Occupations	B. % Of Total Employed	C. Alternative Occupation Ratio Summary
A. % Related Occupations	r = 1.0	r = .833	r = .869
B. % Of Total Employed	r = .833	r = 1.0	r = .984
C. Alternative Occupation Ratio Summary	r = .869	r = .984	r = 1.0

### Downeast, Upper Mid-Coast Maine and Cape Cod and the Islands

The three sub-NRRs in the high dependency cluster share some characteristics that give them strong links to the fisheries resources of New England. Downeast and Upper-Midcoast Maine share a common topography and isolation from other parts of Maine and New England. Inland, the Downeast sub-NRR is characterized by rocky, shallow soil and pine forests, with most of the near-coast interior being wetlands mixed with forest. The convoluted coastline however provides a plethora of islands and harbors offering easy access to extraordinarily rich fishing grounds.

The peninsula of Cape Cod is also bordered with natural harbors and associated fishing dependent communities such as Sandwich, Chatham, and Provincetown. Nearby islands such as Nantucket and Martha's Vineyard have a strong historical connection to fishing and a geography which gives fishing residents ease of access to nearshore stocks of finfish and shellfish. However, the Cape and Islands are a magnitude below the NRRs of Maine (2.87 on Index C. compared to 5.50 for Upper Mid-Coast Maine and 8.92 for Downeast Maine) since they have experienced intense pressures from tourism and gentrification. For example, Provincetown, MA has long been a summer mecca for artists and those with an alternative lifestyle, while maintaining a separate but equally thriving, year-around fishing industry. As the summer season has started to extend into the spring and fall, the relative balance may be shifting. Due to the diminishing groundfish catches and regulatory response, the fishing fleet is currently down to a dozen vessels from over thirty a decade ago.

On the other end, Chatham, MA continues to support a thriving small boat fleet that engages a good third of the active (non-retired) working force of the township. Within Chatham, a strong sense of place and enjoyment of the fishing lifestyle keep people involved in the industry even in years when low catches force some into alternative occupations or seasonal out-migration.<sup>110</sup>

### 3.7. Summary

The use of dependency indicators in the eleven sub-NRRs of the New England management region provides a new way to conceptualize the significance of fishing to local economies and regions.<sup>111</sup> Using these indicators, we can clearly see a distinction

<sup>110</sup> Rene Gagne, personal communication.

<sup>111</sup> Because our findings are based on the most recent available census data – 1990, it is important that our measures be interpreted as ordinal, not interval, measures. The assumption underlying this is that the relative size of populations of fishermen and others have remained the same. We know that absolute numbers have changed in all regions since 1990. It is important that our work be replicated once the 2000 census data become available.

between the most and least dependent regions, and these differences are supported by regional and community ethnographies.

There is also a high level of agreement between the indices with r-values of .833 (A-B), .869 (A-C) and .984 (B-C). Using the most differentiated ratio (C), Downeast Maine, Upper Mid-Coast Maine and Cape and the Islands form a cluster as the most fishing dependent sub-NRRs, ranging from 255.54 –104.43, with a mean of 176.88. The sub-NRRs 4 through 8 range from 51.32 (Lower Mid-Coast Maine) to 24.91 (Gloucester/North Shore), with a mean of 35.59. Sub-NRRs 9 through 11 (New Hampshire Seacoast, Boston Area, and Connecticut Seacoast) have the lowest scores, from 9.46 to 2.61, with a mean of 6.1.

Within all these regions, however, fishing infrastructure and fishermen populations are intermixed with gentrified coastal economies and communities that overtly subsume and mask total capital contributions of fishing. Though the distribution of fishing infrastructure and activities make it difficult to identify and characterize particular communities as “fishery dependent,” examination of the networks of fisheries activities (total capital flows) reveals significant fishery dependency. In other words, consideration of its collective impact on regional economies and its historical contribution to localized secondary economies (i.e., the “multiplier effect”) suggests the valuable contribution of fishing in several regions.

Any index has as its underpinning assumptions of about how the world works. The three dependency indices we have derived assume that fishermen are able to move into alternative occupations. As we indicate above, however, there are compelling reasons why this is not an accurate assumption. We would like to add this observation to the debate on how one should assess dependency of a fishing population. The analysis of impacts of fisheries regulations must include consideration of traditional fishing populations that have survived the biological and regulatory downturns in the fishery. Just as biologists extol the use of the precautionary principal in fisheries management, we propose a corresponding precautionary principal for extant fishing populations. The baseline economic, social, and cultural needs of surviving fishing enclaves, populations, and communities within the eleven sub-NRRs of New England should be given equal importance with conservation principals. Along with fish stocks, fishing populations and their communities are highly vulnerable. If measured too simplistically, their overall contribution to regional economies may be missed in an adherence to strict measures of contributions to site-specific community economies.

The myth that *laissez-faire* economies are both desirable and sustainable is contradicted by the inexorable destruction traditional communities can suffer when such economies run unchecked over established patterns of community living and their unique forms of human, social and cultural capital.<sup>112</sup> Preserving human uniqueness can be compared to conservation development that strives to preserve landscape and existing ecosystem structures while allowing for the creation of built environments. While change is inherent to the human condition and can provide welcome improvements in a community’s or individual’s quality of life, if the full range of social, economic, political and ecological variables are ignored, the consequences may be detrimental to individuals, communities, and the ecosystem.

In applying measures of fishing dependency to the sub-NRRs of New England, we outline the uniqueness of each unit, but also caution that for purposes of application to dependency issues, only detailed sub-regional and community analysis can reveal the whole story. Since this study represents the establishment of a baseline index, we suggest that comparative regional analyses must be linked to in-depth studies of the full range of variables to predict impacts of fisheries policy and regulation.

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<sup>112</sup> Gerdson (1997)



#### 4. Vulnerability, Infrastructure and Gentrification among Fishing Dependent Communities

Like most of the nation's coastal areas, New England's coast is under increasing pressure from population growth and related development. It is estimated that half of the nation's total population now lives in coastal areas and that by 2010, that population will have grown almost 60 percent. Inevitably, conflicts arise between competing interests and demands for access to and the use of coastal resources. While an Internet-based "Town meeting on America's Coastal Future" sponsored by National Ocean Service (NOAA) found "strong support for conserving cultural heritage and diversity" as well as "traditional occupations," in truth, competition for space threatens fishing infrastructure and culture in many areas.<sup>113</sup>

When working harbors are transformed to address the demand of the middle-class for upscale housing, recreation, and entertainment rather than maintained in support of the productive activities associated with the commercial fishing industry, they may be said to be undergoing gentrification. The subsequent loss of localized community character and culture is termed delocalization and affects rural and coastal communities throughout the world. Delocalization decreases diversity and thus the adaptive flexibility needed to respond to localized changes in environment. Fishing populations undergoing delocalization lose access to total capital as values change, making it difficult for them to pursue a fishing lifestyle. This process is particularly rapid during times when the NRR is undergoing stress from reduced stocks as is currently the case.

The process of gentrification and coastal transformation is accelerating in New England as it is in most coastal areas of the US. For example, now that seals are found in Chatham, MA year round, possibly due to changes in local water temperature regimes and fish migration patterns, an operator of seal tours has started a new business. The tour operator wants a 'no wake zone' in an area where commercial boats pass through on their way to and from the harbor, because waves disrupt the water so the tourists can't see the seals on the surface.<sup>114</sup> As these processes accelerate, it becomes more difficult to identify 'fishing dependent communities', since the fishing industry's percentage contribution to total capital and local economies is diminished. At the same time, fishing families within these communities have necessarily adapted by increasing their networked capital flows to other communities in the NRR, intensifying the process of *regional dependency* in place of *community dependence*. Thus, the very nature of fishing in the community context has changed, as trucks, boats, and people shift and move from place to place in order to respond to opportunities to optimize capital gain in the face of reduced community infrastructure and market, and increased regional dependence and market flows.

By definition, gentry are "landed proprietors" who "typically wield large social, political and economic power."<sup>115</sup> Gentrification, then, of a fishing community implies a shift in power from the working men and women of the fishing industry to "those from away," those in white-collar jobs, or tourist (service) industries, and/or those who do not value the reality of a working waterfront. When intense external capital flow comes into a community, it necessarily increases the vulnerability of existing total capital networks. Traditions—existing ways of working, socializing, sharing, learning, and extracting economic capital—are lost or weakened as new, often mono-cultural, patterns come to dominate. Boat owners stop sharing fish at the dock, and banks stop giving loans to the fishing industry.<sup>116</sup> More frequently, land use patterns change, shoreline property prices inflate and the fishing industry is displaced, with less access to the waterfront. In those areas that attract only seasonal visitors, the attractive centers are apt to be boarded up in the off-season leaving

<sup>113</sup> [http://coast2025.nos.noaa.gov/pdfs/sum\\_results.pdf](http://coast2025.nos.noaa.gov/pdfs/sum_results.pdf)

<sup>114</sup> Renee Gagne, personal communication

<sup>115</sup> *Webster's Third New International Dictionary*. 1976. Springfield, MA: Merriam Company Publishers.

<sup>116</sup> Griffith and Dyer (1996).

the year around population without a community center. Such external influences can engulf and transform unique fishing cultures and communities following the natural resource way of life.

Regulatory layering is an additional external influence that has negative impacts on the maintenance of a fishing way of life. As the numbers of regulations mount to increasingly constrain fishing in response to perceived stock declines, fishermen attempt to adapt by switching gear and fishing locations in order to take advantage of available species.

However,

*“Many of the fishermen we interviewed had the sense that the regulations were confining them or “boxing them in” to one fishery at the expense of allowing them to take advantage of developments in other fisheries. This reduces the flexibility that is a hallmark particularly of smaller and medium-sized vessels, as well as contradicts current government and private efforts to promote underutilized or newly developed fisheries.”<sup>117</sup>*

Adaptation to changing conditions has made the fishing industry of New England resilient for over two centuries. When necessary, fishermen have changed gear, changed fishing areas, changed target species, trip patterns, and crew and in some cases even vessels to remain in the industry. In some areas in the region, a yearly round may include, for example, a combination of lobstering, shellfishing, shrimping and groundfishing to sustain the fishing household's livelihood. What is different now is that traditional flexibility is being harnessed and restrained by regulatory requisites associated with permits, limited access, and a recorded history of landings.<sup>118</sup>

Furthermore, as gentrification pressure has increased, and fishing infrastructure subsequently diminished, remaining infrastructure, supply outlets, and market connections have become increasingly de-localized. A fishing boat pulling into Boston Harbor is not likely to get repairs or buy fishing gear nearby. They can buy ice and fuel and they do offload product to regional and international seafood brokers. In fact, Boston has become specialized as the major international/ national transshipment site for seafood product in New England. This same vessel may get their fishing supplies and gear from New Bedford and Gloucester and their crew from the Cape or Portland. As this process of regional interdependence accelerates, dependency on remaining services and infrastructure is magnified and concentrated, creating an impetus for remaining dominant fishing sites to consolidate and specialize. As with the transshipment monopoly of Boston, the development of large, capital intensive fish auctions in Portland and Gloucester is an example of such a process of regional consolidation and specialization in the fishing industry.

The result is increased mobility of product as well as boats, gear, and fishermen, as they interact with the specialized centers, supply points, and seasonally changing fishing areas. Nevertheless, the maintenance of social and cultural capital resides at the local and community level. As fishermen are forced to practice a regional strategy, human networks and social ties can become strained for the occupational nomads. Where it is no longer possible to be a permanent part of a year round fishing crew that socializes and fishes together, social capital declines. Onshore, networks of families and friends often reflect the fishing crews and networks. These networks diminish along with the breakup of crews, resulting in a more atomized community with more social problems and decreased participation in community activities.

*“Fishers are embedded in households that represent a shoreside extension of fishing activity. Wives and families of fishers are often intimately involved in management of fishing operations, including tracking of finances, attending public hearings on new regulations, and providing political and public input on fishery issues. Management policies that do not*

<sup>117</sup> Griffith and Dyer (1996:29).

<sup>118</sup> The recorded history requirement is particularly onerous for the small vessels that rarely maintained official records of their catch. NMFS did not generally collect statistics from small vessels, so only those who retained sufficiently detailed receipts from buyers are able to prove their history.

*recognize this can negatively impact the social, psychological, and economic well being of the fisher household. Costs to fisher households can range from wives being forced to work multiple jobs outside the home to foreclosures on homes whose mortgages are tied to fishing vessel mortgages.*<sup>119</sup>

This is compounded by increasing competition under new stricter regulations, including declining collaboration at sea:

*“Crew reductions, of course, result in more work aboard vessels per crew member and the neglect of certain activities associated with safety. Increased competition and conflicts between vessels and between fishers from other ports, due to the perceptions that fishers are having to divide up an ever shrinking pie, have decreased the extent to which fishers help one another out of trouble on the open seas.”*<sup>120</sup>

Stress is placed on families, children, and marriages as fishermen are forced to work across regions and even outside of their region, to make ends meet. In Gloucester, it is not uncommon to find owners of family boats who will spend time dogfishing to the south in the winter or even join a summer Alaskan fishing venture as crew in the summer. In this context, surviving fishing infrastructure represents an increasingly valuable capital investment in a way of life.

#### *4.1. Historical and Total Capital Determinants of Infrastructure*

Complexity of infrastructure is one measure of a community's dependency on fishing. However, the scale of fishing activities and the size of the community in question must be considered when using infrastructure as a signal for dependency. For example, a lobster fishing community in Maine may lack many of the indicators of complexity (e.g. ice house, fish processor), fishermen may purchase their supplies from a nearby town, ship their product on regional truck carriers, and have their boats built in Nova Scotia. Yet, most of the households can still be directly or indirectly dependent on the harvest of lobsters as a primary means of maintaining total community capital.

At the opposite extreme, a historical fishing port can have many of the indicators of complexity. Yet, it may be losing families through migration, retraining and job switching. Out-migration may be spurred by declining economic vibrancy of the local fisheries, reflected in a decline in the quality and quantity of port facilities, and loss of dock space to the externalities of gentrification. However, if the port still possesses sufficient remnants of key infrastructure, it may be designated as highly fishing dependent, even though it is in decline and at risk of collapse from change externalities. Thus, while fishing infrastructure is one measure of dependency, the analysis must take into consideration local ethno-historical conditions, community scale and type of fishing pursued, and degree of external pressure from gentrification, along with total capital flows.

In this context, surviving fishing infrastructure represents an increasingly valuable capital investment in a way of life. As fishing infrastructure is lost, whichever community in a region that retains such critical infrastructure may become vital to nearby communities who lack or have lost such economic capital. Active protection and improvement of such critical infrastructure or core facilities is a proactive measure that could be taken by managers to help preserve the viability of the New England fisheries. Persistence of industry as well as fish stocks should be a strategic goal of the fisheries management agencies.

Vital regional facilities can become vulnerable when inadequate product is available from the production sector. For example, in Hampton/Seabrook, New Hampshire, a fishing cooperative is the major landing and marketing facility for the small local fleet. Recent

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<sup>119</sup> Griffith and Dyer (1996:31).

<sup>120</sup> Griffith and Dyer (1996:30).

restrictions on daily landings of groundfish such as cod are making it difficult to keep the facility going with so few fish to market. The port of Rockland in Maine has a central role in the distribution of herring for lobster bait. Rockland is the only regional port with a functioning dockside pump-out mechanism for offloading herring. Rockland pier represents a core facility for dozens of bait dealers from nearby towns and hamlets supplying many hundreds of lobster fishermen in scattered small ports and coves throughout the region. If the facilities as well as stocks are not protected, once the biophysical capital rebounds, communities dependent on facilities like those in Rockland and Hampton/Seabrook will not be able to take advantage of the improved stock conditions to generate fisheries capital for the region and nation.

At the same time, the declining numbers of fishermen make it more difficult to constrain the land use demands associated with gentrification. For example, in a recent development at the state pier in Galilee, Rhode Island, a proposal by a private firm to berth a 120-foot catamaran ferry there threatens space traditionally used by local fishermen to repair their boats or to load and unload gear. Although one ferry already operates across the harbor from the proposed business, the new ferry is being touted for its ability to save five minutes on the crossing to Block Island as well its luxury value:

*"...the boat would include carpeting, air conditioning, and televisions. "It's like going to an amusement park... Fast food, fast cars, fast everything – that's what people want."*<sup>121</sup>

From the fishermen's perspective: *"All of us use this dock," says Narragansett skipper Cliff Sambrook, who recently used the pier to paint the Laura Jean, a 40-year old fishing boat. "Where are we going to go?"... "It's a huge concern among commercial fishermen," said Jim O'Grady, a commercial fisherman. "The boat's too big."*<sup>122</sup>

#### 4.2. Measuring Infrastructure Differentiation

For this report, the baseline conditions of fishing infrastructure are measured using a set of variables identified through visits to diverse community sites in New England (Table 4). Eighteen infrastructure components were tracked for 35 communities in the New England NRR. These communities are representative of the entire region, and are dispersed through the eleven sub-NRRs. We used principal component analysis to derive a scale of infrastructure differentiation. The scale provides a weighted empirical measure of the construct. The total variance explained equals 29.7%.

**Table 4. Principal Components Analysis of Fishing Infrastructure Differentiation**

<i>Item</i>	<i>Item loading</i>
NMFS Extension Office	0.710
Icehouse in-town	0.679
Boat Insurance	0.633
International Fish Brokers	0.630
Diesel Fuel Dockside	0.621
Fishing Monument	0.585
Fish Auction	0.578
Local Trucking	0.574
Fish Processor	0.572
Fishermen supply house	0.539
More than two fishing associations	0.533
Boat welders	0.531
Vessel haul-out facility	0.507

<sup>121</sup> Davis (2000:C3).

<sup>122</sup> Davis (2000:C3).

Local net maker	0.459
Marine Supply House	0.412
Bait House	0.374
Fish retail store	0.359
Two or fewer fishing associations	0.336

Prime (top six) components of dependency include icehouse, NMFS extension office, dockside diesel fuel, international fish brokers, and boat insurance. The lower level (bottom six) components include bait house, more than 2 fishing associations, marine supply house, local net maker, fish retail store, and two or fewer associations.

Middle range items include local trucking, fish processor, fishing monument, boat welders, fishermen supply house, and vessel haul out facility. These eighteen total items load on a single factor of fishing infrastructure that allows us to rank order the sampled ports in the region by means of their particular factor scores on the scale. Those that score highest have the highest correlation to the factor, while those that score the lowest, the least. We assume there is some link between these scores and the level of one aspect of fishing dependency in the port.

However, it is critical to note that other economic activities besides fishing go on in a port, and can mask the importance of fishing infrastructure in any single community. This is an argument against using strict economic valuation (amount of total community economic capital measured against amount supplied by the fishing industry in any port) to identify a community as fishing or non-fishing dependent. As noted earlier, fishing dependency is best measured by examining communities in a regional context of total capital exchanges, not by measuring each community as economic isolates having no regional value outside their non-fishing economies.

### 4.3. Classification of Community Sample by Categories

The list of 36 communities (Table 5) shows seven ports that can be classified as having “primary” infrastructure (New Bedford, Portland, Gloucester, Chatham, Point Judith, Portsmouth) with the remainder being secondary and tertiary ports. Also, some ports contribute more to the regional flow of total fishery capital than others do. For example, New Bedford, that tied for top ranking of 1.5 and factor score of 1.999, is often mentioned by nearby communities in Massachusetts and Rhode Island as a source of fishing supplies and the site where vessel haul-out and repair is done. Portland serves a similar role in Maine and New Hampshire.

**Table 5. Fishing Infrastructure Differentiation Scale for the New England NRR.**

Port Ranking	New England Fishing Port	Factor Score
1.5	New Bedford, MA	1.999
1.5	Portland, ME	1.999
3	Gloucester, MA	1.678
4	Chatham, MA	1.614
5	Point Judith, RI	1.350
6	Portsmouth, NH	1.000
7	Stonington, ME	.789
8	Rockland, ME	.759
9	Vineyard Haven, MA	.598
10	Stonington, CT	.440
11	South Norwalk, CT.	.428
12	Port Clyde, ME	.337
13	Newport, RI	.248
14	Sandwich, MA	.175
15	Kennebunkport, ME	.061
16	Beals Island/ Jonesport, ME	.036

17	Plymouth, MA	-.015
18	Tiverton, RI	-.035
19	Niantic/Waterford, CT	-.096
20	Belfast, ME	-.145
21	York, ME	-.231
22	Cape Porpoise, ME	-.240
23	Searsport, ME	-.252
24	Provincetown, MA	-.319
25	Hingham, MA	-.329
26	Hyannis, MA	-.364
27	Jamestown, RI	-.406
28	Scituate, MA	-.481
29	Boston, MA	-.629
30	Bridgeport, CT	-.823
31	Eastport, ME	-1.051
32	Cutler, ME	-1.184
33	Sakonnet Point, RI	-1.446
34	Northport, ME	-1.628
35	Woods Hole, MA	-1.844
36	Bucksport, ME	-1.989

The infrastructure complexity results for New Bedford, Portland, Point Judith, and Gloucester are consistent with information generated from a 1996 study of the Multispecies (groundfish) fishery.<sup>123</sup> Table 6 shows that in 1996, infrastructure, as measured by number of marine equipment suppliers and fish dealers/processors, is consistent with the rankings generated using the infrastructure index presented herein. At the time, numbers of groundfishing permits ranked high for these ports, however there has been a significant decline in permits and infrastructure related items for groundfishing since then.

**Table 6. Comparative Fishery Dependency Table for the Five Primary Ports in the MGF in 1996**

	New Bedford	Gloucester	Chatham	Portland	Point Judith
Repair/supply facilities	35 (5)	12 (2)	15 (3)	21 (4)	11 (1)
Fish dealers/processors	77 (5)	43 (4)	29 (1)	42 (3)	32 (2)
Religious art/architecture dedicated to fishing	(1)	(1)	(0)	(0)	(1)
Secular art/architecture dedicated to fishing	(1)	(1)	(1)	(1)	(1)
Number of MGF permits	128 (4)	219 (5)	110 (3)	60 (1)	78 (2)
Number of MGF vessels	241 (4)	322 (5)	84 (3)	80 (2)	55 (1)
Fishing Dependency Index Score	21	17	11	11	7

<sup>123</sup> Griffith and Dyer 1996.

In 1996 groundfishing supported a core part of the industry, accounting for between 44 and 53% of their seafood dealing and processing capacity and significant employment. Amendment 7, the groundfish vessel buyback program, reductions in Days at Sea (DAS), and recent closures in the Gulf of Maine have significantly reduced the groundfish fleet as well as the supporting infrastructure for this part of the industry.

Significant groundfish-related infrastructure were also recorded in 1996 for Portsmouth, NH, and Newport, RI and they retain high rankings at 5 (factor score of 1.024) and 12 (factor score of .287) on our 1999-2000 fishing infrastructure scale. According to key respondents, however, development interests are presently threatening Newport's commercial fishing infrastructure. These interests would like to see the commercial fishing dock space converted into a tourist site, to complement nearby gentrified areas of shops, recreational dock space, and restaurants. The fishing infrastructure, then, is not considered an integral part of the dockside tourist ambiance in Newport. It is instead separated in an enclosed area between a yacht building and docking facility and the gentrified dockside and recreational boating waterfront of the town. Overall, the comparative fishing dependency in 1996 identified five primary ports that remain the top five based on the differentiation scale used in this study.

Other significant ports in 2000 include Rockland, ME (rank of 8, factor score of .759), and Stonington, ME (rank of 7, factor score of .789). Rockland is important as a docking and distribution center for the herring fleet, and individual bait dealers congregate in Rockland and purchase herring dockside. They supply hundreds of fishermen in some fifty nearby communities in the region with herring. The Rockland fishing infrastructure is thus mostly dedicated to serving herring vessels. The infrastructure includes a pump-out facility for herring, and a separation tank for herring scales, used in the manufacture of cosmetics and jewelry.

Stonington (rank of 7, factor score of .789) is the most developed Maine port community dedicated to lobster fishing. Several hundred lobster fishermen live on the Stonington peninsula and dock at the Stonington port and nearby lobster "camps." Lobster camps are located in small coves and harbor a dozen or more boat moorings and nearby shanties for equipment storage. Stonington port also services a few scallopers and groundfishing vessels, and two large fish processing plants lie dormant on the docks. These were previously used to process herring and other finfish, but are now used as storage facilities. Stonington sits on the tip of a peninsula, and is the principal embarkation for fishing families inhabiting residential clusters and villages up and down the peninsula.

Vineyard Haven is a unique port on the island of Martha's Vineyard, MA, and is best known as a summer tourist mecca. Despite its historical importance as a refuge for the upper class, it has a surprising fishing infrastructure differentiation rank of 9 and a factor score of .598. This port has basically just one of each infrastructure item, but is home to a small but thriving commercial and artisanal fishery of part-time clammers, hook and line fishermen, lobster fishermen, and draggers. These fishermen fill the local demand for fresh seafood products, for local residents year round and for the large number of summer residents. The isolation of the site and its value as a recreational destination for upper class tourists and celebrities contributes to the reliable local demand for seafood products. Thus, being one of the most gentrified of ports does not threaten the small but active commercial fishery. The fleet benefits from high local product demand and the ability of the upscale consumer clientele to pay above average prices. Moreover, the fishing infrastructure, in contrast to Newport's, is integrated into the local ambiance of the town enhancing the "saltiness" of this island community and continuing to attract appreciative wealthy visitors.

Stonington, CT, with the largest fleet of draggers in Connecticut, ranks 10 on the scale (factor score of .440). Stonington has the only integrated commercial facility in the state where all fishing vessels can dock, and which is protected from incursions by developers through a set-aside agreement with the township. South Norwalk, CN also scores high with a ranking of 10 and factor score of .468. South Norwalk is unique in that it is the operations

center for the Talmadge Oyster Co., the largest shellfish operation in the region. Talmadge has dock space for vessels unloading product, and in nearby Bridgeport also has a dockside presence and a shucking operation for oysters. The difference between Stonington, with its set-aside dock, and South Norwalk is that commercial fishing vessels in South Norwalk are not located in one dock area, but are dispersed up and down the river.

This is the case with practically all other commercial fishing enclaves in Connecticut. For example, Groton, with 31 commercial fishermen, and New London, with 24, represent a considerable commercial fishing presence, but the vessels are found in dispersed clusters up and down the river, with no central docking facility for commercial fishing and no plans to construct one. New London does have an older docking facility, dominated by lobster vessels, but this is in considerable decay and only serves about a half dozen vessels.

This dispersed pattern of vessels by port makes it difficult for local economic leaders to recognize and identify with the fishing industry. Such a lack of recognition can be a threat to the survival of existing infrastructure and fishing operations. For example, Bridgeport has no significant fishing infrastructure (rank of 30, with a factor score of  $-.823$ ), yet there is a cluster of 18 lobster boats that use rented recreational dock space. A major dockside development is planned, but there has been no consultation with or the fishermen or integration of the commercial lobster fishing cluster into the plan. As plans now stand, the 18 vessels in Bridgeport will be displaced from their present docking spaces without being provided with alternative spaces.

#### 4.4. *Gentrification and Loss of Infrastructure.*

Loss of existing port fishing infrastructure stands out as one of the potentially most harmful threats to the health of fishing dependent communities and regions in New England. Many ports now have just the bare minimum of supporting infrastructure, particularly with the losses associated with the regional decline in the groundfishing fleet. The diminishing numbers of fishermen, vessels, processors and supporting services also affects the ability of communities to retain social and cultural capital. Because of the decline in social and economic capital associated with the fishing industry, gentrification is much more difficult to resist.

As demand and prices for shoreside property rise, real estate taxes also mount and owners with modest incomes or life styles are forced to sell their property. Bought out and disenfranchised from their historic spaces and places, their networks of social and cultural capital can be lost. Gentrification can lead to undesirable social and human costs and an overall loss of communal identity. Once such transformations take place, it is difficult or impossible to reverse the process. As fishing infrastructure is lost, space it occupied can be permanently transformed for alternative uses.

Nevertheless, gentrification, like other processes of cultural transformation, is influenced by historical trends. Some ports and regions have adapted well to a history of gentrification, and are able to accommodate varied uses by tourists and seasonal residents. Generally, such communities are accessible by major highways and roads, have adequate support services for development, and have dockside and seaside space for expansion and/or transformation.

Not all communities with a history of gentrification, however, continue to support their fishing industry. Provincetown, MA, at the tip of Cape Cod, is in a very scenic area with wide expanses of natural beaches and dunes. Formerly a thriving fishing village, it has preserved its architectural heritage in its evolution into a summer art colony with a tourist shop and restaurant center that attracts thousands of weekend and summer visitors.<sup>124</sup> As the

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<sup>124</sup> Griffith and Dyer (1996). On August 9, 2000, *The Boston Globe* reported that Rhode Island's Department of Environmental Management was denied permission to use the State Fish Pier because of the potential negative impacts on Galilee's fish industry.



tourist season has extended, the tourist industry has encroached over more of the town. At the same time, the fishing presence has diminished as regulations, an unsympathetic town council, increased operating costs, and declining fish stocks combined with an aging fishing fleet make the occupation more difficult to sustain.

In Downeast Maine, the isolation of the region and lack of beaches and support services makes the small, coastal fishing communities less likely to experience gentrification. Places such as Cutler and Jonesport/ Beals Island, Maine, are on isolated, rocky peninsulas, serviced by long, winding narrow roads that end in sheltered coves and dock areas crowded with lobster fishing boats and an occasional dragger or scalloper vessel. Far from the flow of tourist capital and with little space to offer for alternative developments such as restaurants and hotels, their potential for gentrification is limited. As long as their local biophysical capital holds up, they are unlikely to experience major pressures for change. Nevertheless, interviews with individuals indicated that “those from away” are beginning to make incursions even into some of the isolated communities.

The Stonington peninsula is experiencing gentrification, as are other coastal areas of northern Maine with isolated summer homes being bought up and small artists colonies developing. Lack of highway access keeps the pace of change in many of these areas down. However, recent proposals to build a bypass connecting Wiscasset, Maine to the interstate have residents concerned about losing the quiet character (loss of social and cultural capital) of their communities to tourist traffic.

Introduction of external values goes along with an increasing number of residents ‘from away.’ In Cutler, a newcomer ‘from away’ built a home right near the town dock that blocks the view of a long time resident and interferes with access to a storage facility for local fishermen. This structure was erected despite the pleas of the nearby resident, who has lived in Cutler all his life. According to him, “*a local wouldn’t have built it if we asked him not to— and that is a big difference between people from away and people from here— they don’t listen to each other.*”

Another explanation is that there are few social ties—and consequently little invested social capital—between the newcomers and the long-term residents who have a stake in the traditional fishing “way of life” that has historically held the community together. New coastal residents may be less likely to integrate with the traditional community social networks, resulting in a decline in local social capital and loss of community character—the ‘small town’ effect. This is especially true if the community is used as only a seasonal, retirement residence or if the new residents are part of a suburban influx with jobs outside the community boundaries.

The values newcomers bring are DSP-dominant and emphasize competition and individual success over community solidarity and social cohesiveness. The concomitant loss of local institutions and knowledge could have serious consequences for fisheries management. Co-management and community-based fisheries management show promise for building sustainable fisheries.<sup>125</sup> However, fragmentation of fishing communities (loss of social capital) could hamper such efforts.

The model used here reveals a pattern of change that is consistent with the present gentrification pattern. In general, the farther north you go, the less gentrification you find. The gentrification scale consists of sixteen principal components that explain 36.7% of the sample variance (Table 7). Visitors’ bureaus (.775), marinas (.775), and upscale condominiums (.727) have the highest loading values for gentrification, while whale watching tours (.311), lobster retailers (.330), and maritime museums (.345) rank the lowest. Using these principal components, we have generated rankings of gentrification (Table 8).

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<sup>125</sup> Pinkerton, Evelyn (1989)

**Table 7. Principal Components Analysis of Gentrification Indicators**

1. Visitors bureau	0.775
2. Marinas	0.775
3. Upscale condominium	0.737
4. Recreational bait shop	0.732
5. Fish retailer	0.722
6. Recreational tackle	0.720
7. Fishing excursion vessels	0.708
8. Trendy retail shops	0.669
9. Recreational boat tours	0.576
10. Seaside restaurants	0.571
11. Whale watching tours	0.530
12. Recreational boat dealers	0.450
13. Hotels/Inns dockside	0.372
14. Maritime museum(s)	0.345
15. Lobster retailers	0.330
16. Whale watching tours	0.311

**Table 8. Gentrification Rankings of Ports in the New England NRR.**

<i>Port Ranking</i>	<i>New England Fishing Port</i>	<i>Factor Score</i>
2	Kennebunkport, ME	.959
2	Plymouth, MA	.959
2	Portsmouth, NH	.959
5	Newport, RI	.852
5	Vineyard Haven, MA	.852
5	Rockland, ME	.852
7	Point Judith, RI	.842
8	Portland, ME	.808
9	South Norwalk, CT	.708
10	New Bedford, MA	.702
11	Jamestown, RI	.701
12	Scituate, MA	.663
13	Provincetown, MA	.660
14	Chatham, MA	.621
15	Niantic / Waterford, CT	.584
16	Hyannis, MA	.542
17	York, ME	.491
18	Hingham, MA	.452
19	Belfast, ME	.362
20	Stonington, CT	.288
21	Gloucester, MA	.269
22	Bridgeport, CT	.157
23	Eastport, ME	.070
24	Sandwich, MA	-.024
25	Bucksport, ME	-.041
26	Boston, MA	-.200
27	Tiverton, RI	-.211
28	Stonington, ME	-.808
29	Woods Hole, MA	-.887
30	Sakonnet Point, RI	-.939
31	Port Clyde, ME	-1.315
32	Searsport, ME	-1.545
33	Cape Porpoise, ME	-1.612
34	Beals Island / Jonesport, ME	-2.2090
35	Cutler, ME	-2.131
36	Northport, ME	-2.554

The most gentrified ports are Kennebunkport, ME, (factor score .959), Plymouth (factor score .959), and Portsmouth, NH (factor score .959). All three of these ports have

developed tourist attractions based on their history. Plymouth and Portsmouth especially herald their historical backgrounds with designated cultural sites and museums, as well as provision of hotels, restaurants, and other facilities to appeal to a wide general population. Kennebunkport, the smallest of the three, is gentrified, but rather than for tourists, it appeals to upper class residents and local owners of historic homes. Though Kennebunkport residents enjoy their exclusivity (even banning food chain restaurants) they recognize and celebrate the town's historic fishing and farming roots. A bronze statue that rivals the famous fishermen's statue of Gloucester is a larger than life size statue portrays the revered 'ancestors' of the local community – a man and woman reaping the harvest of the sea (a cod fish) and the soil (a basket of food crops).

It is important to note that even though these three communities are the most gentrified, they are also able to support healthy local fishing populations and infrastructure, and do so with enthusiasm. Portsmouth (scale rank of 6th for fishing infrastructure—7<sup>th</sup> overall) has a state built commercial fishing dock that provides outstanding facility support for the modest but well-sustained local fleet. The commercial facility is protected from development because of its state-sponsored status, and all requisite fishing infrastructure is concentrated around this dock area.

Plymouth ranks fifth overall in fishing infrastructure differentiation for Massachusetts ports and has a rank score of 17<sup>th</sup> (18<sup>th</sup> overall out of 36 ports) for fishing infrastructure. The commercial dock at Plymouth is also state funded and the local fishing culture is incorporated into the cultural attractions of the port. Dockside restaurants, for example, are positioned to give patrons a view of the commercial fishing activities, and tourists stroll the docks and take photos of the fishing fleet unloading their catch.

Kennebunkport (scale rank of 15<sup>th</sup>, 16<sup>th</sup> overall) with only a dozen commercial lobster boats, supports their fishing activities with an exclusive commercial dock that includes a storage facility for bait as well as dockside ice and fueling. Running a Pearson Correlation between fishing infrastructure differentiation and gentrification, we get a value of 0.467, which is significant for the  $N = 36$ , with a Barlett chi-square value of 8.224 and  $DF = 1$ . This suggests there is a significant and positive relationship between gentrification and presence of fishing infrastructure when gentrification is historically founded (i.e. it is not a recent process, but one that has roots in the historical development of extant fishing communities).

Community sites with the greatest conflict and potential threat to infrastructure from gentrification are those with waterfronts that are 'industrial' in appearance. Places such as New Bedford, Gloucester, and Portland have extensive dockside areas devoted to fishing and fish marketing infrastructure. Built for utility rather than beauty, such places seem antithetical to gentrification. Where the fishing industry is less financially viable than in the past, towns are interested in diversifying and, in particular, attracting tourist dollars. A public official in Gloucester, MA., expressed a desire to see the dockside area transformed for tourism, but as a state "designated port area (DPA)" only true maritime use is currently allowed. Other ports where attempts are being made to reduce industrial scenery include Westport and Newport.

In Newport, though commercial fishing activities have moved away from the tourist center, they continue to be pressured to move farther away. Commercial fishing participants compete for space with a highly active tourist trade and recreational boating sector. Respondents claim competing tourist businesses complain about the sight of fishing gear on the docks and the smell of the fishing activities—"they want them 'out of sight, out of scent."

Not surprisingly, the least gentrified fishing ports are in Maine (Regions 9 through 11, Table 8). Port Clyde (rank 31), Searsport (rank 32), Cape Porpoise (rank 33), Beals Island/Jonesport (rank 34), Cutler (rank 35) and Northport (rank 36) share common characteristics of isolation, small population size (under 2,000), a reliance on lobster fishing, and a stable resident population. It is not uncommon to find folks who have lived in these communities their

entire lives, and, as in Beals Island, rarely venture far from their home.

Although fishing culture dominates in these communities, size and simplicity (the predominance of lobster as the target fishery) result in little fishing infrastructure differentiation for Northport (factor score  $-1.628$ , rank 34), Cutler (factor score  $-1.184$ , rank 32), Searsport (factor score  $-.253$ , rank 23), and Cape Porpoise (factor score  $-.240$ , rank 22). The fishing community with the highest fishing infrastructure differentiation rank (factor score  $.789$ , rank of 7, 8<sup>th</sup> overall) compared to its gentrification differentiation rank (factor score of  $-808$ , rank of 28, 29<sup>th</sup> overall) is Stonington, Maine. Stonington is one of the peninsular fishing ports, and has the most differentiated fishing infrastructure for its size along with the low-level gentrification. Key respondents in Stonington emphasized their self-reliance and a strong sense of connection to their space and place, particularly the nearby coastal areas and offshore islands.

## 5. Preface to the Sub-region and Port Profiles

As explained in Chapter 1, the introduction to this report, the sub-regions designated herein are partially an artifact of the way statistics are collected by the government (country-based). In addition, the researchers have tried to make this report dovetail with economics modeling research led by Di Jin of Woods Hole Oceanographic Institution. Furthermore, the analysis of the social and economic networks of the fishing communities demonstrate that these often extend beyond the named “fishing communities” that are readily identified by residents and observers of coastal New England.

The sub-regions thus described are not necessarily recognized by their own residents as appropriate or real designations. However, the boundaries of the more commonly named regions, such as Midcoast Maine and Downeast Maine, are also permeable and used vaguely by residents, the tourist industry, Chambers of Commerce, various web sites, etc. Sometimes they are used interchangeably to refer to a small-town life-style with a greater degree of independence or isolation imputed to Downeast Maine. For this research, an effort has been made to identify subregions with similar fishing-related attributes while maintaining a structure that is also amenable to the use of the U.S. Census and other available systematic data.

In each section, we describe a sub-region in general terms, focusing particularly on the relative dependency on fishing as indicated by the dependency indices described in Chapter 3 of this report. A brief sketch of each of the counties in the subregion follows, usually including Census-based data and a list of the towns in the county with those known to have fishing activity noted. Finally, one or two prominent fishing communities in the counties are profiled in some detail, including a section based on interviews with key respondents.

Some redundancy is built into the report to allow readers to read selectively rather than cover-to-cover. In some cases, the redundancy is evident even within a single community profile since some readers may want to read comparatively—selecting only one or two categories, but reading about these for each community.

Sub-region Profile  
 Counties: New London

## 5.1. Connecticut

### *Background*

When Connecticut was still a part of Massachusetts, fishing was a significant enterprise. Later, whaling became a key element of the economy. Over time, however, the Connecticut seacoast shifted away from commercial fishing. In fact, summer homes and recreational boating marinas now dominate coastal property. Even the presence of commercial fishing is masked by gentrification; nevertheless, it persists in clusters up and down the coast. However, the Connecticut coast sub-region is the least fisheries dependent of all the sub-regions in the New England NRR (see page 54). Despite its relative ranking, fishing in this region does provide important seafood resources to Connecticut's coastal economy.

The town of Stonington has the most obvious commercial fishery presence, boasting a small fleet of draggers and lobster boats in addition to a processing facility at the town dock. However, lobster boats are also found in the communities of Norwalk, Stamford, and Greenwich near the New York border, as well as farther east in Bridgeport, New Haven and Niantic. In New London a fish packing facility works with three large draggers that primarily target whiting (silver hake). The whiting is landed here, packaged, and shipped to Fulton's Market in New York. During 1999, there were approximately 397 fishermen in Connecticut, the majority (288) of whom held lobster licenses. However, since then there has been a loss of 57 lobster fishermen (based on license renewals), primarily from western Connecticut which was hit hardest by the lobster mortality event.

The transformation of the Connecticut seacoast from fishing to gentrified coastal living is partly related to the lack of replication of the human capital of fishing in this sub-NRR. Those fishermen who still work look on their job as a survival of times gone by, and do not see others coming in to replace them. The youngest fisherman in Stonington, for example, is 32 years old. Three factors that key respondents in Connecticut reported as responsible for the aging of the fleet include:

- Fishing is hard manual work under often difficult and dangerous working conditions, and most young people are "turned off" by this;
- The fishing industry is repeatedly portrayed in the local press as 'dead or dying', partially due to the reports on declines in stocks, and partly due to the irregularity in work imposed by the complex regulations and the difficulties in coping with these, and
- Increasing costs for some sectors make crew positions temporary at best and non-existent at worst. Fishermen sometimes work with a reduced or no crew to save on labor and insurance costs, despite the added risk this entails.

Most local fishermen started fishing as children with a family member. Having been fishing since high school, these long-timers will stay through the ups and downs of the industry. As one fisherman puts it: *"you always got to fight—you get what you put into this business. Hard workers are making money, but the slackers think the sky is falling, all 'doom and gloom'."*

Some of those who work as "lumpers" (those who help unload the catch and occasionally work for processors) do not look on the fishing industry in Connecticut as anything other than a source of employment, not as a way of life. A processor in Bridgeport expressed the sentiment that fishermen were treated "like peasants" by local government and received no special consideration from local officials. Working fishermen are generally satisfied with their fishing lifestyle, but feel oppressed by the numerous fishing regulations, what they see

as unfair state quotas for certain stocks such as fluke, the increasing risks associated with fishing, and the lack of new entrants into the local industry:

*"I lost my crew because I couldn't get the permits in time to keep them. With no future the crew looked for other jobs. I wouldn't encourage anyone to enter the fishery, it's too scary."*

Although Stonington represents the only major port with an established and spatially separate dock space, Bridgeport, New London-Groton, Stamford, and other smaller sites contribute to the overall regional presence of the industry. These smaller sites can best be described as fishing clusters of several to over twenty boats, linked by marketing ties to each other and to local and regional clientele.

#### Commercial fishing and fisheries-related employment

##### *Harvesting structure*

Overall, for 1999 the Connecticut sub-region has a total of 397 (241 for the 1990 census) fishermen, with the majority (43%) in New London County where Stonington's 75 fishermen are located. Most fishermen outside of New London are lobster fishermen, although the exact number of these is unavailable. New London also has two vessels that travel to Georges Bank to target whiting. There are indications that the numbers of fishermen are actually increasing. License data for 2000 has 497 individuals listed.<sup>1</sup>

A notable statistic is the number of women 'fishermen' in Connecticut, with 7.1% in Fairfield County and 17.0% in New London, for a sub-region average of 9.1%.

#### **Summary of fishermen by county, from 1990.**

<b>County</b>	<b>Total Number of Fishermen</b>	<b>Percent Female</b>
Fairfield	56	7.1
Middlesex	42	0.0
New London	104	17.0
New Haven	39	0.0
<b>Totals for sub-NRR</b>	<b>241</b>	<b>9.1</b>

Other major fishing communities by number of fishermen include Groton (31), Branford (25), Bridgeport (24), New London (24), Old Saybrook (23), and Waterford (Niantic Village) (18). The 15 dragnets of Stonington represent 52% of the total number of dragnets in the state, with Guilford (3), Old Saybrook (3), and East Lyme (3) making up most of the remainder.

The most recent significant change in the number of fishermen was among gillnetters, dropping 43% from 37 in 1998 to 21 in 1999. Most of these were in Old Saybrook (12 down to 6, a 50% drop), and Stonington (7 down to 3, a 57% drop). Other 1998-99 declines occurred in rod and reel (down 19% from 62 to 50) and lobstering (down 5% from 305 to 298). The overall one-year decline was 42, or 9.5% of the total. Of course, the most dramatic decline in the fishery may come with the massive lobster die-off in Western Long Island Sound in the fall of 1999. This is affecting about 37%, or 114, of the total number of lobster fishermen and families in Connecticut, and may portend other more severe declines if the die-off spreads farther east into the Stonington area and south towards Rhode Island.

The cause of the die-off is still under investigation, but preliminary indications are that it may have been caused by a combination of environmental stressors and a parasite. It is unclear whether the parasite is a primary or secondary cause of the mortality event. Other theories focus on runoff of pesticides used for the control of mosquitoes carrying the West

<sup>1</sup> N. Balcom, personal communication.

Nile virus. Leading up to 1999, the Long Island Sound lobster population was at an all-time high abundance, water temperatures were several degrees warmer than average, an extended drought was followed by a hurricane. The disastrous die-off is having significant impacts on the social, economic, and psychological/physical well being of the lobstering population in this part of the Sound, and could have marketing ramifications throughout the sub-Region and other regions dependent on the sale of lobsters.

Species landed by the Connecticut fleet include a variety of groundfish, monkfish, butterfish, tautog (blackfish), shrimp, whiting, white hake, dogfish, lobster, shellfish and conch. Fishermen use a multiple gear and license approach to maintain economic flexibility, yet some are having difficulty with the reductions in DAS, regulatory paperwork, and quotas. The vessels consist of a mix of lobster boats, groundfish vessels, and scallopers, with at least one small vessel specializing in conch using horseshoe crabs as bait. Gill netting and rod and reel are also practiced.

**Changes in Community Enclaves**

Declines in the overall numbers of fishermen in Connecticut may also be related to influences of gentrification. For example, the 24 lobster fishermen in Bridgeport are facing the loss of docking space if the city goes ahead with plans to ‘develop’ the riverfront. In recent city hearings on the subject, the mayor of the city was surprised to learn that there was a lobster fleet in Bridgeport. By putting up a boardwalk and condemning properties along the waterfront in the name of ‘public access,’ the city could effectively wipe out all available commercial dock space, with no legal mandate requiring them to replace it with alternative space elsewhere. Nevertheless, the fishermen and fish marketers hope to be able to incorporate a space for their operations into the overall development plan. This would make a public attraction out of the fishing operations, could include restaurants, a museum, and other components of a “fishing village” emphasizing history, culture, and economy of place and space for fishing. This style of “fishing village” imbedded in a larger context of tourism seems to have been successfully carried out in Plymouth, Massachusetts, for example.

With the gentrification of the coast, wealthy outsiders acquired houses once owned by fishermen as second homes. No fishermen live on the main street of Stonington, which consists of tourist-oriented gift shops and fashionable year round and summer residences. The commercial fleet survives in part because the town has reserved the dock area for commercial operations only. In contrast, in Bridgeport, Noank, and other lobster fishing ports, fishing boats must compete with recreational marinas and dockside tourist facilities. The property values of land and housing have increased as residents from New York City seek housing either for primary residences, weekend or summer homes. As the value of property have increased, the number of fishing families living near the water has declined, resulting in the loss of fishing neighborhoods as culturally defined communities. The Portuguese Club, still mainly frequented by fishermen and their families, seems out of place in the fashionable residential section of the Borough.

**Table XII. Breakdown of number of fishermen by gear type for each port, for 1998-99.**

Port	Fishpot		Gill net		Lob. Pot		Other		Rod Reel		Trawl		Total	
	98	99	98	99	98	99	98	99	98	99	98	99	98	99
<b>Branford</b>	.	.	1	2	20	22	.	1	.	.	.	.	21	25
<b>Bridgeport</b>	.	.	.	.	27	24	.	.	.	.	.	.	27	24
<b>Clinton</b>	.	1	3	2	7	7	.	.	1	1	.	.	12	11
<b>Cromwell</b>	.	1	.	.	.	.	.	.	.	.	.	.	.	1
<b>Darien</b>	.	.	.	.	7	6	.	.	.	.	.	.	.	6
<b>Derby</b>	.	.	.	.	1	1	.	.	.	.	.	.	1	1
<b>East Haddam</b>	.	.	.	.	.	.	.	.	.	.	.	.	.	1
<b>East Haven</b>	.	.	.	.	2	4	.	.	.	.	1	1	3	5



East Lyme	.	.	.	.	14	13	.	.	3	3	.	1	17	17
Fairfield	.	.	.	.	2	2	.	.	.	.	.	.	2	2
Greenwich	.	.	.	.	7	6	.	.	2	2	.	.	9	8
Groton	.	.	.	.	32	27	.	.	7	3	1	1	40	31
Guilford	.	.	.	.	8	8	.	.	1	1	1	3	10	12
Madison	.	.	2	1	4	4	.	.	.	.	.	.	6	5
Mystic	.	.	.	.	9	9	.	.	5	5	.	.	14	14
Milford	.	.	2	1	6	3	.	.	.	.	.	.	8	4
New Haven	1	.	.	.	13	11	.	.	1	1	.	.	15	12
New London	.	.	2	2	16	17	.	.	4	2	5	3	27	24
Norwalk	.	.	1	.	15	14	.	.	.	.	.	.	16	14
Norwich	.	.	.	.	.	.	.	.	1	1	.	.	1	1
Old Lyme	.	.	.	.	6	10	.	.	1	1	1	.	8	11
Old Saybrook	3	3	12	6	7	9	.	.	3	2	.	3	25	23
Stamford	.	.	1	1	11	9	.	.	.	.	.	.	12	10
Stonington	.	1	7	3	37	36	.	.	25	20	15	15	84	75
Stratford	.	.	1	.	2	2	.	.	1	1	.	.	4	3
Waterford	.	.	.	.	17	13	2	2	2	2	2	1	23	18
Westbrook	.	.	3	2	12	12	.	.	2	2	.	.	17	16
Westport	.	.	1	1	.	.	.	.	.	.	.	.	1	1
Noank	.	.	.	.	22	19	.	.	3	2	1	1		22
<b>Total</b>	<b>4</b>	<b>6</b>	<b>37</b>	<b>21</b>	<b>305</b>	<b>28</b>	<b>3</b>	<b>3</b>	<b>62</b>	<b>50</b>	<b>28</b>	<b>29</b>	<b>438**</b>	<b>397</b>

\*\* This does not include Montville, with only one (1) lobster pot fisherman for 1998, but nothing for 1999, and Chester, with one "Other" for 1998, but nothing from 1999. Fishermen from Niantic register themselves as Waterford residents, and thus there are no figures on numbers for Niantic village.

### *Fishing Dependency*

Most fishermen in Connecticut are embedded as fishing 'clusters' within their communities, and as such do not make up a significant economic component of local economies. The decline in the fishery is directly related to the loss of fishing community as a definite space and place dominated by a populations sharing traditions of fishing. Nevertheless, fishing persists as enclaves, meaning a population in a specific area sharing common occupations of resource use. The historic loss of the core fishing population has proceeded simultaneously with an intense gentrification process that has converted fishing neighborhoods and dock space into expensive tourist weekend and summer homes surrounded by gentrified shops, restaurants, and marinas.

Connecticut Seacoast Region  
New London County, Connecticut

### 5.1.1.1. Stonington

#### *Background*

The town of Stonington, which covers 42.7 square miles, was settled in 1649. What is considered the town today, however, is actually several communities. The 1990 Census population totals 16,919 residents, with 10% residing in the Borough. Other concentrated areas are the Pawcatuck and Mystic sections of the Town, which have 40% and 20%, respectively, of Stonington's population. The remaining 30 percent are scattered widely in the semi-rural areas of the township.

“Stonington is located in the southeastern corner of Connecticut bordering Rhode Island to the east, Long Island Sound to the south, Groton, Ledyard and North Stonington to the west and north. Stonington is the only Connecticut town facing the Atlantic Ocean. Businesses have come to Stonington because it is an outstanding place to work, has a well-educated and highly skilled labor force and offers an attractive quality of lifestyle for business owners, management and their families. Stonington boasts that increasingly rare and attractive combination: a mix of seaside and semi-rural working and living sites.”<sup>2</sup>

“Wequetequock was the site of the first settlement in Stonington, when William Chesbrough came to chose a site at the head of the cove for his trading post in 1649.”<sup>3</sup> The Borough of Stonington, the oldest borough in Connecticut, was incorporated in 1801. A beautiful, safe harbor attracted sealers such as Nathaniel Palmer, discoverer of Antarctica, and other notable mariners. Stonington remains the principal port of the state’s commercial fishing fleet.

“Pawcatuck, developed largely around the now vanished textile industry, has continued its proud heritage as the home of industrial leaders. These leaders include Davis Standard Corporation, the premier supplier of plastic extrusion systems, and Yardney Technical Products, producer of batteries involved in the Trident Submarine Program, as well as those involved in the exploration of outer space.”<sup>4</sup>

“In some ways, Mystic differs from both the Borough and Pawcatuck. Developed around the shipbuilding industry, Mystic currently boasts three distinct visiting areas. Historic Downtown Mystic is rich with diverse specialty shops, while Mystic Seaport, the Museum of America and the Sea, provides an inside look at New England's maritime heritage. Olde Mystic Village has over 60 shops set in a New England style village, and lies adjacent to the Mystic Aquarium and Institute for Exploration. Old Mystic is the original community at the head of the Mystic River and Foxwoods Resort Casino is located 15 minutes north of Mystic.”<sup>5</sup>

#### *Governance*

Selectmen/ Town Meeting/ Board of Finance

#### *Demography*<sup>6</sup>

##### Population

According to the 1990 Census, Stonington (borough) had a population of 1100, 492 male and 608 female.

<sup>2</sup> <http://www.town-usa.com/connecticut/newlondon/stonington.html>

<sup>3</sup> <http://www.munic.state.ct.us/STONINGTON/stonington.htm#GOVT>

<sup>4</sup> <http://www.munic.state.ct.us/STONINGTON/stonington.htm#GOVT>

<sup>5</sup> Ibid.

<sup>6</sup> <http://venus.census.gov/cdrom/lookup/982362785>

Education

Among persons over 25, 173 were high school graduates, 167 had some college, 52 had an Associate's degree and 363 had a Bachelor's or higher. One hundred eleven individuals had no high school diploma.

Housing

Of the 713 housing units in 1989, 571 were occupied and 142 were vacant. Of those occupied, 300 were owner occupied and 271 were rented. Median year the housing units were built was 1939 and the median value of owner-occupied housing was \$303,800.

Racial and Ethnic Composition

All except for 3 individuals were white in 1989. Ancestry was most often English, German, Irish, Italian and/or Portuguese.

*Economic Context*Income

Median household income in 1989 was \$38,654; per capita income was \$27,965.

Employment

As noted in the introduction, the census data generally available is not a particularly satisfactory indicator of the prominence of the fishing industry. Nevertheless, the tables below offer some relative comparisons by way of context.

INDUSTRY<sup>7</sup>

Universe: Employed persons 16 years and over	
<b>Agriculture, forestry, and fisheries (000-039)...</b>	<b>18</b>
Mining (040-059)...	0
Construction (060-099)...	40
Manufacturing, nondurable goods (100-229)...	56
Manufacturing, durable goods (230-399)...	116
Transportation (400-439)...	5
Communications and other public utilities (440-499)...	8
Wholesale trade (500-579)...	7
Retail trade (580-699)...	92
Finance, insurance, and real estate (700-720)...	37
Business and repair services (721-760)...	22
Personal services (761-799)...	26
Entertainment and recreation services (800-811)...	13
Professional and related services (812-899):	
Health services (812-840)...	35
Educational services (842-860)...	42
Other professional and related services (841, 861-899)...	66
Public administration (900-939)...	20

## OCCUPATION

Universe: Employed person's 16 years and over	
Managerial and professional specialty occupations (000-202):	
Executive, administrative, and managerial occupations (000-042).	94
Professional specialty occupations (043-202)...	156
Technical, sales, and administrative support occupations (203-402):	
Technicians and related support occupations (203-242)...	21
Sales occupations (243-302)...	100
Administrative support occupations, including clerical (303-402)...	64
Service occupations (403-472):	
Private household occupations (403-412)...	4
Protective service occupations (413-432)...	3

<sup>7</sup> <http://venus.census.gov/cdrom/lookup/982362785>

Service occupations, except protective and household (433-472).	35
<b>Farming, forestry, and fishing occupations (473-502)...</b>	<b>17</b>
Precision production, craft, and repair occupations (503-702)...	69
Operators, fabricators, and laborers (703-902):	
Machine operators, assemblers, and inspectors (703-802)...	27
Transportation and material moving occupations (803-863)...	5
Handlers, equipment cleaners, helpers, and laborers (864-902)...	8

### *Transportation and Access*

Stonington lies within two hours or less of major research and transportation centers in Boston, Providence, New Haven, Hartford and New York. I-95 is minutes away. Major airports are located nearby in Groton, Hartford/Springfield, Providence and Boston. Amtrak trains are located in Mystic, New London and Westerly.

### *Fisheries Profile*

#### Community

Stonington's commercial fishing infrastructure consists of a central wharf with two processing facilities, flanked on the seaward side by a double dock for finfish and lobster boats and the upriver side by a single commercial dock. At the end of the Stonington dock is a public access area and fishing memorial, which brings the public into contact with the commercial fishing sector.

An attitude prevails that commercial fishing represents a significant cultural and economic feature of the town, and the present fishing infrastructure will most certainly support the fishing industry at its present level. "If this stopped, knock on wood, I would see the Stonington Borough businesses shut down, especially in winter." In the summer, tourists and summer residents visit the docks to watch the fishing operations, and local seafood restaurants are provided with fresh fish products from the dock.

Nevertheless, recent reports indicate that new property owners in Stonington are less supportive of the fishing industry. "*The dock area and the surrounding borough are struggling a lot with some of the newcomers.*"<sup>8</sup> This is a theme common to fishing enclaves throughout New England. As gentrification creeps in and property values soar for shoreside property, the conflicts between users will surely multiply.

#### Commercial fishing and fisheries-related employment

Boat numbers have fluctuated dramatically in recent decades. For example, in 1950-51, local docks in Stonington registered around 36 boats, but by 1959 only 13 boats were reported by *Atlantic Fishermen* magazine. One year later, the fleet had dwindled to 9 boats. The decline in numbers was due to a slump in local market conditions. As early as 1950, *Atlantic Fisherman* reported that fewer fishermen were docking their boats in Stonington because they got a better price in New Bedford. The state made an attempt to keep fishermen in Stonington by suggesting construction of a fish meal plant in the town.

Regardless of the causes for the decline, business picked up in the late sixties to around 24 draggers and 18 lobster boats.<sup>9</sup> Between 1960 and into the 1970s the numbers dwindled again so that by 1979, there were only about ten fishing vessels working out of Stonington. However, the fleet recovered again, and by 1989 there were over forty vessels and locals were optimistic about the chances for growth.<sup>10</sup>

*"Stonington's commercial fleet may be small but we're doing well. We're building up. I'm proud*

<sup>8</sup> Key respondent interview, 2000.

<sup>9</sup> Campbell 1997

<sup>10</sup> Brown 1989

*of the fleet. With the fishing business kind of tough right now, Stonington's fleet continues to steadily grow. The town is behind us, we've got better facilities, and we're going to keep building.*<sup>11</sup>

#### *Harvesting structure*

Stonington is the main commercial finfish fishing port of Connecticut, with a 1999 total of 75 commercial licenses (19% of the total of 397), including 3 gillnetters, 36 lobster fishermen, 20 rod and reel, and 15 draggers. There are 150 directly employed in fishing and approximately 200 households in related industries, trucking, scales, welders, etc. About one third of fishermen own their own home, with most living outside the borough because of the high property value of local residences. At least two fishermen are well off enough to own summer places in Vermont and Maine.

The fishing fleet in Stonington is split between day boats and offshore draggers. Offshore (up to 14-day trips) vessels target scallops, squid, butterfish shrimp, monkfish, and whiting. The one vessel that specializes in shrimping is an eastern rig trawler that fishes out to 180 fathoms. Inshore, non-selective, day-trippers go after fluke, lobster, black fish, and conch.

Lobster boats are one to two-person operations and the larger scalloper and dragger boats have crews of up to five persons. In general, lobster boats have 2 crew, scallop boats 4 to 7 crew, day boats 2 crew, and shrimp boats 4 crew. Many of the lobstermen have other full time jobs, fishing afternoons and/or weekends, often taking 2<sup>nd</sup> or 3<sup>rd</sup> shift jobs. In the summer the long days leave more time to work the traps. Overall, the number of fishermen in Stonington is down 11% from 84 in 1998 to 75 in 1999.

A special niche fishery in Stonington is conch, which are fished in other ports in Rhode Island and Massachusetts, but always in small numbers. In Stonington, two "retired" fishermen pursue conch. For 1999, the reported ex-vessel value of conch from Connecticut was \$.60/lb. A good daily catch would be twelve 50-lb bags, giving a gross of \$360/day. Operating costs include fuel, maintenance, traps, transport, and bait. Pots are hand-made, and battery-powered winches are used to haul traps. Fishermen work every day that conditions permit. The catch location of each bag of conch is recorded for tracking purposes required for interstate commerce. Conch are sold in New Bedford, where they're boiled, removed and resold to many markets. The preferred bait is *Limulus sp.* (horseshoe crabs). These are split into quarters and inserted in the traps. They are sold 10-15 in a bag, purchased as by-catch from local fishermen.

Besides the resident vessels, outsiders ("transient vessel") may occasionally work out of Stonington. Currently one boat from Maryland is fishing dogfish. He uses gillnets and goes up and down the coast from Connecticut up through Massachusetts and Maine chasing dogfish.

#### *Processing and marketing sector*

Up until 1974 there were no fish buyers in Stonington so fishermen had to go to Newport to sell their product.

Local seafood processors buy from 15 draggers on a daily basis as well as 36 lobster boats and 5 scallopers. The seafood processors will occasionally buy/exchange product with each other. Products sold include various types of lobster bait such as whole small skate, skate wings, salted herring, and mackerel. Processors have diversified to compensate for lower local landings due to the diminishment of the stocks and regulatory measures. Among finfish, the primary moneymakers are fluke and blackfish (tautog). Both processors have their own icemakers. Fish are marketed in myriad of ways to local and international destinations, including Fulton's in New York City, Philadelphia, Boston, New Bedford, Korea, and Japan (monk livers, fluke, whole monkfish tails).

Another processor (Atlantic Gem Seafoods) went out of business during the course of this

<sup>11</sup> Key respondent interview, 1999.

study. When still in business, they bought from 12-14 boats and had five full-time staff.

A longtime lobster operation (Garbo) located near the town dock in Stonington recently relocated to Groton after new neighbors from outside Connecticut moved in next door and complained long and loudly about the hours and noise of the trucks used to transport the lobsters. The facility in Stonington was purchased by the Mohegan tribe, which has plans to set up a shellfish hatchery in the building and conduct extensive aquaculture operations on leased shellfish grounds off of Stonington and Groton.

Stonington products move through many vendors, including other fish markets, restaurants, international seafood brokers, wholesale to individual buyers, processors, and freezers, cutting houses, wholesale import-export companies, and SYSCO Corporation, North America's largest foodservice marketer and distributor. Fishery products are available year round, with the slowest season being the winter, when monkfish and whiting are the primary moneymakers.

The fishing fleet of Stonington must compete with other larger fleets and producers to sell their product. Key respondents noted that competing with large frozen fish producers is difficult for small fresh-fish producers.

#### *Support Services*

The commercial dock in Stonington is maintained under a lease from the town and is reserved for fishing-related activities. This preservation of space is critical, for throughout New England one of the features that is most threatened by development is fishing infrastructure. At the present level of fishing effort, the remaining infrastructure is the minimum necessary to sustain the present fishing population. Because of the threatened status of virtually all fishing infrastructure in New England, support and protection of fishing infrastructure should be considered a priority of fishery managers, including improvement and maintenance of remaining docks, bait houses, gear and vessel storage, ice houses, and related processing facilities.

The Southern New England Fishermen and Lobstermen Association's facility sits on the dock beside the local processor. The association helps fishermen survive by keeping costs of ice, fuel, gear and supplies down.

Trucking of produce sends fish along the entire coast. For example, some lobsters are trucked to Maine where they are sold in restaurants as "Maine lobsters." One trucking company specializes in monkfish, the tails of which are shipped to the West Coast and livers are sent overseas to Japan and Korea. The product is shipped via Boston, which has a large number of seafood brokers and access to airfreight through Logan International Airport. Other trucking companies run back and forth between New Bedford and other sites and call in to pick up fish products as orders are placed. For example, W.E. Pray Co. that has a daily run between Stonington and New Bedford will send different size trucks depending on what has been ordered.

#### *Employment (year-around and seasonal)*

An estimated 150 fishermen/fish processors work out of Stonington, and an additional 50 work in support roles. This makes an estimated 200 households directly dependent on the fisheries, and there are an estimated 300 additional households that are indirectly dependent in their roles in marine transportation, repair, and related business and supply activities.

#### *Species, Seasonality*

Fishery produce from Stonington includes lobsters, finfish and shellfish.

Landed species include:

Groundfish: Cod, red hake, flounders (including fluke), haddock

Small mesh: Whiting

Crustaceans: Lobsters

Other finfish: Butterfish, monkfish, dogfish, tautog ("Black Fish"), scup, and bluefish

Other shellfish: Scallops, conch

Lobsters are sold locally but also supply markets throughout the New England region and New York. For example, lobsters are shipped to Boston and via Logan International sent nationally and internationally.

Whiting at 30-40 cents a pound is at the low end of the scale in value compared to other species caught by Connecticut fishermen.

Dogfish, caught as bycatch when other fish are targeted, were a hated species because of their volume, low price, rough skins that damaged nets, and their propensity to quickly spoil. However, a niche fishery developed when it was discovered that they had a variety of uses and markets. Their skins are used in Asia for medicine, their fins for soup, cartilage for supplement pills, fillets go to Europe, and their guts and scrap to fertilizer. Today (2001) dogfish cannot be targeted due to strict regulations.

Fishing schedules are highly flexible depending on the seasons. For example, squid are most plentiful in the winter, the spring and summer are prime lobster seasons, and whiting, hake and butterfish are caught in abundance during the fall. One dragger describes his season round as follows: summer—fluke, scup, flounder; fall—fluke, other flounders, cod; winter—flounder; spring—yellowtail, other flounders, and haddock.

#### Recreational fishing and employment

Upriver from the commercial dock are moored numerous recreational vessels, and a marina with a haul-out facility for vessel repair.

#### Fishing related organizations and their roles in the community and fishery

##### *Commercial fishing associations*

Southern New England Fishermen and Lobstermen Association (SNEFLA): The volunteer board of the association is comprised of a president, vice-president, and a nine-person board of directors who are elected annually. There are approximately 125 members from the states of Connecticut, Rhode Island, and Massachusetts. The organization started in 1931 to help fishermen and lobstermen with such common problems as the hijacking of trucked shipments of fish to New York. Membership requires a \$100 initiation fee, then \$20 annually. Members are allotted tie-up space at the Stonington Pier. They are presently (1997) attempting to join the fishermen's health care plan initiated by the Massachusetts Fishermen's Partnership.

#### Cultural role of fishing

##### *History and museums*

##### *Old Lighthouse Museum*

"Located on Water St., the museum is housed in a stone lighthouse built in 1823. The building was moved from the shore in 1840 because of erosion and operated at its present site until 1889 when breakwaters were installed. The lighthouse contains ship models, whaling and naval battle gear, a China trade exhibit, oil portraits, as well as early kitchen implements, stoneware and wooden tools. Feature exhibits change yearly. A trip up the stone steps to the top of the tower provides views of three states."<sup>12</sup>

##### *Ethnicity in the fisheries*

In Stonington, although there are few fishermen living in the central part of town, the Portuguese Holy Ghost Society and the Feast of the Holy Ghost, persists as a social nexus for many fishermen. The Portuguese presence in Stonington parallels that of the fishing industry. The Portuguese were attracted to Stonington in the 17<sup>th</sup> century as participants in

<sup>12</sup> <http://www.ohwy.com/ct/o/oldligmu.htm>

the sealing and whaling industry. Vessels would leave Stonington short-handed, intending to pick up men in the Azores or Cape Verdes.<sup>13</sup> Many of these Portuguese additions to the crew returned to Stonington instead of their native land.

SNEFLA hosts the Annual Blessing of the Fleet festivities and ceremony on the last weekend in July.

#### *Kinship & family*

Kinship, particularly patrilineal, plays a part in port operations, with fathers, sons, uncles and nephews working together in the same operations. For example, in one case, the parents run the wholesale/retail shoreside operation while three sons run two scallop boats, all family owned and operated. Another family has two sons running two scallop boats and the father is active in the Association. One reason for having multiple large vessels in the families is because of the Days-at-Sea (DAS) program. The DAS are worked on one boat, then it is tied up and the family members work off the second boat's permit.

## Perceptions of the Fishing Community<sup>14</sup>

### **Importance of fishing to the community**

Key respondents considered fishing in Stonington a "dwindling" industry. There are no young people coming into the Stonington fishery, and the increasing complexity and costs of fishing make it a difficult venture at best with many risks and uncertainties.

The increasing absence of a sense of "fishing community" is attributable to three things. The first is the dispersion of the fishing population (loss of "neighborhoods" of fishermen). The second is the breakdown of kinship in the continuance of the fishing business (human capital), which comes from weakening kinship ties, a loss of the oral tradition (storytelling and exchange of information on fishing itself), and the attraction of easier occupations. Many older fishermen are now deceased and their knowledge and sense of community is lost. A third factor contributing to the loss of community is in the changing demography of coastal Connecticut. The increasing property values have made the cost of living too high to live close to the docks, decreasing opportunities to share their life on land. In neighborhoods formerly inhabited by fishing families, the average property value is over \$200,000.<sup>15</sup>

*"In the old days, the whole crew would probably be from one little town or one little community and now that's the one big difference in all of the fisheries now is that they don't live on the same street."*

*"Like I say, years ago there was more Portuguese here. Most of them are deceased now."*

One key informant noted that she did not know the other fishing families and attributes this fact to the absence of fishing families and the change in the composition in the Stonington borough over the past half century:

*"You knew everybody. I mean, there was a lot of fishermen. Now I'm down there, I work down there on the docks and I don't know half the people down there. It's changed, it's, I don't know, more developed. It's not that quaint, little town we grew up in. It's not the same."*

### **Boundaries**

The community fishermen have the most contact with is Point Judith (Galilee), Rhode Island. They go there to market product, pick up crew, and restock marine supplies.

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<sup>13</sup> Bailey 1971

<sup>14</sup> Based on key respondent interviews, 1998

<sup>15</sup> U.S. 1990 Census



Capital contacts can be divided up into those encompassing social capital (e.g. visit friends, go for recreation, go for vacation, visit relatives, socialize, go to church), economic (e.g. sell fish, offload fish, buy fishing gear, haul out for boat repairs, go to bank, go shopping), and human (e.g. go to school, go for childcare, go for health care, go for retraining). The following is a chart of typical contacts for the Stonington fishermen:

Sell Fish	Stonington – Local processors
Offload Fish	Stonington – Local processors
Buy Fishing Gear	Pt. Judith, RI (Trawl works), New London (Boater's world)
Buy Ice	Stonington dock
Buy Fuel/ Oil	Stonington dock
Haul out Boat Repairs	Pt. Judith (Galilee)
Book Keeping	Where live
Banking	Stonington
Shopping	Westerly, New London Mall
Go to Church	In town
Got to School	Stonington Public schools
Go for Health Care	Clinics in Westerly, New London, Hospital in Groton
Go for Childcare	Stonington, wherever household located
Visit Relatives	In Connecticut, out of state
Visit Friends	Westerly, Stonington, Groton
Go for Vacation	New England area
Go for Recreation	Stonington
Socialize	Local restaurants

### **Communication Issues**

When key respondents were asked to rate communication with fishing managers on a one to five scale, ratings for state and local managers were *very good*, while communication with Federal officials only rated *fair*, with the exception of the Coast Guard, which received a *very good* (4). Fishermen voice a variety of concerns over the relationship between knowledge generated on the water and in the fishery and that from the scientific sector. Another key respondent indicated *fair* for local managers, *fair* for state managers “*they do come down but they don't listen*”, and poor for federal managers “*the public hearings are just a showcase for “good actors”*”. We propose that these low communication scores derive from the perception that fishery managers are not concerned with the well being of fishermen, and further have no idea of the kind of impacts the increasing process of regulatory layering is having on fishermen's livelihoods, families, and networks. They also perceive a bias and devaluation of their potential contribution to the improved management of marine resources:

*“Fishermen are bitter about “drastic regulation so fast. . . For twenty years we've proven scientists wrong, why do they think they're right now? Why don't they admit they could be wrong?”*

Fishermen in Stonington are also angry about methods the Council uses to get data, and regard the underlying motivations for fishery policy as suspect:

*“The Council shows they have no regard for fishermen's livelihood when they make restrictions. The Council thinks nothing of reducing a fisherman's catch 10% a year for four years. The Council wouldn't take forty- percent pay cut though. As soon as the council implements a restriction that the fishermen can live with, they change it. They are*

*systematically trying to get the laws to a point where fishermen can no longer fish.”*

There is also a widespread complaint about the public hearing process as a forum for communication:

*“Fishermen would attend public meetings, make constructive comments that the council seemed to agree with, then the council would still enact the same plan without taking into account comments. Then the council complains when fishermen stop attending the meetings.”*

All of these issues reflect a lack of understanding and communication between managers and fishermen, and may speak to the need for new venues of communication. They also point to the need for new means to integrate fishermen’s observations and input into the management process, as well as a better means to monitor and mitigate the human impacts of new regulations and management policies.

As competition for fishery products has increased, fishermen who used to be close friends are now experiencing a breakdown in traditions of cooperation and mutual aid.

### **Assessments**

Key respondents also indicate that they “strongly disagree” with the stock assessments of scientists, saying that there are many more fish in the water than the managers will admit. Also, Connecticut fishermen question the reliability of data because of the lag time between data collection, analysis and release of the assessment. In consequence, they feel that regulations are too far behind actual changes in stock sizes. Fishermen would like to see regulations refined so they can respond to real time data and circumstances (e.g., the recovery now being seen) rather than out-dated stock assessments.

Fishermen claim that some are cheating to make ends meet, while others are not, and this creates friction within the industry. Others claim that the different regulations for the inshore and offshore fleet also split fishermen. The increased competition for regulation-limited resources has “broken down the sense of closeness and community [that existed] between fishermen.” Other concerns included the following:

- *Federal regulations keep everyone on edge, arguing back and forth, not knowing what’s going on. How can you play the game if they keep changing the rules?*
- *The sheer volume of paperwork associated with government regulations makes it difficult to read, let alone comprehend what the laws are and what loopholes exist.*
- *Every year the council changes the mesh size. What do you do with the old net? They’re expensive.*
- *Farmers get billions of dollars of subsidies when the government takes something from them. The government does not do the same with fishing. [Actually,] we don’t want subsidies; we want to catch fish.*
- *The government low-interest loans for capitalizing of fishing in the past were taken advantage of by investors who didn’t fish.*
- *All the public knows about fishing is the bad press. We’d like 60 Minutes or Dateline to come out with us and so we can show what it’s really like.*
- *Fishing is new money. It doesn’t come from somewhere else; we take it out of the ocean and put it into society.*
- *There is more fluke today than there was in the ‘50s.*
- *Party boats (recreational fishing) fish right over the wrecks where the cod live. Commercial fishermen can’t get there and have less impact.*
- *Commercial fishermen never blame the recreational fishermen, even though annual recreational catch is higher than commercial catch. The recreational fishermen blame the commercial fishermen.*
- *As it is now, we (fishermen) could survive the next five years. If they move up to 13”*

*flounder we can't.*

- *Looking at the stocks species by species is not working because as you raise one species it lowers the stock of its prey. You need to look at them together to find the best level of balance.*
- *Nuclear plants dump hot water into the ocean and that has an unknown effect. But they're a multi-million dollar company so the government won't chase them. It's easier to go after fishermen.*
- *In the past, technology limited fishermen to 70 fathoms. Therefore, a given species was only taken when it came inshore seasonally. The natural system allowed pressure to change from species to species by season. With today's technology you can learn to captain a fishing boat in two months, and catch fish at all depths – they get no rest.*

### **Economic Change**

Evaluating changes in fishing conditions, key respondents perceive that current conditions in the fish populations and environment are good to average, and in fact have improved over the last five years. This reflects the abundance of scallops, monkfish, and fluke that are being caught. Fishermen believe that regulations have had a conservation effect, but also that a decline in catch effort and numbers fishing has also contributed.

<b>Period in Time</b>	<b>Poor (1); Fair (2); Average (3); Good (4) Excellent (5)</b>
Ten years ago	Average (3) – Excellent (5)
Five years ago	Average (3) – Good (4)
Today	Average (3) - Good (4)
Five years from now	Good (4)

Despite their difficulties, most fishermen consider themselves fortunate to be working out of Stonington. In response to the question, "Is anyone going under?" the reply was: "No, as long as you're fishing you're making money." Because of the high product value, scallopers are generally the best paid fishermen, with a scallop captain earning 80-90k/yr and crewmen about a third of that.

### **Changes in fishing effort**

The most important or controversial recent regulations reported by key respondents to affect fishermen in Connecticut are (1) fluke quota, (2) days at sea, (3) gauge increase for lobster traps, (4) vent increases, and (5) trap limits. The pessimism of fishermen towards the management process is tempered by an understanding of the need for conservation and of putting limits on fishing effort:

*"We know conservation needs to exist, but not so drastic it puts us out of business; fishermen are independent, greedy and their own worst enemies"*

Fishing gear and effort have changed in the last ten years, with some fishermen cutting costs by going with smaller crews (or no crew), cutting back on maintenance and working longer hours when fishing to make the most of their DAS.

In Western Long Island Sound, there has been a collapse of dragging and gillnetting for finfish, although some gillnetting still occurs out of Old Saybrook (6), and Stonington (3).

The 43% decline (from 37 in 1998 down to 21 in 1999) in gillnetting is attributed to changes in water quality and decreased abundance of nearshore finfish populations. However, in Stonington several fishermen have been experimenting with trap technology for scup and blackfish, and others fish part time and seasonally for conch. Fishermen see conservation of stocks as a societal issue that encompasses wider environmental problems that go mostly unaddressed.

Key respondents see less fishing effort overall, across all commercial fisheries. The possible exceptions are scallop fishing and lobstering. Taking an historical perspective one respondent noted that as regulations moved fishermen from stock to stock, *“they beat down each one, but the other doesn’t come up. Stocks won’t rebound with big ships fishing.”* When there was a change from side to stern trawling, boats went from 2-3 men, father/son crews on 25-35 foot boats to electronically sophisticated 60-80’ stern draggers (Western rigs) boats with a 5-men crew. Many of these had never fished before and were hired by investors outside the community. As the respondent put it: *“Electronics took farmers and made them fishermen.”*

### **Effects of recent management**

An important issue in Connecticut has been the competition for fluke. Key respondents indicated that the fluke quota unfairly limits Connecticut fishermen’s catch. They also believe that the fluke quota of 250,000 pounds/year is too small for the stock size resulting in too many discards. Fishermen also complain that they were not adequately warned when they were approaching their annual quota. Thus the sudden closure for fluke was hard to adapt to.

Overall, the increasing paperwork associated with new regulations is difficult to keep up with. Increasing restrictions on fishing activities, such as the call in system quotas, and reduced DAS have made it riskier to stay in business while dealing with increasing costs of insurance, fuel, and license fees.

### **Characteristics of local fishermen**

*“What makes a good fisherman? A ‘capable’ fisherman is one who can support himself and make a living, even though one year may be better than another. You don’t have to be the best at what you do as long as you make enough at what you do to support your family and you like to do it”.*

#### *Safety*

When asked how life is better than it was five years ago, respondents replied that “fishing is safer.” However, recent deaths from drowning in Rhode Island, groundings in Rhode Island and southern Massachusetts, and dangerous offshore winter ventures by inshore (40-foot) vessels to George’s Bank from Gloucester belie this perception.

Fishing is viewed as safer with the change in gear technologies because *“Nothing handled overhead (above ship deck) anymore- it becomes safer each year.”* The decrease in number of DAS means there are fewer opportunities for accidents to occur, and the new safety gear and technologies make it safer still. At the same time, decreases in crew size have altered the work schedule of those at sea, who must work longer hours with less help, and thus are more prone to accidents due to work-related fatigue. Even though such efforts are made to reduce costs and increase profits, the decrease in DAS has put some scallopers in a “less-than-break-even situation”: *“Lack of production and overhead (maintenance costs) with 120 days at sea (for next year) means you can’t break even. Need to have another permit for other species for the rest of year to pay bills. That’s why my boats go groundfishing and fluking in other seasons.”*

#### *Job satisfaction*

Key respondents indicated that overall the fishermen in Stonington are satisfied with their work (have high job satisfaction). Moreover, what keeps them fishing is a love of the lifestyle, not the economic rewards: *“A guy who fishes does so because he wants and loves to fish, and a successful fishermen is a person who’s fishing for fish and for whom the money is a fringe benefit.”*

### **Fishing families**

Typically, many fishermen in Stonington were trained by their fishermen fathers, and began their careers helping out at the dock and going on short trips to “learn the ropes.”

In Stonington, those who are fishing can be viewed as selected survivors of a difficult period of increasing fishing costs and regulations, offset to some extent by better prices for fish products, new markets (monkfish, monkfish livers), and the recovery of local stocks such as fluke. Fishermen in Stonington and the CSSR are generally middle-aged, local, professionals, with no plans for changing their jobs or lifestyles: *“All the day- fishermen are from the area. They all went to school together in the borough.”* The youngest fishermen encountered in Stonington was 32 years old, and he claimed that *“no new folks are coming in - kids just think the work is too hard and risky- they would rather work in the service industry or with computers”*.

Because many permits are expensive and require some history of landings, it is difficult to expand the present fishing capacity and population. This is consistent with the survey conducted with the lobster fishermen under the Western Long Island Sound disaster assessment. In that sample, the youngest fisherman was 26, and the mean age was 45 years, indicating a stable but aging fishing population. Survey respondents (n =31) indicated they began fishing at an early age (10-19 years old), and had fished an average of 23 years.

Asked if spouses/companions are working more outside the home than five years ago, the modal response was “No,” indicating a degree of economic stability for local fishing households. This is in contrast to fishing households in Norwalk, Greenwich, and other sites affected by the lobster disaster in Western Long Island Sound.

Community profiles  
New London County, CT  
Connecticut Seacoast Region

### 5.1.1.2. New London/Groton

#### *Fisheries Profile*

New London/ Groton represents a fishing enclave consisting of a small finfish fishery and a relatively substantial lobstering fleet without any central docking facility for fishing vessels. The New London docks for lobster fishermen are fairly concentrated, but the facilities are old and crowded, with access to dock space along narrow walkways, and intermediate areas littered with old gear, boats, and other remains of a more productive fishing past.

#### *Harvesting Structure*

New London has two gillnetters (1998-99) and has one additional lobster boat (from 16 to 17), but has had a decline in rod and reels (4 down to 2) and trawl fishing vessels (5 down to 3). Total decline in commercial licenses for New London, then, is slight (27 down to 24 for 1998-99, only a 12% decline).

There are three large whiting boats in New London, which fish out to Georges Bank. Fish are boxed and put directly on trucks for Fulton's market in New York. The three vessels (F/V Provider, F/V Mystic Way, and F/V Lady Lynn) are owned by one company and fish George's Bank on 3 to 4 days trips. They bring in 150-200 pieces (totes) per trip per vessel, with the price in 1999 of \$.30/lb. The catch is iced and boxed on board, picked up at the dock and transported to a dealer at Fulton's (New York). They work on a 24-hour schedule; rotating crew through sleep breaks. The steam time to Georges is 12 hours each way, with approximately 36 hours spent on the Banks. The crews consist of 5 to 6 fishermen per boat (for a total of 18 employees). The whiting boats have a private dock at their own facility in New London.

The Groton fishery consists of one trawl fishing vessel and clusters of lobster boats scattered around the port area, with individual fishermen working out docking arrangements with local recreational facilities, resulting in a mix of recreational and lobster boats at small docks up and down the Thames River. In 1998, there were 32 lobster boats in Groton, though only 27 in 1999. There were also 7 rod and reel licenses in 1998, but only 3 in 1999, for a total decline from 40 to 31 commercial licenses, or a 22% decline in one year.

New London and Groton have yet to be impacted by the 1999 lobster die-off affecting the western coast of Connecticut. The lobster fishery here is reported to be fairly new, with most fishermen having come into the area in the last ten years. Two-man crews consist of a captain and sternman, with sometimes an additional crewmember (a "bander") added during the height of the summer season.

All lobstering is nearshore with day boats, going out a maximum of eight miles from shore. Key respondents complain that overfishing of lobster has reduced catch per unit effort. Even though the total lobster catch is stable, it takes more effort (more traps) to maintain the landings as they have been in the past, meaning that for the majority of producers each is landing fewer lobsters per unit catch effort. Even though the stocks of legal sized lobsters are down, the perception is that there has been an increase in number of juveniles and egg-bearing females.

Fishermen in Groton fish from 800 – 1500 traps. In Long Island Sound fishing 2,500 traps is not uncommon. The days the traps are out is referred to as the 'soak'. Generally, a haul is brought in once every five days, so to get the number of lobsters per unit fishing effort, you use five-day blocks. Longer soaks increase the number of the traps in the rotation.

Competition for lobster can get fierce, and territories, while unofficial and unmarked, are common throughout coastal Connecticut. "If you put traps in someone else's area, they will cut your traps." Since traps range from \$30-\$50 apiece, plus line and floats, such a loss is not cost effective. Thus, as in Maine and other lobster fisheries, territoriality is an adaptive feature that tends to disperse fishermen along the coast. For example, a core of five families has been fishing off the Thames for over three generations, and they hold most of the prime fishing grounds. Newcomers learned by getting their trap lines cut that they needed to find their own territories, even if such territories were not in the best fishing areas. The number of fishermen may in fact be limited by the amount of territory available to fish. The die-off of lobsters has put pressure on fishermen in places such as Norwalk and Bridgeport to find new fishing grounds but the territoriality lays the groundwork for potential conflict. Even though the ownership of specific areas (ownership of the sea) is not legal, southern coast fishermen actually advertise their grounds for sale with their vessel.

*"We were making good money the first few season (8-10 years ago), but now there is no peak season with increased earnings anymore. Those who bought boats ten years ago can't afford to get out now, and keep hoping things will get better. Mostly we just break even. A lot of the guys that came here ten years ago want to get out of fishing- including me."*

Lobster fishermen in Groton/New London note the higher degree of uncertainty and fluctuations in income that go with lobster fishing than in the past, creating a problem with their cash flow management. For example, one fisherman has had his boat for sale for two years, but has had no takers. Buying into the fishery is difficult, for a permit that allows fishing in both state and federal waters costs \$50,000.

#### *Marketing sector and support industries*

The major buyer for Groton/New London lobsters is "T and S Lobster," in Waterford. They provide bait as well, which is stored near docks in a cold facility. They mostly sell to other lobster companies (wholesale), such as "T.A. Scott Fisheries," Waterford, who also buys directly from lobster fishermen. Bait comes from "Canal Bait," Sandwich, MA and "Channel Bait," East Boston, and consists of herring or skate.

#### Economic Change

According to key respondents, the local fishery does not satisfy demand of local market, so lobster is bought in from Maine and imported from Canada, while prior to the lobster die-off, lobsters from the western sound went to Maine. The 1999 ex-vessel price for lobster out of Groton was \$3.25/lb. At the time, the New Bedford price was \$.50-.75/lb higher, but it is reported that the monopolistic initiative of buyers mostly works to control prices at convenient sale points (within \$.10 of each other). Lobster fishermen thus are working on a cost/benefit margin that can only be manipulated by increasing the number of lobsters or increasing the average size of lobster caught. Increasing costs make it difficult to fish. With an increased number of traps reducing individual catch, increased costs make it impossible to abandon vessels at docks, so most lobster fishermen are staying in, even though they describe themselves as just "getting by", or "no longer doing well."

The two small day draggers in Groton fish for fluke and flounder but are finding it difficult to earn a living with the number of restrictions on ground fishing regulations. In Connecticut, they can keep up to 150 lobsters on board a dragger, which provides some economic relief, but nearby New York allows no lobster bycatch on draggers.<sup>16</sup>

#### Fishing families

There are four long-term, trans-generational families in fishing in Groton.

<sup>16</sup> Atlantic States Marine Fisheries Commission's lobster fishery management plan requires a 100 lobsters/day and 500/trip limit on non-trap landings (*Commercial Fisheries News*, April 2001).

Community Profiles  
Fairfield County  
Connecticut Seacoast Region

## 5.1.2. Southwestern Coast Fishing Clusters

### 5.1.2.1. Bridgeport

#### *Background*

Bridgeport is a small city (population of 142,000 in 1990) on the coast of southern Connecticut that has undergone significant urban decay, and whose waterfront is poised for significant gentrification in the near future. Bridgeport is the most southwestern fishing cluster identified in this report. Located equidistant from the Rhode Island border and New York City, Bridgeport is a true city as is Boston or Portland. Unlike in Portland and Boston, the fishing industry presence in Bridgeport is well camouflaged within a decaying port riverfront consisting of a mix of industrial business, abandoned buildings, and marinas. Middle-class expressions of cultural capital including boardwalks, boutiques and tourism override the values of the NRC community in Bridgeport. Because the waterfront is economically depressed and characterized by industrial decay, it is only partly gentrified, but at the same time it lacks significant facilities for commercial fishing. There is little local support for the fishing industry; instead, increasing gentrification is more highly valued.

No dock space exists that is exclusively devoted to commercial fishing. In Bridgeport's six marinas, lobster and oyster craft intermix with recreational craft. There is one small facility for oyster boats, and the oyster company of Tallmadge Brothers, Inc. with the parent offices in Norwalk, is the single most prominent oyster harvesting business of its kind in New England. Tallmadge Bros. owns about a dozen boats used to work oyster-leasing grounds in the adjacent Bridgeport Harbor and Housatonic River.

#### *Demography*<sup>17</sup>

##### Population

According to the 1990 Census, Bridgeport had a population of 141,686 with 67,140 males and 74,546 females organized in 52,531 households.

##### Age Structure

There were 26,423 children (through 11 years); 17,079 teens (12-20), 78,924 adults (21-64) and 19,260 seniors in 1989.

##### Education

Of those persons 25 or older, 27,510 had a high school degree in 1989, another 15,925 had some college, 10,922 had a Bachelor's degree or higher and 34,618 had not graduated from high school.

##### Housing

Of the 57,224 housing units, 23,104 were owner-occupied, 29,224 were rented, and 4,896 were vacant.

##### Racial and Ethnic Composition

The Census counted 83,124 whites, 37,753 Blacks, 303 American Indian, Eskimo or Aleut, 3,019 Asian or Pacific Islander and 17,487 "other race." Italian and Hispanic origins were most common, followed by Irish, Polish, German, Portuguese, West Indian, English and Slovak.

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<sup>17</sup> <http://venus.census.gov/cdrom/lookup/982362493>



## *Economic Context*

### Income

The median household income in 1989 was \$28,704.

### Employment

#### INDUSTRY

Universe: Employed persons 16 years and over

<b>Agriculture, forestry, and fisheries (000-039)</b>	<b>597</b>
Mining (040-059)...	23
Construction (060-099)...	3256
Manufacturing, nondurable goods (100-229)...	4243
Manufacturing, durable goods (230-399)...	11603
Transportation (400-439)...	2834
Communications and other public utilities (440-499)...	1464
Wholesale trade (500-579)...	2397
Retail trade (580-699)...	9117
Finance, insurance, and real estate (700-720)...	4427
Business and repair services (721-760)...	3117
Personal services (761-799)...	1713
Entertainment and recreation services (800-811)...	645
Professional and related services (812-899):	
Health services (812-840)...	6687
Educational services (842-860)...	3930
Other professional and related services (841, 861-899)...	3575
Public administration (900-939)...	2815

#### OCCUPATION

Universe: Employed persons 16 years and over

Managerial and professional specialty occupations (000-202):	
Executive, administrative, and managerial occupations (000-042)...	5447
Professional specialty occupations (043-202)...	6433
Technical, sales, and administrative support occupations (203-402):	
Technicians and related support occupations (203-242)...	1879
Sales occupations (243-302)...	5443
Administrative support occupations, including clerical (303-402)...	11767
Service occupations (403-472):	
Private household occupations (403-412)...	260
Protective service occupations (413-432)...	2072
Service occupations, except protective and household (433-472)...	8568
<b>Farming, forestry, and fishing occupations (473-502)...</b>	<b>562</b>
Precision production, crafts, and repairs occupations (503-702)....	7404
Operators, fabricators, and laborers (703-902):	
Machine operators, assemblers, and inspectors (703-802)...	7336
Transportation and material moving occupations (803-863)...	2476
Handlers, equipment cleaners, helpers, and laborers (864-902).	2796

## *Fisheries Profile*

### Community

The attitude towards fishing culture and fishermen was one of ignorance and lack of respect: "fishermen are treated like peasants here" (key respondent, Bridgeport). Fishing culture is devalued and fishermen are "*not treated with the same regard they get in states like Maine or even Massachusetts.*" Fishermen face a combination of ignorance and stereotyping from locals.

### Commercial fishing and fisheries-related employment

#### *Harvesting structure*

Bridgeport had 27 lobster fishermen in 1998, and 24 in 1999, with no other recorded

commercial fishing ventures. The Bridgeport lobster boat cluster is typical of Connecticut second-tier ports having 20 plus lobster vessels. Other lobster ports of similar fishing capacity are Branford (25), Groton (27), with Stonington (36). However, the presence of lobster fishing is not highly valued by local government. At a meeting to decide the development fate of the waterfront, the Mayor expressed surprise when told that Bridgeport had one of the larger lobster fleets in Connecticut.

The 24 full-time lobster boats range from 25-42 feet in length. Lobsters are trapped from close to New York up to areas just south of Stonington. Lobstering has a long history in Bridgeport, and the fishermen are generally content with their present occupation. As in Stonington, most fishermen are of Portuguese descent, with others representing a mix of outsiders with many different backgrounds. The lobster fishermen have, up to this past fall, been "*here to stay*", and described as "*loving their job*." Lobstering is thus not a casual activity practiced by newcomers with little dedication to the fishery. In decades past, lobsters from Bridgeport were highly prized for their quality and size. They were often shipped to Maine for the restaurant business, while many of the Maine lobsters were being used for canned product. Lobsters from here are still shipped up and down the New England coast, with major markets in Boston and New York, and are the source for local restaurants. The three seafood-trucking operations in Bridgeport all ship lobsters, while one also transports clams and another crabs.

As in other gentrified and gentrifying areas, such as Kennebunkport, Maine, these communities with their clusters of lobster fishing boats cannot be described as "fishing dependent." Instead, their fishing sectors contribute to a regional fishing network (the sub-NRR of Connecticut) that also interfaces with other regions through the marketing of lobsters and oysters.

Oystering is the other major fishery pursued in Bridgeport. Oysters are cultched in sites up and down the river and in nearshore areas. Tallmadge Brothers harvests these private stocks. Most oysters are shipped to the New York area and points south. Tallmadge Brothers does between \$70-80 million dollars in business, with approximately 20 oyster boats in operation. These range from two large vessels of 75 feet for dredging, with the majority of boats between 50-75 feet, down to 10-foot skiffs that work sites in the nearby Housatonic River and around Bridgeport Bay.

There are an estimated 50 fishermen in lobstering using 24 vessels, and at least that many in oystering, for a total of 100 fishermen directly dependent on the local industry.

There used to be a small dragger fleet out of Bridgeport, but the last dragger went out of business in the early 1990s. A fish market operator claimed that there is "*nothing left to drag for*." Local finfish output includes blackfish (tautog), weakfish, and a few bluefish. There used to be a viable commercial fishery for striped bass, and these fish are doing well locally. However, there is political resistance from the recreational sector to reinstitute a commercial quota for this fish. Other local product includes lobsters, oysters, clams, crabs, and conch.

Any dragging for finfish done locally is from draggers that come down from Stonington. Clamming could be a potential alternate fishery as it is in Chatham, but clam beds are harvested, as are oysters, under a leasing system, and Tallmadge has already claimed the prime beds. Furthermore, leases cost \$100,000. The leased areas are cultched by the harvesters, and Tallmadge helps pay for water quality monitoring by the state DEP.

#### *Marketing structure*

There are three seafood dealers/marketers in Bridgeport. Most buy product throughout the region. For example, Larry and Sam's Seafood buys and sells lobster, finfish, clams, conch, and oysters. Finfish are purchased from Fulton's, Stonington, and New Bedford, and then sold to local customers, while local products (lobster, conch, and clams) are shipped throughout the region south to New Jersey all the way up to Maine. This dealer employs

five, all of Portuguese descent, and all residents of Bridgeport. The dealers used to be lobster fishermen, and still operate two boats. They also buy wholesale from six other lobster fishermen. The company has been in operation only 5 years, and has good relations with the other small local markets. They help each other out when product is in short supply. Product is generally sold wholesale to three independent regional dealers, who own their own trucks.

#### *Support Services*

Recent plans to develop the waterfront do not include any accommodations for commercial fishing. For example, Hitchcock Marine was a prominent marina and marine supply business that served a dozen lobster boats and numerous recreational craft. Space was made available on the docks for lobster boats and gear, and the marina shop supplied parts for minor repairs and upkeep. Hitchcock was displaced under the development plans and no space was made available for its relocation. Hitchcock moved to Stratford, the next town. There is no diesel fuel facility dockside in Bridgeport, and only one dockside bar/restaurant that specializes in seafood.

#### Cultural role of fishing

##### *Ethnicity in the fisheries*

At least half of working lobster fishermen are reported to be of Portuguese descent, many immigrating into the area after having come into the U.S. via New York. Other recent arrivals include Russian fishermen working the oyster leases for Tallmadge Brothers. In addition, there are Yankees and some Italians.

##### *Species, Seasonality*

Fishermen's production peaks are in the months of July-August, November-December, and March-April. For 1999-2000, the end of August and the November-December seasons have already been lost. Switching fisheries to adapt to loss of stocks is not an option in the lobster fishery. There was some discussion of opening the striped bass fishery to the commercial sector, but resistance from the recreational sector would make this difficult.

Although there are no finfish being caught out of Bridgeport at present, the fish that are still marketed here include: weakfish, blackfish (some are caught in lobster traps, and there is an Asian market for live blackfish in Hartford), bluefish, clams, oysters, conch, lobsters, and crabs. Striped bass are caught recreationally, even though they used to be commercial and their present abundance might warrant a commercial enterprise. The marketing of fish and lobsters is done locally, and product moves up and down the coast depending on the season and the market. For example, lobsters sold in the fall to Maine may be penned and then used in the restaurant trade in the summer. Restaurants in other areas may then receive previously caught lobsters from Connecticut via Maine.

## **Perceptions of the Fishing Community<sup>18</sup>**

#### **Boundaries**

Bridgeport is close to New York, being only an hour and a half from the city. The influence of the city is seen in the urban character of Bridgeport, including the presence of run-down neighborhoods and signs of urban decay. Businesses up and down the waterfront are fenced and many have barbed or ribbon wire as well. Practically all contacts are local. The community that people have the most contact with outside of Bridgeport is New York.

Community Contact- Where do people go to do the following things?

Sell Fish	Bridgeport
Offload Fish	Bridgeport
Sell anything else	Bridgeport

<sup>18</sup> Based on key informant interviews

Buy fishing gear	Bridgeport
Buy Ice	Bridgeport
Buy boat fuel and oil	Bridgeport
Haul out for repairs	Bridgeport
Go for bookkeeping	Bridgeport
Go to bank	Bridgeport
Go shopping	Bridgeport
Go to church	Bridgeport
Go for retraining	(none presently available)
Go for health care	Bridgeport
Go for childcare	Bridgeport
Visit relatives	New York/ Bridgeport
Visit friends	Bridgeport
Go for vacation	Florida/Canada
Go for recreation	Bridgeport
Go to socialize	Bridgeport

### **Communication Issues**

Lobster fishermen in Bridgeport are generally dissatisfied with the communication between themselves and their local representatives. On a one to five scale, they rate local communication as "poor," particularly with city officials who seem to know little about the fishery and who plan to convert the waterfront to a gentrified space only for tourism. This plan does not presently include any dock space for commercial fishery operations. One suggestion made to the city government was to create a "fishing village" that would serve as a tourist attraction but also meet the needs of the commercial fishery.

State managers are rated as having "excellent" communication with fishermen. Fishermen are very satisfied with the state DEP and their efforts to assist them in their recent crisis.

Communication with federal fishery managers is rated as "good."

### **Assessments**

Fishermen generally agree with the stock assessments of state and federal managers. This differs from fin and scallop fishermen in Stonington, who are dissatisfied with the extensive regulations they face in pursuing groundfish, fluke, scallops and monkfish.

### **Economic Change**

On a five-point scale, ten years ago the fishery was rated as *average* and five years ago *excellent*, with many lobsters to be taken. This differs from the conditions noted for New London/Groton on the Thames River, where fishermen note a steady but consistent decline in the fishery over the last ten years believed to be due to over fishing. Before the die-off, the fishery was also rated as *good*. However, the uncertainty of the fishery disaster is such that the biologists and fishery specialists cannot state when they expect the lobster population to recover.

Besides fishing, there is little else for fishermen to do in the off season or as alternate jobs. Possibilities include construction work and carpentry, but little else. There are no retraining programs for fishermen as there are in Massachusetts. Thus, most fishermen are locked into what they do, and given Bridgeport's depressed waterfront economy, finding other work could mean leaving the community all together. A lobster fisherman expressed confusion as to what he could do to earn money after the fall die-off of lobsters. He said he would "look around," but had no options immediately at hand.

**Changes in fishing effort**

The decline in finfish fishing along the southern coast is seen as having contributed to the healthy lobster stocks. Most dragging stopped 12 to 15 years ago, and lobster fishermen think this allowed lobster habitat to improve, while also eliminating the illegal take of lobsters by draggers.

**Characteristics of local fishermen***Job satisfaction*

When asked if most fishermen were satisfied with their work, the response was “yes”: “Everybody loves fishing, but it doesn’t put any food on the table, and we are all uncertain about the future after the die off.” The uncertainty created by the lobster die-off has created anxiety and stress in local fishing households. The lobster fishermen are described as dedicated to their profession, and most would like to remain in it.

Sub-region Profile  
Counties: Washington and Newport

## 5.2. Rhode Island

The Rhode Island Sub-NRR is characterized by diversity in both cultural and biophysical capital. Features include the coastal area of Eastern Long Sound, the complex shoreline and inlets of Narragansett Bay, and the tidal-riverine system of Sakonnet Point and Tiverton. Although Point Judith, Rhode Island's premier fishing port, lacks the complex infrastructure of New Bedford or Gloucester, MA, it still ranks 5th on the New England regional index of fisheries infrastructure with adequate space and facilities to handle its robust fishing fleet. The fleet's diversity and shifting patterns of resource use set it apart from the fleets of other prominent New England ports. The topography of the Bay system allows for a variety of niche fisheries to co-exist with significant industrial activity in the upper bay system and a dominating recreational presence on Jamestown and Aquidneck Islands on the eastern side of the Bay. Beaches mixed with river inlets and bisected by the major port of Point Judith dominate the western and southern parts of the bay and state. These variations in coastal geomorphology and ecosystem niches are reflected in the variations in gear type, species targeted, and the presence of both inshore and offshore fishing vessels of various sizes and levels of technological sophistication.

There is an important distinction between fishing in the upper and lower parts of Narragansett Bay. The lower Bay is in close proximity to the oceanic waters and is dominated by the two main ports of Rhode Island: Point Judith and Newport. The upper Bay is the home of some 12 small (up to 40 feet) bay druggers and about 30 bay lobster boats that are not concentrated in any one location, but are scattered in small clusters in Kent, Providence, and Bristol Counties along the perimeter of the upper bay. These boats in aggregate rank third in importance in this sub-region. This has not always been the case, for the upper bay ports such as Warren and Bristol were very important up to the 1940s when the oyster population of the bay was still healthy. In recent decades, with the decline of the bay finfish stocks, the number of bay druggers has declined to its current level, dispersed along the perimeter of the bay. There are no state commercial fishing dock facilities in the upper bay as there are in Point Judith and Newport, so the boats must tie up in private marinas or other private facilities. The vast majority of fishermen in the upper bay are bullrakers who fish from skiffs for quahogs. This fishery is managed by the state of Rhode Island. The numbers of bullrakers are known to vary inversely with general economic conditions. Currently there are approximately 300 licenses for this shellfish industry.

There are two ocean clam boats in the upper bay that tie up in Warren as their market dictates (the boats move to the market). There are several herring boats and ones that target under-utilized species (e.g., mackerel) that work from docks at Quonset Point (Davisville). There are perhaps as many as a dozen boats from other ports, both inside and outside of Rhode Island, that target species in the Bay from time to time.

Dockage is the problem in the upper bays as it is in Jamestown, Newport and Point Judith. This problem is related to gentrification and competition for waterfront land and space, including parking and gear areas. The ports in the lower bay reported on here represent the range of variation in that part of the sub-region and are the ones that mainly utilize the near and offshore ocean water.

Commercial fishermen pursue fish as far north and east as the Hague Line and as far south as the deep-water canyons off Long Island Sound. Lobster fishermen work both in and offshore, other fishermen dredge and dig for scallops, clams and quahogs, employ floating fish traps for tidal species such as bluefish and scup, and use purse seines to catch squid, butterfish, mackerel and herring. Inshore fishing provides product for both local restaurants and wholesale markets. Fish such as mackerel, herring, butterfish, and squid are sold

internationally. Point Judith is usually one of the top five fishing ports in New England in landings.

Rhode Island's early history was dominated by agricultural pursuits, followed by a prosperous textile industry utilizing the upper bay and river systems. By the end of the 1970s, agriculture was no longer a significant industry. The numbers of agricultural workers declined from a high of 1,388 in 1930 to none in the 1980 census.

The commercial fishery of Newport and Sakonnet Point has origins going back to the 17th century. In fact, Sakonnet Point boasts a fish trap that has been in continuous operation for over 300 years. Nevertheless, the modern phase of commercial fishing began as a secondary industry, with 178 fishermen in 1930 which grew to an estimated 390 fishermen in 1990 as counted by the U.S. Census.

The first commercial fishermen used hook and line, beach seine and floating traps. Both the floating fish traps and beach seines were worked by seasonal "fishing gangs" who stayed in temporary fish houses along the beach.<sup>1</sup> Beach seining gangs were equipped with two boats and a seine to catch menhaden. This fishing practice, which began around 1867, continued until about 1940. A decline in stocks and loss of local markets led to the closure of many of the dehydration plants and beach seining gradually disappeared. Trap fishing and lobstering were also important early fishing methods in this area. In the early 1900s, though, lobsters were not considered a commercially important species and were principally used as feed for pigs and cattle.

Recently there has been an increase in fishing for herring. The herring is sold for lobster bait, canned for human consumption, and sold as feed for zoo animals. In Davisville, large-scale offshore fishing vessels pursue such species as butterfish, squid, herring and mackerel, which are flash frozen and generally sold to overseas markets. These were once called "underutilized species," though some say they should more accurately have been referred to as "under marketed." Now, new markets have been developed. For example, herring products from Rhode Island are sold as bait for long-line fisheries in Costa Rica.<sup>2</sup> An expansion of processing facilities is being considered to take advantage of the large offshore biomass of herring identified on Georges Bank. Maximum yearly processing has ranged from 1,000 to 1,500 tons depending on markets and availability. While products such as whiting, squid and butterfish have taken precedence, the downturn in groundfish and the shift of biomass towards mackerel and herring has the processing sector considering an upgrade in capacity to take advantage of these conditions.

Interestingly, when a company out of Rhode Island first began to flash-freeze squid at sea, the markets were wary. When squid is first caught it is a reddish-purple, later as it starts to age, it fades to a white gray, then when it has spoiled it turns back to purple. When frozen at sea, squid retains a reddish-purple, fresh color, but early buyers feared that it was the purple of old squid. Education of the dealers and consumers ensued.<sup>3</sup>

In 2000, Rhode Island communities with significant fishing industry activity included Pt. Judith (Galilee), Westerly, Jamestown, North Kingston, Wickford, Warwick, East Greenwich, Newport, Bristol, Warren, Sakonnet Point, and Tiverton. Pt. Judith has the bulk of the large fishing vessels, but not the large number of small boats characteristic of some of the other ports. The small boats have increased their already flexible annual round to include fishing for such species as quahogs, scup, winkles, eels, and lobster. Shellfishermen of the west bay tend to be part-time fishermen, working as teachers or firemen as well and they often keep their boats at marinas. Fishermen of the east bay tend to trailer their boats and work full time. Many have only state licenses/permits.

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<sup>1</sup> Whaley (1939:4).

<sup>2</sup> Dyer et al (1998: 26).

<sup>3</sup> Key respondent interview.

### *Fishing Dependency Indices*

Tourism is the other growth industry in Rhode Island. South County has become a summer haven for recreation, Narragansett Bay has always been an attraction, and Newport has a 100-year history of tourism focusing on water sports, sailing, and summer "cottages" for the rich and famous.<sup>4</sup> Our gentrification scale puts Newport (factor score .862, tied rank score of 5) near the top of the gentrified ports of New England, with Point Judith (factor score of .842, rank score of 7), and Jamestown (factor score of .701, rank of 11) ranked high and only Tiverton (rank of 27) and Sakonnet Point (factor score of .939, rank score of 30 out of 36) far behind. Collectively, this makes the Rhode Island fishing communities among the most gentrified in New England.

Tourism is said to be pushing the fishing industry into the economic background as these ports become increasingly gentrified.<sup>5</sup> However, when compared to other fishing ports in the U.S. on the basis of quantity and value of landings, Point Judith remains among the top ports. For example, in 1999, Pt. Judith landed 72.5 million pounds worth \$51.2 million dollars, second only to New Bedford among New England ports and eighth among major U.S. ports. Rhode Island as a whole, was ranked third compared to the other New England states in both quantity and value in 1998 and 1999. State boat registration and licensing statistics indicated 4,491 fishermen in Rhode Island in 2000.<sup>6</sup>

Even so, traditional cultural traditions associated with the fishing industry are being transformed. For example, the "Blessing of the Fleet" celebration has become as much a celebration of recreational boating as commercial fishing. This represents a shift in social and economic capital away from commercial fishing towards tourism, of which recreational fishing is a major component. However, the shift began as a consequence of the commercial fishermen's insurance company's regulations. The Coop's Board of Directors started the Point Club as a separate entity for self-insurance. An early regulation was instituted that disallowed passengers on the fishing boats. Since one of the attractions of the Blessing was the opportunity to bring family and friends on the decorated boats for the parade and for a party, this regulation quickly dampened enthusiasm for the Blessing. Today (2001) there is a renewed effort to determine what would again attract commercial fishermen.

Taking into account the three dependency indices based on employment statistics, the Rhode Island sub-region ranks 7<sup>th</sup> overall out of the 11 sub-regions on this index. However, Point Judith ranks fifth (after Chatham, above Portsmouth) on the fishing infrastructure differentiation scale and Newport ranks 13. Obviously, fishing remains significant for Point Judith.

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<sup>4</sup> Bort (1981).

<sup>5</sup> Dale (1992).

<sup>6</sup> Statistics kept by the Rhode Island Department of Environmental Management



Community Profile  
Washington County  
Rhode Island Sub-region

## 5.2.1. Washington County

### 5.2.1.1. Pt. Judith/Galilee

#### *Background*

The original inhabitants of the region were Algonquin Indians who hunted, trapped and cultivated until being replaced by European colonists. Indian displacement began with the Pettaquamscutt Purchase in 1658, followed by other transactions in 1660 and 1662. During the Colonial period, the Galilee area was known as Point Judith Neck. The Colonists used the land for farming, an occupation that continued to dominate the regional economy until the 19<sup>th</sup> century. The rich pastures, created by the melting of glaciers 10,000-12,000 years ago, supported the grasses to feed horses, cattle, and sheep. The major crops were corn, potatoes, and oats. In addition to the harbor that allowed for transporting agricultural products, a salt pond served as a safe refuge for boats transporting goods to Providence, Newport, other coastal ports in the east, and the Caribbean.

The industrial sector boomed in the early 1800s with the growth of textile mills, while the agricultural sector experienced declines with gentrification of the area and shifts in labor to mill jobs.

Galilee salt marsh borders a barrier beach. The channel leading into Point Judith Pond has changed location over the years due to storms, erosion and composition of the barrier beach. The original breachway was a few hundred yards to the west. In 1890 the government decided to build a permanent channel and the Point Judith Harbor Refuge. The Refuge was built about a quarter mile off the beach, in the ocean. Two man-made jetties comprised of large rocks, stretch out from the east, near Point Judith Lighthouse,<sup>7</sup> and the west, at Matunuck. A third jetty, in the shape of an elbow, is located between the east and west jetty, separated from them by two channels. Construction was completed in 1910. The Refuge provided ships with a safe haven from storms and protects the shore since the jetties receive the impact of ocean waves, tides, and current.<sup>8</sup> Later, a breakwater was constructed in the mid-1930s as part of Roosevelt's New Deal program.

The fishing village of Galilee developed in the mid-1800s.<sup>9</sup> The first commercial fishermen used hook and line, beach seines and floating fish traps for fishing. Beach seining for bass and menhaden began around 1867.<sup>10</sup> Seining was carried out by "fishing gangs," who resided in fish houses along the beach outfitted with bunks in which they slept until it was time to fish. Gangs were equipped with two boats and a seine. This fishing practice continued until about 1940. Trap fishing and lobstering were also important early fishing methods in the area.

Today, Galilee is a busy commercial fishing and recreational boating port. There are sightseeing, whale watching, and fishing trips available, as well as a ferry to Block Island. (Block Island is a small, fashionable island located thirteen miles from the coast.)

In 1948, the fishermen of Galilee organized the Point Judith Fisherman's Cooperative in

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<sup>7</sup> Point Judith Light was built in 1857, the octagonal, granite tower stands on the west side of the entrance to Narragansett Bay. It is the third lighthouse to be erected on the site. The two previous lights, a wooden tower built in 1810 and a stone tower built in 1816, were both destroyed in storms.

<sup>8</sup> <http://omp.gso.uri.edu/discovery/saltmarsh/smh15.htm>

<sup>9</sup> History of Galilee see <http://www.geocities.com/Athens/Parthenon/9105/galhist.html>

<sup>10</sup> Whaley 1939:4

order to obtain better prices for their catch. Prior to this, the fishermen generally consigned their fish for sale to the New York or Philadelphia markets. The Cooperative provided processing plants, freezing plants, dock facilities as well as representatives who could deal effectively with state and federal agencies. Through the Co-op, fish were marketed throughout the East Coast from Maine to South Carolina. The Point Judith Fisherman's Cooperative was one of the most successful in the country and was a major influence in making Galilee a thriving fishing port. As of 1978, Point Judith's landings made up 61 percent of Rhode Islands' total catch. In 1992, the total value of finfish landed in Point Judith was \$36.2 million. The Co-op failed in 1994. Some informants suggested that the Co-op became over-extended constructing new facilities, others suggested that its non-profit status caused the Directors to underestimate the funds needed for cash flow and expansion, so too much was dispersed to the membership.

The Point Club was started by the Board of Directors of the Coop to self-insure the vessels. It was created as a separate entity from the Coop and remains viable. It draws membership from the whole Atlantic coast.

Since the post-war days, significant change has come to Point Judith. Tourism is pushing the fishing industry into the economic background as the port becomes more gentrified.<sup>11</sup> Areas where fishermen used to park before setting out to sea are now reserved as parking lots for tourists. All but one of the social gathering spots for fishermen have been converted into such tourist attractions as ice cream shops and restaurants. Nevertheless, in 1999, fin fish landings reached 72.5 million pounds worth \$51 million.

While the immediate future of the fishing industry in Point Judith is promising, a lack of recruitment and loss of social and cultural capital through gentrification prevents the industry from expanding, and could accelerate its decline if gentrification intensifies. There is evidence that this is occurring, since the South Kingstown area is experiencing a population growth due to the high quality of living and the benefits of a good school system that is driving rapid land development.<sup>12</sup> As values of local dock space and land increase, further declines in fishing infrastructure may follow.

Point Judith has a gentrification scale rank of 7 and factor score of .842, compared to the highly gentrified Newport with a rank of 5 and factor score of .852.

## *Demography*<sup>13</sup>

### Population

Narragansett (based on the school district boundaries) had 14,985 people according to the 1990 Census, 7,362 male and 7,623 female.

### Age Structure

The population of children was 2,311 (3 to 19 years old) in 1989.

### Education

For persons 20 years and older, 1,256 had no high school diploma; 2,387 had graduated from high school, 4,033 had some college and 4,105 had a Bachelor's or higher degree.

### Housing

Of the 8,206 housing units in 1989, 3,382 were owner-occupied, 2,461 were rented and 2,363 were vacant.

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<sup>11</sup> Dale 1992

<sup>12</sup> Rhode Island Economic Development Corporation

<sup>13</sup> <http://govinfo.library.orst.edu/sddb-stateis.html>

### Racial and Ethnic Composition

The population was largely white (14,473) with 121 Blacks, 137 American Indians/Eskimo/Aleut, 122 Asians and 9 "Other." The first ancestry reported (in rank order) was Irish, English, Italian, German, French, Hispanic and Polish with scattered representatives of various others.

### *Economic Context*

#### Income

Median household income in 1989 was \$35,545 and per capita income was \$16,986.

#### Employment

Details of demographic transition and economic history up to 1970 can be found in Poggie and Gersuny (1978). The primary trend has been towards an increase in the services sector away from primary and secondary sectors. In 1970, only 1.1 percent of workers were engaged in agriculture (93 people), 903 in manufacturing (including 244 in textiles), 24.2 percent in material goods-producing occupations, with the majority (74.7%) involved in various professional, white collar, and service pursuits.

As of 1996, the labor force remains skewed towards the service industry, with fishermen numbers remaining fairly constant.

### *Fisheries Profile*

#### Community

Pt. Judith fulfills the definition of a fishing community on the basis of central place theory. Fish are legally sold ex-vessel to a dealer, processor or the public;<sup>14</sup> fishing support services are provided; there are public facilities providing dockage; fishing people satisfy their daily and weekly social and/or economic needs here, and some fishermen and their representatives participate in fisheries resource management.

Despite changes, as one respondent put it, "*there is still a distinct community of fishermen here.*" Fishermen comprise a social and occupational network: "*People know each other.*" The small town atmosphere is punctuated by functions such as the Fishermen's Scholarship Fund's annual game feast where \$6,000 was recently raised for the sons and daughters of fishermen. The Fund also sponsors a road race and all events are fully subscribed.

### Commercial fishing and fisheries-related employment

#### *Harvesting structure*

A fleet consisting of offshore and inshore vessels follow a cyclic, shifting pattern of resource use that sets Point Judith apart from most northern New England ports. Point Judith boats are diverse in their annual round and approach to the fisheries. Fishermen are employed full-time as they switch fisheries, gear and boats during the year. The port most similar to Point Judith is Chatham, although Chatham has no large offshore vessels in its fleet.

Port facilities, although small scale compared to New Bedford or Gloucester, are adequate for the size of the local fleet. There are approximately 230 vessels of all types berthed in Point Judith.<sup>15</sup> The area is not much bigger than 3 city blocks, but all the activity in the area is associated with some aspect of the fishing industry. Vessels are located at a number of docks that extend perpendicular to the main street. Another set of docks, mostly used by lobster boats, extends off a large industrial area. Across from the harbor are a number of

<sup>14</sup> "Ex-vessel" means directly from the fishing vessel.

<sup>15</sup> Personal communication, Dan McGovern, Division of Coastal Resources

empty docks for seasonal recreational boaters.

Adaptability is a trademark of the Point Judith fleet. Point Judith fishermen have the capacity and willingness to innovate and spread their efforts across different gear types and fishery stocks.<sup>16</sup> For example, recent increases in local landings resulted from targeting herring, which involves a gear conversion costing \$125,000. Such success and economic flexibility is mirrored in a fleet that is fairly modern and in good repair.

The number of commercial vessels in port is 134. Vessels range from 45-90 feet, with most being ground trawlers. Of these, 55 are between 45 and 75 feet, and 17 over 75 feet. The smaller vessels have 1-2 person crews, with larger vessels manned by 4-5 crew. Most larger vessels fish for squid, herring and whiting. Some smaller inshore boats were targeting groundfish at the time of the interviews, but no boats over 70 feet were doing so. Key respondents explained that most of the vessels are flexible, fishing whatever species they believe they can catch and for which they can find markets.

There are about 40 inshore and 10 offshore lobster boats that call this port their home, along with 4 lobster dealers and one bait house that specializes in lobster bait (i.e., salted herring and strung skates). Newport has 6 large offshore lobster boats and about 20 inshore boats. The distinction between inshore and offshore lobster boats has blurred of late as many so-called inshore boats may be capable of going offshore with the highly sophisticated equipment they have aboard.

Some larger vessels from Gloucester and other ports occasionally join the local fleet. One fisherman from Gloucester recently fished for squid off of Rhode Island. His motivation was to establish a history in the squid fishery (a form of future "fishing investment"), although he lost money on the initial venture.

The captain of the one eastern-rigged side trawler still in operation fishes south past Montauk and north to New Bedford. He described his fishing strategy as 'opportunistic' (marketing whatever is caught). For example, his recent catches have included skate, which is salted in barrels and sold as lobster bait.

#### *Processing structure*

The large industrial area at the northern end of the street is where most fish processing is done. Six processing plants including the former Point Judith Coop (now owned by an independent operator) and Town Dock are located there.

"Town Dock" receives a variety of groundfish, although they do not process much cod and haddock. The company started packing herring in the 1980's, sending 10 trucks to Gloucester daily. For a time the company concentrated on yellowtail, fluke, and cod. About seven years ago it shifted its focus because of a decrease in landings for these species. Now they process little groundfish but primarily handle squid, herring and mackerel. This has caused problems for those who continue to target groundfish. At least one fisherman has moved his vessel to Newport, claiming that processors favor the larger offshore vessels.

Among the companies that handle squid are the Pt. Judith Fishermen's Company (formerly the Co-op), Town Dock, South Pier Fish and Sea Fresh Corporation.

As in Gloucester, there is an external market for seafood products, including processing of non-local seafood products. For example, the Mitsubishi Corporation has an arrangement with Sea Fresh Corporation. Mitsubishi Fresh, Inc. contracts 16 Taiwanese longliners to fish for big eye and yellowfin tuna off of Brazil and Trinidad. These vessels stay out for six months at a time, unloading their catch onto carrier vessels in exchange for fuel and food, and then return to Trinidad where the main plant is located. Fish are handled and shipped from Trinidad to Miami and New York for distribution in the US markets. Most of the harvest

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<sup>16</sup> Key respondent interview.

is sold domestically. However, all sales and business are conducted out of Narragansett. The involvement of foreign investors in local seafood processing is a pattern that is being repeated in many ports. Processing of foreign fish products is an important economic activity in both New Bedford and Gloucester.

### *Support Services*

There are numerous support industries along the water. Facilities include dockside fuel pumps, a single restaurant/store, bait shops,<sup>17</sup> commercial marine suppliers, recreational suppliers, and vessel repair shops. Along the adjoining streets are several other restaurants devoted to seafood. The Block Island Ferry leaves from this port so a large seasonal population of people passes through town.

A telephone survey identified eleven suppliers of fisheries equipment, 32 wholesale fish and seafood buyers, four seafood brokers, and 2 packers. New in September 2001 is a seafood display auction in Galilee associated with the auction in Gloucester. Owned and operated from Point Judith, through electronic links, the auction and sales of groundfish will be conducted in Gloucester. Lobster and shellfish will be handled by the owner's existing business. The facility has 159 foot, privately owned dock where vessels can land their catch. Fuel and ice will also be provided.<sup>18</sup> Eight cents per pound paid by the seller covers the cost of offloading, handling, processing and ice. Buyers must have a \$50,000 bank credit line to participate and they pay other fees. Payment to the fishermen is thus guaranteed.

There is a waiting list for a designated docking space in the port. Lobster boats (small day boats) have a particular dock spot for which they pay annually. New boat purchasers are entitled to keep the vessel's designated dock space if the purchaser is a relative of previous owner. If not a relative, the designated spot goes to next person on the waiting list and the new vessel owner is added at the end of the list. The annual fee for dock space is \$1300 and is handled by the state. Vessels without designated spaces can use the transit dock, but run the risk of being crushed by larger boats. Large boats also pay annually (by their length), but do not get a personal spot. *"First come first serve when you arrive in port; at any given time most vessels are at sea and there is plenty of space. The day before a storm all boats will be in and you will see them all rafted off — chaos."*<sup>19</sup>

Respondents noted that Rhode Island's Economic Development Corporation (EDC) is hoping to bring in "for-profit" dock management. Some fishermen anticipate that such management would enforce rules (such as fee collection) and thus make it easier for those who are on the waiting list to obtain a designated spot. Evidently, some people maintain their spot by keeping a dory rather than an active commercial fishing vessel. Nevertheless, some are concerned that the EDC's management would favor recreational vessels over commercial and "like the port across the pond, commercial vessels would be pushed out."

There is no public cold storage facility in the state of Rhode Island.

### *Employment and dependency*

Point Judith is the most fisheries-dependent of the communities in Rhode Island. There are approximately 500 households involved in the commercial fisheries, and another 400 indirectly dependent. Key respondents noted that the federal employment statistics are very

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<sup>17</sup> Lobster bait: A windowpane flounder (brill)/skate mix was said to by one respondent to be the most common bait now. In winter windowpane flounder is the usual bait but in summer it breaks down too fast, so skate is mixed in to increase fishing time. This is especially true for people with large gangs of traps who can't pull them often. Another respondent said that bait is usually skate, menhaden or shad. Shad only lasts one day, but lays a scent trail that attracts lobsters. Skate lasts longer and so provides food for trapped lobsters. Both menhaden and shad are caught floating fish traps; menhaden is also caught in purse seines.

<sup>18</sup> *The Fishermen's Call*, Vol 1, Issue 2, August 2001

<sup>19</sup> Raft-out means the boats are tied up one to another rather than directly to the docks, visually comparable to double or triple parking.

inaccurate for Rhode Island.

“Town Dock” employs 50 people and hires between 20-50 part-timers as needed. Temporary employees work there on a seasonal basis depending on the species being packed. Permanent employees all live in the area, while part timers live as far away as Providence.

Point Judith is situated in a highly gentrified and gentrifying area, with pressure from tourism pushing up real estate prices. Yet, the fishery continues to hold on with a fishery infrastructure rank of 5<sup>th</sup> (with a factor score of 1.350), supported by the presence of bait houses, boat yards, docking facilities, fishermen’s associations, processors/wholesalers, seafood restaurants, welding suppliers and locally-based seafood trucking operations.

#### *Sales/revenue*

In 1999, Pt. Judith landed 72.5 million pounds worth \$51.2 million dollars, second only to New Bedford among New England ports.<sup>20</sup> Point Judith ranked 8<sup>th</sup> in value of landings among major U.S. ports in 1999 (9<sup>th</sup> in 1998).

In 1999, the flooding of fish markets with Russian cod, Canadian, and European fish products drove down dockside prices of domestic product. The result was that valuable fish such as grey sole were being bought at \$.10 a pound (key respondents, Point Judith and New Bedford), far below their retail value to consumers and far below a break even price for domestic groundfish fishermen. In addition, Southeast Asian frozen flat fish, scallops and squid from South America, China and India competed with domestic product. Imported fish has few restrictions, and local fishermen are forced to deal with occasional floods of foreign product that turn otherwise productive fishing trips into “brokers,” i.e., net-loss activities.

Sixteen percent of the seafood exports of the East Coast come from Rhode Island (45 percent of New England’s exports) and are comprised primarily of squid and lobster.

#### *Species, Seasonality*

Fish product from Point Judith is considered to be of very high quality. It commands high prices in Fulton’s Market in New York and the Boston Fish Exchange.

<b>Species</b>	<b>Season</b>
Squid	Year round, with the bulk in May
Herring	December to April
Mackerel	March to May
Whiting	Year round, with the bulk in summer
Scup	Year round, but recently scarce

Other important species include butterfish and fluke. Squid, herring, mackerel and whiting are predominantly offshore midwater species caught by large (70') vessels. Groundfish such as yellowtail, winter and summer flounders are primarily targeted by inshore medium length vessels (no large, offshore vessels).

An ecological advantage for Point Judith fishermen is that they are close to many of their primary stocks. Another advantage is that Point Judith fishermen have access to mid-Atlantic stocks such as butterfish, which are approaching the northern most point in their range, as well as access to northern traditional groundfish areas and stocks. An important key to the adaptability of Point Judith fishermen is the switching of both target species and gear. Proximity to the different ecological systems of the mid-Atlantic and New England assures the success of this strategy.

Twenty-five years ago, whiting, squid, butterfish and scup were already primary targets of

<sup>20</sup> *Fisheries of the United States, 1999*. U.S. Dept of Commerce, NOAA, NMFS. Prepared by Fisheries Statistics Division. Available at <http://www.st.nmfs.gov/st1/fus/fus99/index.html>

Point Judith vessels. Groundfish was targeted only when the others were less abundant. Point Judith is also a "short trip" port because the species usually targeted do not store well. Thirty years ago, vessels also caught swordfish using harpoons. Fifteen years ago, gillnets were used for swords, though there were never more than about four gillnetters.

Lobster is also an important local fishery. However, the lobster and shellfish fishermen were severely impacted by a 1996 oil spill. On January 19, 1996, the tank barge NORTH CAPE and the tug SCANDIA grounded on Moonstone Beach in southern Rhode Island after the tug caught fire, spilling an estimated 828,000 gallons of home heating oil. Oil spread throughout a large area of Block Island Sound, including Trustom Pond National Wildlife Refuge, resulting in the closure of a 250-square mile area of the Sound for fishing.<sup>21</sup> It was later determined that 9 million lobsters were killed by the spill, as well as 19 million surf clams, 4.2 million fish, and over half a million kilograms of marine biomass such as worms, crabs, and mussels. In the salt ponds, 6.5 million worms and other amphipods, more than one million crabs, shrimp, clams and oysters, and another half-million fish were killed. Birds were also harmed by the spill; 2,300 marine birds were killed, including 402 loons. In addition, there were five to ten fewer piping plover chicks hatched at Trustom Pond National Wildlife Refuge. Closure of these waters and the death of millions of lobsters and shellfish had a severe local impact. Lobster fishermen were forced to discard polluted traps, fish outside traditional areas, and discard lobsters that had any signs of being polluted.

The spill also forced some fishermen to dock in Newport and fish in areas where they would normally not go. The water around Pt. Judith could not be used to pump out the herring boats, so Town Dock had to pump out at Quonset. The greatest impact of the oil spill has been on the lobster fishermen, although nearshore areas fished by inshore bottom trawlers have also experienced closures. Furthermore, a domino effect on the communities was noticeable. Everyone from hairdressers to grocery stores owners had to lay off employees. A restoration settlement agreement was finally announced in July 2000.

Landed species include butterfish, fluke, herring, mackerel, squid, whiting, scup and lobsters.

### Cultural role of fishing

#### *Cultural events*

The social cohesiveness of the Point Judith community was based on the sharing of a common occupation and traditions of the fishing lifestyle. Twenty years ago, there was a different atmosphere to the community. Bait processing and related jobs brought locals with no prior experience into contact with established fishermen to share in the development of the industry. An event that represented this shared lifestyle was the "Blessing of the Fleet." The Blessing, put on by the Lions Club to honor the commercial fishing industry, was marked with food, games, parades, and other festivities. Commercial fishing boats would be cleaned and decorated for the celebration to symbolically demonstrate their central value in the social and economic life pattern of the community. Restrictions by the insurance companies for the commercial vessels have severely curtailed participation by commercial fishermen in the Blessing. It is now an event principally celebrated by the recreational fishing participants.

#### *Ethnicity in the fisheries*

The majority of fishermen are first generation and lack historical ties to the industry. There is also little ethnic diversity in the population. The overwhelming majority of fishermen are white males. Older fishermen refer to themselves as "Swamp Yankees." "*These fishermen are mostly Yankee... they change. The more ethnically rooted a fishing community is, the more difficult it is for them to change. There is a good side to a lack of tradition.*"

<sup>21</sup> <http://www.darp.noaa.gov/neregion/ncape.htm>

A majority of fish processing workers are ethnic minorities. The former Coop contracts a company to bus in Asians and Hispanics (e.g., Puerto Ricans, Colombians, and Dominicans) from Providence to work in the fish houses.

### Fishing related organizations and their roles in the community and fishery

#### *Commercial fishing associations*

##### **Point Judith Fishermen's Cooperative**

Until 1994, the Point Judith Fisherman's Coop was a viable organization that provided marketing support to members. The marketing-purchasing organization of the Coop made it *"one of the most effective fishing cooperatives in the United States. Overcapitalization has been cited as the major factor in the failure of the cooperative, but other conditions such as poor prices and market conditions could have contributed to its demise."* The Coop has been purchased, and is now run as an independent fish marketing organization.

With enactment of the 200-mile limit in 1976, new entrants into the fishery were encouraged by inexpensive boat loans made available through the US Department of Commerce. This expansion of the industry pressured the Coop to put a moratorium on memberships. This was extended until 1986-87 when the Coop increased its processing capacity by moving into a new larger building. Yet during the Coop moratorium, other companies filled the niche created by the expanding industry, and by the time the Coop could accommodate the influx, there was little incentive for fishermen to join. The expansion of the Coop increased operating costs and, along with pressures from local and external (main market) competitors, contributed to its collapse in 1994.

The building and facilities of the cooperative have since been taken over by a fish dealer from out of state and now operates as the Point Judith Fishermen's Company.

##### **East Coast Fisheries Federation**

An important fishing organization based in Point Judith is the East Coast Fisheries Federation (ECFF). It is mainly a large boat organization extending from New Bedford to New Jersey. ECFF is partially supported by funding from local processors, and functions to keep fishermen abreast of important management issues. Funds are taken from fuel costs, with \$.3 cents from every gallon going to the organization, which ensures its existence even if there is a lack of interest.

According to the organization president *"most fishermen are issue orientated when it comes to joining organizations...so when the crisis is handled, the organization usually goes down the drain. Because there is a no hassle membership subscription with our organization, these vessels are ensured consistent representation and information from the stability of the organization funds."* The president claims he has never lost a member by default and sees a continuing solid base of participation.

**Rhode Island Seafood Council** was established in 1976 as a nonprofit, statewide seafood marketing association to promote top quality seafood and seafood products.

**The American Seafood Institute**, an offshoot of R.I. Seafood Council, was formed in 1982 for overseas promotion and export assistance programs. The Institute is a cooperator under the United States Department of Agriculture's Foreign Agricultural Service Market Access Program (MAP). Both generic seafood promotion overseas and assistance to individual company's marketing are undertaken. For example, the Institute works with the Maine Lobster Promotion Council and Maine Lobster Processors Association to promote overseas exports of "American lobster."

**The Bay Company**, the Rhode Island Marine Trade Education Initiative, was developed by the RI Seafood Council in 1999 to increase collaboration among educators and the various employers in marine-related industry. Not only is the program intended to ensure a qualified workforce for the diverse trades, but also to help employers improve their



productivity and economic viability.

**Rhode Island Commercial Fishermen's Association** formed in 2000 to "protect Rhode Island's first industry from becoming extinct by maintaining the commercial fishery in the State of Rhode Island as a way of life for present and future generations." The membership includes fishermen, dealers, suppliers and others. One of the goals is to reach consensus on issues, improve working relationships with state and local officials, harvest fish sustainably, obtain quota for Rhode Island fishermen, and have input in management regulations.

**Other associations:**

Rhode Island Lobstermen's Association  
 Rhode Island Inshore Commercial Fishermen's Association  
 Rhode Island Shellfishermen's Association  
 Ocean State Fisherman's Association  
 Rhode Island Commercial Rod & Reel Anglers  
 Ocean State Aquaculture Association

Fishing-related programs and services

*Other NGOs*

**The Point Judith Mission** initially helped fishing families in crisis with food and small loans. Over the years the emphasis moved towards helping fishermen and others with substance abuse problems. Today, some key respondents feel the Mission has lost its community orientation as a support resource for fishing families and in fact has retained little connection with the industry.

**The Coastal Institute** seeks to advance knowledge and solve problems in coastal ecosystems. The Institute partners with local, state, national and international agencies. One of its programs is the "Fish, Fisheries and Aquaculture Initiative focused on practitioners and scientists committed to sustainable use of living aquatic resources."<sup>22</sup>

**The American Seafood Institute** established in 1982, is dedicated to promoting seafood both to the American consumer and to international markets.

**The Narragansett Lions Club** started the "Blessing of the Fleet" in 1972 to honor the commercial fishermen and their families. They produced a brochure with participating boats' names and pictures, ran food and beer tents, and organized a road race. In recent years, there has been little participation by commercial boats and in fact, some have been disgruntled by the closing of the port for two days to prepare for and hold the road race.<sup>23</sup> Two members are currently investigating ways to make the ceremony again appeal to the commercial fleet.<sup>24</sup>

*Extension programs*

**University of Rhode Island's Sea Grant Program** has maintained strong ties to the industry, providing safety training courses, alternative fishing gear development (and outreach for gear research), development of markets for alternative species and more recently, aquaculture.

*Recreational fishing associations*

Rhode Island Saltwater Anglers Association

<sup>22</sup> <http://www.ci.uri.edu/partners.htm>

<sup>23</sup> Key respondent interview.

<sup>24</sup> *The Fishermen's Call*, Vol. 1, Issue 1, July 2001

## Perceptions of the Fishing Community<sup>25</sup>

### Importance of fishing to the community

The development of tourism in South Kingstown and a focus on offshore trawling has created problems for the few inshore draggers who wish to continue bottom trawling. Dock space is expensive and the commercial infrastructure cannot be expanded since it must compete with a growing recreational boat sector. The trend has been towards consolidation of infrastructure and a loss of “social” space as the surrounding area becomes gentrified. However, as one respondent noted, the fishing village atmosphere is what makes Point Judith attractive to tourists. “Without the fishing fleet it is only a ferry dock.”

### Boundaries

Most fishermen from this port live within a 20-mile radius. There is little residential housing near the port. Thus, there is no communal enclave of fishermen residences and fishing families are scattered throughout the small local communities of Southern Rhode Island, including Snug Harbor, Wakefield, and Narragansett. Although Point Judith does have a tradition in the fisheries, many of the people here have few family connections to the fishing industry. One key respondent suggested that the typical Point Judith fisherman is around 40 years old, has some college education, and came into the fisheries during the 1960's primarily for the lifestyle and financial independence afforded by the occupation. A statewide survey is currently being conducted that presumably will confirm or qualify this perception.

### Communication Issues

Key respondents indicated that they are often insulted by the way they are perceived and publicly portrayed by fishery scientists, that is, there is no perceived respect for their knowledge or experience as fishermen by those managing the resource.

Four government regulatory agencies are important to Rhode Island commercial fishermen, Atlantic States Marine Fisheries Commission (ASMFC) (managing herring with NEFMC), the New England Fishery Management Council (managing groundfish, monkfish, dogfish), the Mid-Atlantic Fishery Management Council (managing fluke, black sea bass, squid, butterfish, scup and bluefish) and Rhode Island Department of Environmental Management (DEM). The Rhode Island Fisheries Council, chaired by DEM's director, has the most influence on state fishery regulations.<sup>26</sup>

### Assessments

*“ . . . A lot of times the information that the National Marine Fisheries Service uses for their surveys is really off track, because of the limited amount of time and their methods—just not enough to come up with accurate numbers to base management on. And then with the politics that come into play between the different use groups and the different fishermen, things get distorted . . . ”*

*"Nobody knows better than the fishermen, nobody, without a doubt. For the amount of time that they put out there, there's nobody that has a better idea of what's happening within the fisheries than the fishermen themselves."*

### Local management practices

Lobstermen use the threat of violence to prevent people from taking lobster by scuba even though it is legal to do so. Violence is also possible when there are theft of catch issues

<sup>25</sup> Based on key informant interviews

<sup>26</sup> In June 2001, the Council became less significant because it became “advisory.”

(someone is suspected of taking lobsters from another's pots).

While there are no specifically allocated dock spots for trip vessels, a vessel whose owner has been in the port for a long time will have a regular space that people leave him whenever possible. This is only informally enforced by verbal retorts from "owner" or an "accidental" brush by his vessel.

### **Economic Change**

Respondents indicated that the lobster fishery in good shape now and was the same five years ago. Respondents were also hopeful for the future. *"Seeing lots of egg bearing lobsters this year, even small ones, believes in seven years there will be a great lobster catch."*

Other respondents believe that a gauge increase would hurt lobstermen financially. *"People are making a living, but a few are just squeaking by, they could go out if gauge increased."*

### **Fishing families**

Up to the end of the 1980's, the social reproduction of the fishery usually followed a father-son, uncle-nephew progression, that is, fishermen were related to each other patrilineally. Even though the history of commercial fishing is relatively short, the kinship ties of fishermen in this area are long-standing. Poggie and Gersuny (1978) found that 51 percent of fishermen active in 1971 had surnames found in the 1774 colonial census of the town, as contrasted with 28 percent of textile workers. This is predicted by the Natural Resource Community model, in which relationships to utilization of local resources, whether they be extracted through commercial fishing, farming, or for subsistence purposes, tie individuals to a location through the social and cultural value of a renewable natural resource extraction lifestyle.

Within the sample of fishermen there was some variation; 57 percent of lobstermen and 47 percent of trawl fishermen have surnames found in the colonial census.<sup>27</sup> From the 1971 sample, 73 percent of fishermen said they had one or more of their relatives in fishing, while only 16 percent reported one or more of their wife's relatives in fishing.

In 1978, among 116 members of the fishing cooperative, 18 surnames accounted for 47 percent of the members, while one family name, represented by three or more fishermen each, accounted for 32 percent of the members. Thus, patrilineal kinship ties have defined the social and occupational networks of local fishermen for generations. Even though the influence of kinship in recruitment has probably declined, a recent (1999) dockside intercept survey of seven boat captains found them working with a son and/or one other male relative as part of the crew.

Another significant change is that women are involved more as crew and dockside support than they were in the past, with at least one woman boat owner in the port. Another difference with the present fishing populations from the early 1970s is that there was an influx of first generation fishermen from URI and nearby communities that have no family history in the industry who got into fishing because it was an available option. Present recruitment, however, is at a standstill as limits on permits, well-established occupational networks, the end of the Fisheries Program at URI and high start-up costs inhibit new entrants to the fishery.

### **Interactions with recreational fishing industry**

Other issues include gear conflicts, area restrictions, and competition for resources with the recreational sector. Social conflicts noted by Poggie and Gersuny in 1978 have only

<sup>27</sup> Census of Rhode Island 1969:84ff

worsened since, and their description is apt: "Although they are circumspect in talking about them, commercial fishermen also have to contend with sports fishermen and pleasure boating enthusiasts as competitors in the social environment. Inshore pot lobstermen in particular view these groups as their enemies, as human predators who interfere with their livelihood. Pleasure boaters frequently violate the rules of the road and damage fishing gear, as well as compete for scarce dock space."<sup>28</sup>

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<sup>28</sup> Poggie and Gersuny (1978:48)

Community Profile  
Newport County  
Rhode Island Sub-region

## 5.2.2. Newport County

### 5.2.2.1 Jamestown

#### *Background*

Jamestown is a fairly exclusive island community with a mixture of high-priced and some modest real estate in the middle of Narragansett Bay. The community is characterized by scenic water views and a substantial port area dedicated to recreational boating and fishing. Jamestown has many tourist shops and restaurants to go along with historic buildings in a well-maintained waterfront district. Until the Newport/Jamestown Bridge was built, the link between the island and Newport was only possible by ferry, an exclusivity that many residents would have preferred to maintain. Now that the island can be reached by car, from the west and east, the downtown area and pier has become a focal point both for tourists and for Rhode Islanders wishing to spend a day at the beach or walk along its sunny waterfront. Despite a heavy emphasis on recreation and tourism, the location of Jamestown allows it to support a modest fleet of about 30 commercial fishing boats that work the Narragansett Bay and the nearby coast of Rhode Island.

Nevertheless, a heavier reliance on tourism and recreational boating by local residents has put pressure on the commercial fishing sector. In particular, docking space is now at a premium, seen as more valuable for recreational uses than commercial. Most of the town marina caters to regional and local pleasure craft, with 15 of the 16 docks reserved for recreational use. The last remaining commercial fishing space consists of one pier at the main dock. This is seen by city fathers as a hindrance to further recreational development.<sup>29</sup> An ordinance already exists that requires the commercial fishermen's vehicles to be parked away from the pier. This is a limiting factor that has isolated fishermen from the pier front and is seen by some as an attempt to push commercial fishermen completely out of the downtown area. Jamestown doesn't rank much higher than the small Sakonnet Point operation in fishing infrastructure differentiation, with a low rank of 27 and a factor score of -.406. Moreover, Jamestown ranks high on the gentrification scale, with a rank number of 11 and factor score of .667. This gentrification process is consistent with what is found in such other communities as Bridgeport (Connecticut) that are not obviously concerned about the survival of the commercial fishery.

The conflict over proper or best use of waterfront property is one found throughout New England. Some communities have chosen to safeguard waterfront access for water-dependent use including commercial fishing. However, this concern is not universal. Some communities have chosen to de-emphasize commercial fishing in their rush to cash in on what is viewed as a more lucrative industry, tourism and with it recreational fishing. However, conservation of what little docking infrastructure remains is essential if commercial fishing is to be sustained at even a modest level.

Given the marginal position of Jamestown's fishing industry, it is unlikely that changes will occur favoring the industry in either regulations or development. Developmental trends and the emphasis on water recreation and gentrification in Jamestown's economy suggest that the future of the present fishing population is uncertain. For comparison, even though there are numerically more commercial fishermen in Jamestown when compared to Sakonnet Point, Sakonnet Point, being isolated and with few tourist amenities, represents a stable state of total fishing capital. Jamestown has the potential for significant loss of total capital devoted to commercial fishing.

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<sup>29</sup> Key fisherman respondent, Jamestown

## *Fisheries Profile*

### Community

Most local fishermen (52 out of 62 or 83%) live within Jamestown proper. The others live in Narragansett or other enclaves a short distance from the pier.

### Commercial fishing and fisheries-related employment

#### *Harvesting structure*

There are approximately 30 boats that fish out of Jamestown. Most of them are docked in town but some of the lobster boats are docked at other locations in the town. Boats range between 16 and 40 feet, and include 12 wooden lobster boats, 15 small shellfish skiffs, and 3 dragnets (otter trawls).

#### *Employment (year-around and seasonal)*

According to a key respondent, at least 60 households are directly dependent on the commercial fishery. Using a multiplier of four to calculate the number of households indirectly dependent on the fishery, he estimated that there are about 160 households.

There is very little recruitment into the fishery, virtually no possibility for expansion, and those who pick up additional workers do so in the spring and summer, when extra help is needed sorting groundfish or hauling in lobster pots.

#### *Species, Seasonality*

Live caught fish and lobsters are premium products. Fishermen from Jamestown target a wide variety of local species. The groundfish targeted are: cod (offshore), flounders, fluke, dabs, winter flounder, yellowtail (offshore), hake, weakfish and gray sole (offshore). Small mesh fisheries include whiting and squid; pelagics targeted include herring and mackerel; crustaceans targeted are crab and lobster; other fish include swordfish and tuna along with striped bass, dogfish, skate, monkfish, tilefish, bluefish, conch, scallops, whelks, bass, scup, soft shell clams, quahogs, mussels and menhaden (for lobster bait). One niche fisherman collects rockweed on a part-time basis.

### Cultural role of fishing

#### *Ethnicity in the fisheries*

Though none of the fishermen are foreign born, many of their last names hint of a Portuguese or French ancestry.

## **Perceptions of the Fishing Community<sup>30</sup>**

### **Importance of fishing to the community**

Jamestown residents celebrate their recreational fishing and boating activities, and local marinas and Chamber of Commerce carry brochures touting these aspects of the dockside community. Despite the small size of its port, Jamestown has most of the amenities desired by tourists or boaters such as restaurants, marinas, diesel fuel, and retail lobster availability. But there are very few services that support commercial fishing. This is consistent with the local value system and its emphasis on the recreational boating sector. There is no fish dealer and both fish and lobster landed in Jamestown are trucked to other locations. Lobster bait is also trucked into the community.

Despite the relatively few people who depend directly or indirectly on the fishery, our key respondent thought that the fishery is very important socially, while economically (“a business point of view) it is only “slightly important.” Although commercial fishing is not a

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<sup>30</sup> Based on key informant interviews

prominent presence in Jamestown, some of the fishermen hold strong sentiments regarding their contributions to the local economy and culture.

### **Boundaries**

Commercial fishermen must rely on those communities that support larger commercial fishing operations, such as Newport and Point Judith, for almost all supplies unique to the industry. However, there is one locally produced commercial fishery vessel product (fasteners for wooden boats) that serves the needs of lobster and shellfish fishermen operating wooden boats in the Bay.

The location of Jamestown in Narragansett Bay shapes the centrality of community contacts and capital flows, and contributes to the regional aspect of local fishing communities in Rhode Island. A key respondent pointed out that with Newport just across the bay and Point Judith no more than 20 minutes away, fishing supplies are easy to access. The communities people have the most contact with are Newport and Providence, followed by Point Judith. Moreover, the choice of whether to go Newport or Point Judith to find the supplies or buy them in Jamestown is often a matter of personal choice rather than necessity.

### **Where do people go to do the following things?**

Sell Fish	Newport/Point Judith
Offload Fish	Newport/Jamestown
Buy Fishing Gear	Pt. Judith
Buy Ice	Pt. Judith
Buy Fuel/ Oil	Jamestown
Haul out Boat Repairs	Jamestown/Providence/Wickford/Point Judith
Bookkeeping	Jamestown
Banking	Jamestown
Shopping	Jamestown
Go to church	Jamestown
Got to school	Jamestown
Go for Health Care	Jamestown/Newport
Go for Childcare	Jamestown
Visit Relatives	Rhode Island
Visit Friends	Rhode Island
Go for Vacation	Florida/New Hampshire
Go for Recreation	Warwick
Socialize	Jamestown

### **Communication Issues**

A key respondent described the harbormaster of Jamestown as "energetic and doing an excellent job." Communication with local and state officials is "very good." It is important to note that there is no stratification between local and state officials as Rhode Island is managed on a statewide level. Communication with federal fishery managers is considered "poor."

Despite the relatively positive responses to questions about communication with everyone except federal managers, in cases where conflicts have arisen, they have resulted in court cases. Litigation by individuals and communities in addition to increasing enforcement cases was said to have made the fishery in this sub-region very litigious. For example, there

are four current (1997) cases mentioned by one key respondent.

Some respondents in Jamestown also take issue with the New England Fishery Management Council, whose authority is limited to making regulations on size, numbers of fish, methods of harvest and season. They question the Council's right to designate which people will take the resource, "*if anglers can take it why cannot the commercial fishermen as well compete for that resource?*"

### **Economic Change**

On a one to five scale, ten years ago fishing was rated as "good": "*It was an open fishery, if you worked hard, you could make money.*" Five years ago, fishing was considered "fair," "*but you could see the government coming.*" Today, fishing is rated as "poor." This elicited no comment, perhaps attesting to how bad the fishing has become. Five years from now was also given a "poor." According to the key respondent, "*I can't see how it will be different, even worse.*" Life has definitely not gotten better during the last five years. "*It is harder to make a living these days.*" The cause of this, according to the key respondent, "*is the government, they screwed it up, fishermen are easy to control.*"

#### Economic Condition of the Fishery

Ten Years Ago	Good
Five Years Ago	Fair
Today	Poor
Five Years from Now	Poor

### **Effects of recent management**

Recent fishery regulations that are said to be having the most impact are the numbers of regulations and limited entry. "Limited entry provides protection in the short term but limits access and competition. Those with the money end up controlling the fishery and tend to act like corporations after 20 years of the status quo. The government has created this attitude of self preservation and greed."

One respondent cited government intervention in the fisheries as one of the most significant changes in the fishing industry. His suggestion to the government is "keep it simple—simple regulations. Complex regulations need effective enforcement. Ineffective enforcement makes the playing ground more uneven, which then calls for more complex regulations, creating a vicious cycle of regulatory layering that creates a difficult paperwork burden for those who fish."

He also labeled technology as the other most significant change in the industry. This, unlike the former change, was seen for both its negative and positive changes and contributions to the industry. Safety has been traditionally seen as a very positive aspect of technology. Some "have viewed technology like GPS and Fish finders as the devil that did in the fish while others have likened it to David and Goliath, equalizing the fishermen with the sea."

### **Characteristics of local fishermen**

#### *Job satisfaction*

When asked if local fishermen are satisfied with their work, a key respondent stated that "nobody fishes if they didn't want to, they must prefer that to other things." This is a sentiment that has been shared by many of the fishermen. This is especially pertinent in



Jamestown compared to Downeast Maine, where there are few options outside of fishing, and many young people who chose not to fish outmigrate from the area. Jamestown, being close to Newport and Providence offers fishermen a plethora of marine and non-marine related jobs should they choose not to fish.

### **Fishing families**

Fishing in Jamestown was said to contribute 25 to 100% of fishing households' incomes, with an estimated average fishing contribution of 60 percent. Spouses contribute to the household through second jobs and by assisting with the paperwork burden. As noted, there is no economic motivation for young people to enter the fishery especially since many other options are available in nearby communities such as Providence and Newport. It is unlikely that many local people will enter the fishery as it is not promoted as the "thing to do" with one's life. This mirrors opinions expressed by fishing operators in Connecticut, who noted that the easy access to indoor jobs requiring little physical labor makes commercial fishing unattractive to most youth.

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### 5.2.2.2. Newport

#### *Background*

Newport is a historical port dedicated to tourism and recreational boating but with a long and persistent commercial fishing presence. Before the development of the docking facilities at Point Judith, Newport was the center for fishing and shipping in the state. In 1971, 57 percent of all commercial fisheries landings were in Newport, but Point Judith surpassed Newport in importance by 1973, and now is the dominant commercial port in the state.

Tourism in Newport started as far back as the 1700s. Visitors included southern plantation owners who stayed in Newport to escape the heat of the summer. By the 1830s, tourist hotels began to dominate the shore side landscape. The famous "cottages" of Newport where built by industrialists seeking to outdo each other in ostentatious displays. The present tourist economy is centered on year round activities with the highlights being summer and sailing events. The Americas Cup races were regularly held in the area, attesting to the importance of the pleasure boating industry.

The period from 1800 to 1930 saw the development of the indigenous (bay and inshore) fleet. Fishing effort was concentrated on stocks that could be reached in a day, fished, and then landed. Most fish, with the exception of menhaden, were taken in floating fish traps. This was also the period when industrial fish was a major component of the economy. For example, in 1889 in Newport and other Rhode Island ports, fish reduction plants for menhaden, and fish drying operations for cod and other groundfish, processed 127 million pounds of fish, 89 percent of which were menhaden (Olsen and Stevenson 1975:53). This fishery collapsed in the 1930s, and the fishery transitioned towards groundfish trawling. During the 1920s, marine diesel engines effectively extended the range and fishing time of commercial groundfishing vessels using otter trawls.

Beside tourism, the East Bay Navy base has a major economic impact in the area. The base employs thousands of local civilians in service roles. The service industry also caters to a large retirement community. Many naval personnel familiar with the area from their attendance at the local War College or at the command schools select Newport for retirement. They bring money into the community with their retirement pensions and they contribute to the support of many service-oriented businesses as significant consumers.

#### *Demography*<sup>31</sup>

##### Population

According to the 1990 Census, the city of Newport had 28,227 people, 13,724 male and 14,503 female.

##### Education

For those 25 years and older in 1989, 2828 had not graduated from high school, 5024 were high school graduates, 4230 had some college and 5728 had a Bachelor's or higher degree.

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<sup>31</sup> <http://venus.census.gov/cdrom/lookup/984169169>

Housing

Of the 13,094 housing units in 1989, 4,647 were owner-occupied, 6,539 were rented and 1,898 were vacant. The median year structures were built was 1939 and the median value of housing units was \$153,300.

Racial and Ethnic Composition

The majority of 1989's population was white (25,136) with 2,215 Black, 144 American Indian/Eskimo/Aleut; 310 Asian and 422 "other."

For those who speak languages other than English at home, Spanish, French, Portuguese, Greek or German were the most frequently spoken.

*Economic Context*Income

The median household income in 1989 was \$30,534; per capita income was \$16,358.

Employment

## INDUSTRY

Universe: Employed persons 16 years and over

<b>Agriculture, forestry, and fisheries (000-039)...</b>	<b>291</b>
Mining (040-059)...	0
Construction (060-099)...	812
Manufacturing, nondurable goods (100-229)...	216
Manufacturing, durable goods (230-399)...	810
Transportation (400-439)...	347
Communications and other public utilities (440-499)...	224
Wholesale trade (500-579)...	225
Retail trade (580-699)...	2953
Finance, insurance, and real estate (700-720)...	653
Business and repair services (721-760)...	685
Personal services (761-799)...	832
Entertainment and recreation services (800-811)...	256
Professional and related services (812-899):	
Health services (812-840)...	1099
Educational services (842-860)...	1280
Other professional and related services (841, 861-899)...	1317
Public administration (900-939)...	899

## OCCUPATION

Universe: Employed person's 16 years and over

Managerial and professional specialty occupations (000-202):	
Executive, administrative, and managerial occupations (000-042)...	1769
Professional specialty occupations (043-202)...	2331
Technical, sales, and administrative support occupations (203-402):	
Technicians and related support occupations (203-242)...	436
Sales occupations (243-302)...	1488
Administrative support occupations, including clerical (303-402)...	1805
Service occupations (403-472):	
Private household occupations (403-412)...	126
Protective service occupations (413-432)...	377
Service occupations, except protective and household (433-472)...	2330
<b>Farming, forestry, and fishing occupations (473-502)...</b>	<b>316</b>
Precision production, craft, and repair occupations (503-702)...	1185
Operators, fabricators, and laborers (703-902):	
Machine operators, assemblers, and inspectors (703-802)...	380
Transportation and material moving occupations (803-863)...	210

Handlers, equipment cleaners, helpers, and laborers (864-902)...

146

### *Hospitals, schools, libraries*

Museum: Fishermen's Church Institute

### *Fisheries Profile*

#### Community

Fishing has always been an integral part of the local economy, although not of the stature of tourism and other components.<sup>32</sup> It does not make much sense to talk of the degree of community "dependency" on fishing in Newport, for the existing "community" could do quite well if commercial fishing disappeared altogether. A different perspective is to think of the fishing "community" as a regional contributor to the commerce associated with fishing, and as a means of providing support to approximately 200 families with a sustainable livelihood while they contribute a high-quality food product to the commerce of the region and nation.

#### Commercial fishing and fisheries-related employment

##### *Harvesting structure*

Newport's groundfish fleet has dramatically declined over the last twenty years. The decline has been spurred by increasing property values restricting fishing industry infrastructure in addition to competition with recreational vessel for limited wharf space. No new boats or new shoreside fishing businesses have come into the fishery in the last twenty years. The local waters of Narragansett Bay are overfished, and nearshore grounds off the coast and nearby Block Island experienced significant declines in groundfish. Factors forcing a decline in groundfishing are not recent, but has been ongoing for some time. In 1981, Bort writes:

"The general direction of the community's development does not bode well for the future of fishing. Neither tourists nor pleasure boaters are typically enthusiastic about sharing a harbor with commercial fishermen. The stereotypic grizzled old man handlining from a dory is romanticized. The modern steel trawler is viewed as a source of odor and noise and as competition for space. The fishing industry is far down on the list of economic inputs to Newport, and probably also on the community's list of priorities" (1981:89-90).

Bort was correct in this prediction. There is still a degree of prejudice by the Newport community against commercial fishing and the fleet has declined dramatically.<sup>33</sup> In 1977, 164 boats made landings in Newport. Of these 49 were from Newport, 45 from New Bedford, and the remainder from as far north as Gloucester and as far south as Virginia.<sup>34</sup> In 1978, only 91 of these vessels had returned to Newport.

##### *Processing structure*

One processor processes lobster meat in addition to buying and selling lobster. They also own a fish trap that provides product for boxing and shipping.

##### *Support Services*

Newport has one of the best natural harbors on the Northeast. It provides excellent protection from rough weather, and is deep enough to provide berthing for US naval vessels. There is only one wharf area that is presently used by fishermen. It is leased by the state from the Newport Shipyard Company. This stone-filled wharf is adequate to service the 20 vessels that regularly land groundfish in Newport. In 1981, major fish buyers included Anthony's Seafood, Aquidnick Lobster Company, and Parascandola and Sons.

<sup>32</sup> The history of the fishery and its state up to 1981 was described by Bort (1981)

<sup>33</sup> Key respondent, Office of the Harbormaster

<sup>34</sup> William Murphy, National Marine Fisheries Service, Newport, RI

Anthony's is no longer in business, and Parascandola markets all groundfish landings that come into Newport. Finfish is not sold or processed locally, but ice packed and sent by truck to Boston, New York, New Bedford, and markets south. Decisions about where to ship the fish are based on equitable pricing and demand. The Eastern Ice Company located in Newport supplies ice to these firms. The Tallman and Mack Company, that operated fish traps between April and November out of Newport, is no longer in business.<sup>35</sup>

In 1996, the number of multispecies permits held by Newport commercial vessels was 16, with a total of only 20 vessels landing groundfish in the port. Of these, only 2 fished in the bay, and another 2 fished in nearshore waters, with the remainder fishing 7-10 day trips on grounds north and south of Rhode Island. Using the 1981 figure of 91 vessels as a benchmark, this represents a 78% decline in commercial fishing vessels landing in Newport over a fifteen-year period. Similar declines have been reported in Gloucester and New Bedford.

The greatest decline has been in the indigenous, or bay and inshore fleet. After WW II, the Newport fleet consisted of 20 vessels. In 1981, this number was down to only eight, and in 1996, only four. Declines in nearshore stocks, pollution impacts, competition with stationary gear, and area closures have made inshore groundfishing more difficult. Overall, the Newport fleet is more dependent proportionately on groundfish than the more diversified fleet fishing out of Point Judith. All of the vessels are essentially groundfish fishing, with some having the capacity and permits to fish squid (*Loligo*) as needed in order to maximizing the benefit of days at sea limits.

Docking Facilities: Lobster boats tie-up at State Pier 9 and large draggers and scallopers tie-up at Parascandola's. The Department of Environmental Management currently runs State Pier 9 though there is some indication that the Economic Development Corporation might take over. The majority of respondents indicated that fishermen do not trust EDC and fear that their take-over would result in increased tourism and cruise ships. Point Judith fishermen express this same rumor and fear about their dock.

#### *Employment (year-around and seasonal)*

Newport has 40-50 operating boats, about 75% of which are lobster boats. With the exception of a couple of eastern rigs, the rest are stern draggers.

Approximately 200 families are directly dependent on fishing and another 100 are indirectly dependent

#### *Sales/revenue*

Newport is comparable to Boston, Massachusetts in the level of landings and their value. In 1998, 8 million pounds worth \$8.2 million was landed and in 1997, 8.1 million pounds worth \$7.6 million. This was a major drop from 1996 when 18 million pounds were landed worth \$12 million.

Costs related to lobstering: 3' traps are \$38 ea. 4'X6' traps cost \$50-60 ea. Float line costs \$60/coil (one ten-trap trawl), and a sink line costs \$80-90/coil.<sup>36</sup> *"The difference matters because you must have scope on your line. You use a float line for the 5-6 fathoms next to the trap, to keep it off the bottom. If you use a float line higher, it can kink into loops which catch animals."*

#### *Species, Seasonality*

Landed species include:

Groundfish: cod, flounders including yellowtail and grey sole, haddock, pollock, and hake  
Small mesh: whiting, squid

<sup>35</sup> Reported by Bort (1981) and photographed in 1935 by Captain Wilfred E. Warren. Warren's photo collection is maintained by the Seamen's Church Institute Archives in Newport.

<sup>36</sup> A coil = 1200 feet of line.

Pelagics: herring, mackerel

Crustaceans: lobster, crab

HMS: swordfish, tuna

Other: striped bass, dogfish, skate, monkfish, bluefish, tilefish, sea bass, scup, and weakfish. Sturgeon occasionally caught but can't be kept.

Other shellfish: conch (Bristol area), softshell clams, mahogany clams, quahogs, scallops, sea bass, slime eels, menhaden (less now).

There's no aquaculture, though there used to be a mussel farm.

Gillnetters have a live fish fishery catching sea ravens and sea robins that they ship to Japan.

#### *Recreational fishing and employment*

Recreational fishing: stripers, blues, black fish. All rod and reel. There is one individual who takes tourists surf casting, provides gear, picks them up, takes them to the right spots.

Mostly rod and reel individuals fishing from shore for stripers.

#### Fishing related organizations and their roles in the community and fishery

##### *Commercial fishing associations*

Ocean State Fishermen's Association

Rhode Island Fishermen's Association

Mass. Lobstermen's Association (many RI members for insurance, etc.)

Rhode Island Lobstermen's Assoc.

State Pier 9 Association

Atlantic Offshore Fishermen's Association

##### Fishing-related programs and services

Seamen's Church Institute—brings soup around to the docks for workers and fishermen.

Rhode Island Seafood Council—(See page 83).

## **Perceptions of the Fishing Community<sup>37</sup>**

### **Importance of fishing to the community**

Importance of fishing to Newport was said to be "not important." "State Pier 9 would be excellent real estate for tourist uses. It's the last big piece of harbor real estate that is undeveloped." "They don't need us anymore." It would hurt, respondents commented, but not devastate, Newport's economy if fishing stopped.

### **Boundaries**

Middletown, followed by Jamestown, Portsmouth and Tiverton (equally), is the community Newport fishermen have the most contact with. In addition, the proximity to New Bedford allows access to fishery services not available in Newport.

### **Where do people go to do the following things?**

Sell Fish	Newport, Middletown, Fulton's (NY); New Bedford, Portland, Boston (depends on prices)
Offload Fish	Newport, trucks at pier
Buy Fishing Gear	Middletown, New Bedford, Pt. Judith, order from Maine
Buy Ice	Newport

<sup>37</sup> Based on key informant interviews

Buy Fuel/ Oil	Newport, Middletown (trucked in)
Haul out Boat Repairs	Portsmouth, small boats Newport, large boats New Bedford
Book Keeping	Home
Banking	Newport
Shopping	Newport, Middletown in summer
Go to church	Newport
Got to school	Newport
Go for Health Care	Middletown clinics, hospital Newport
Visit Relatives	"This is an island community, they don't drift too far. A lot of extended family still around." Nationally
Visit Friends	"insular community" People "don't go anyway" Nationally
Go for Vacation	Florida, tropical islands
Go for Recreation	Boating
Socialize	Home or bars

### **Communication Issues**

There was no consensus among respondents about how well fishermen and managers communicated. Answers ranged from “very good” to “fair” for all three levels of communication. One respondent who rated communication as “good” noted that “fishermen aren't very communicative, but it is tough having a bunch of "desk-jockeys" determining your fate.” Another noted that fishermen had good rapport with the state Department of Environmental Management, but that “regulations are years in the making and changing.” Another mentioned that the department is huge, the scientists not considered knowledgeable and the web site is not kept current on fisheries-related topics, issues or meetings.

One respondent said, “federal laws impacting you now were decided years ago and take years to change.” One rated communication as fair, commenting that state communication was effective for some, not for all and the federal managers were “paper pushers.”

### **Assessments**

Asked whether fishermen and scientists agreed or disagreed on stock assessments, the respondents also varied in their opinions, though most either said they “disagree” or partially disagreed. One respondent claimed that fishermen agree with any plans not affecting them personally.

### **Local management practices**

For lobstering there is a form of folk management. This was described as a “gentlemen's agreement” on lobster trap areas and dragging areas. The fishermen actually exchange charts and mark areas to avoid gear conflict. There is agreement on which directions trawls will be laid (ne-sw out, n-s inshore). Sticks on endfloats are set in front, 15+ trap trawls have a middle float without a stick. Ninety-nine percent of the fishermen follow the norms. However, this is less true inshore (“*inside it's not as well done*”). One respondent noted that Clorox bottles line the shipping lanes near Newport. Many lobstermen use them instead of buoys with their colors.

*“Fishermen are surprisingly cooperative with legislated laws. They know in the end they're saving their own industry.”*

### **Economic Change**

The economic condition of the finfish fishery ten years ago was reported as “excellent.” Five years ago it was “average” and today it is considered “fair.” Costs have increased, days at sea have decreased. Five years from now it was anticipated that the economic condition would be “fair.” *“People who have stayed in industry this long have it down to a science as far as staying steady.”* Worrisome though is that the worth of a dollar is down and the unknown impact of the oil spill.

For the lobster industry, ten years ago the economic condition was considered “good” to “average.” More lobsters were said to have been caught especially offshore, though local catches were down. Oil spills may be partly responsible for declines. In general though it was considered a “good way to make a living.”

Five years ago, the condition of the industry was “fair” according to some respondents. Offshore boats were leaving, but there were more pots in the water. Today the economic condition is considered “poor,” the catch has been reduced, particularly in terms of catch per unit. *“I have ten times lower catch per effort than my father took in the 40s.”* The boats have to go further out, standards of living are lower, and “we’re being squeezed out by yachts.” Increases in the numbers of traps also means higher costs. Five years from now though, the condition was anticipated as “good.” *“If the licenses are limited and trap limits enforced it should be better.”*

An alternative view maintained that five years ago the economic condition of the lobster fishery was “good” mainly because prices were climbing. Today, it is also “good” according to this viewpoint because technology is *“squeezing the middle man out of market. Trucks meet the boats at their dock and take fish to Boston. This increases the boat price, and consequently decreases wholesale price.”* Furthermore, with so many fewer groundfish more lobsters are maturing (lack of predation on young). Five years from now, the conditions could be “good.” The lobstermen’s biggest fear right now is focused on a new hotel complex and boatyard surrounding the state pier. The boatyard was bought out by yachting interests. Since the pier is being taken over by a different government body (EDC from DEM) fishermen fear that they will lose fishing access. Already fishermen can no longer store traps or other gear there and they believe they are gradually being pushed out. *“Loss of the pier would end fishing in Newport, unfortunately, since there’s still a living to be made.”*

The standard of living for the general population has gone down according to some respondents. The public school quality dropping, all rich children are sent to private schools, so the rich fight any increase in school expenditures. The large poor constituency is losing out. Only 75 out of 300+ high school graduating class got into college.

### **Changes in fishing effort**

Respondents noted that they are “having to work harder for less money (trips remain the same length, but the catch is smaller. Technology has improved, but has reduced the skill or mystery of fishing. On the other hand, it has also reduced some of the risk. Other changes include the fact that the price of fish is up; people are changing the species they are willing to eat.

Many lobster fishermen leave pots in the water even in seasons they don't catch, just to hold the bottom for the next season. Therefore, they can have many non-fishing traps in the water at any given point, but only bait the traps that are catching. Thus, they don't move traps around seasonally. New escape vents are 1 15/16 inch. It is anticipated that some legal size lobsters will escape through those vents.

### **Effects of recent management**

The regulation with most impact may be HACCP, “a big complicated way of explaining what you've always had to do to keep things fresh.”



"We have size limits, but we haven't figured out how not to catch the wrong size. We're still killing fish, so what has been accomplished?"

### **Characteristics of local fishermen**

Harvesters are usually full-time in one fishery, though they may occasionally trip on another's vessels.

A good fisherman is someone whose attitude is not to worry about what can't be changed, who will work alongside a deckhand, being on-time for crew, paying crew on-time, and not taking advantage of people down on their luck.

#### *Safety*

Fishing is safer. More survival gear is required, more state of the art technology both for gear and communications.

#### *Job satisfaction*

Opinions varied about fishermen's job satisfaction. Some said fishermen are dissatisfied because of the regulations: records required, fishing day limits, licensing by area. Some like trap limits, some don't.

Others said yes, fishermen are satisfied. "*Grumble and complain, but return year after year. Majority enjoy it. An instant gratification job. Some fish because they lack other skills.*"

"No such thing as a satisfied fishermen." Most wouldn't do anything else though. With all these regulations driving everyone crazy, prices have been pushed higher and making most money ever. Even though there's less fish, less work, less time and more aggravation they're still making a good living.

### **Fishing families**

Most spouses work full-time outside of home in order to obtain health and other benefits for their family (most are nurses and teachers), some homemakers.

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### 5.2.2.3 Tiverton

Tiverton is located northeast of Newport. It is the first fishing town you go through as you work your way down south from the intersection of 24 and 77 towards Sakonnet Point. Although small, it is an active fishing village.

#### *Fisheries Profile*

##### Community

Tiverton fulfills the definition of a fishing community on the basis of central place theory. Fish are legally sold ex-vessel to a dealer, processor or the public; fishing support services are provided; there are public facilities providing dockage; fishing people satisfy their daily and weekly social and/or economic needs here, and some fishermen and their representatives participate in fisheries resource management.

##### Commercial fishing and fisheries-related employment

##### *Harvesting structure*

The fishermen living in this community utilize the shellfish and finfish resources located right in Narragansett Bay, to support themselves and their families. There are anywhere from 122 to 150 lobster boats, 12-15 conch boats, and 16 finfish vessels. Of these about 4 are wooden, 12, steel and the rest, fiberglass.

The relatively small fiberglass vessels are practical for traditional shellfishing (lobstering) as well as conch fishing, a niche fishery in Tiverton. The gear used includes for shellfishing, bull rakes, tongs, scuba and dredge; for crustaceans, lobster pots and crab traps; and for finfish, gillnets, longlines, and trawls (dragnets).

##### *Wholesale dealers*

The town has 7 wholesale operations which are; Bayside Shellfish, Rhode Island Clam Co., Pt. Judith, Baystate, Bridgeport Seafood, Pt. Trap Retail, and Nordstrom. Out of these 7 wholesalers half of them also participate in retail operations. Including these whole/retail operations there are approximately seven retail fish markets. Quahogs and shellfish are the main species that are dealt with in Tiverton. Bayside Shellfish and RI Clam Co. deal exclusively with shellfish and lobsters. Nordstrom deals with lobster and fish and the remaining wholesalers deal with a variety of fish and shellfish species.

Little of the shellfish is sold locally, rather it is bagged and shipped by refrigerated truck to either Boston or New York where it is distributed as far west as Nevada and to various points in Canada. The small "ones" are sold by the piece and the larger "ones" are sold by the pound. Most of the product is sold to specific states on a regular basis. Boston serves simply as a hub on the shipping route. Distributors in the area own their own refrigerated trucks for shipping. One respondent's wholesale facility has a number of trucks, which originate their parent company. Another respondent's wholesale facility owns 2 trailers, 1 tractor, 3 small trucks, and 1 van. Despite the condition of the fishery, the wholesalers have grown and diversified. One respondent's company buys from 20-25 boats daily, about 150 boats a week. Another respondent's company has grown and diversified and buys from approximately 40 boats a day. The business although friendly, is highly competitive, but in the end the wholesalers will buy and sell from each other in order to keep the fresh product moving.

##### *Support Services*

Although Tiverton has a large fishing community, they do not have a commercial marine

supplies facility. Many commercial fishermen from this town go to New Bedford or Newport if they need gear or boat equipment.

The town does have its own icehouse, numerous haul out facilities, two ramps, gas and diesel fuel accessibility, a airfill station for divers and dock facilities used for both berthing and offloading of shellfish and finfish.

*Employment (year-around and seasonal)*

The fishing industry is the main source of employment for Tiverton residents. Other jobs found there may include those in the gas and oil business and others that are small scale and part time located in the service sector. The majority of Tiverton residents either work in the fishing industry or commute to jobs outside of the town of Tiverton. However, fishing has become increasingly difficult, due to regulations and poor stock conditions, forcing some to fish part-time, working in labor jobs outside of town, and others to get out of the business entirely.

*Species, Seasonality*

One natural factor that can affect everyone in the shellfish business is heavy rain. Since the beds the fishermen are using are located within Narragansett Bay, they can easily be affected by pollution runoff caused by rains. Only 1/4 to 1/2 inch of rain can cause certain beds to be closed for at least 7 days.

Landed species include:

Shellfish: hardshell clams (quahogs), little necks, softshell clams, mussels, periwinkles, oysters, conch

Crustaceans: lobster, crab

Finfish:

Groundfish: cod, flounders including fluke, dabs and winter flounder

Pelagics: mackerel, herring

Small mesh: squid

Other: weakfish, striped bass, dogfish, skate, monkfish, bluefish, sea bass, and scup

Recreational fishing and employment

In addition to the commercial fishing out of Tiverton, there is a lot of recreational fishing as well. Narragansett Bay has a wide array of fish, and is easily accessible by both land and water, through Tiverton. There is one bait shop that deals exclusively with recreational gear, bait and accessories.

Cultural role of fishing

*Ethnicity in the fisheries*

Lots of the people who participate in recreational fishing in Tiverton are Cambodian or have other ethnic backgrounds. Some of this "recreational" activity may actually support a fisheries- based subsistence life style.

*Kinship & family*

The numbers of households in Tiverton that rely on commercial fishing is relatively high, and may even come close to 40% of the total number. These households are largely comprised of people who were born in the town and have continued to live and raise families there.

## **Perceptions of the Fishing Community<sup>38</sup>**

Importance of fishing to the community

Fishing is important to Tiverton.

<sup>38</sup> Based on key informant interviews

### **Boundaries**

Capital contacts can be divided up into those encompassing social capital (e.g., visit friends, go for recreation, go for vacation, visit relatives, socialize, go to church); economic (e.g., sell fish, offload fish, buy fishing gear, haul out for boat repairs, go to the bank, go shopping), and human (e.g., go to school, go for childcare, go for health care, go for retraining). The majority of outside social contact of Tiverton residents with other communities is with Newport, Warren and Bristol.

Sell Fish	Tiverton
Offload Fish	Tiverton
Buy Fishing Gear	New Bedford/Westport/Newport
Buy Ice	Tiverton
Buy Fuel/ Oil	Tiverton
Haul out Boat Repairs	Large boats-Providence/Newport
Book Keeping	At home
Banking	Tiverton
Shopping	Tiverton, Fall River
Go to Church	Tiverton
Got to School	Tiverton
Go for Health Care	Tiverton, Fall River
Go for Childcare	Tiverton
Visit Relatives	Tiverton
Visit Friends	Tiverton
Go for Vacation	Maine
Go for Recreation	Rod & reel fishing
Socialize	Newport/Narragansett/local bars

### **Communication Issues**

Communication between fisherman and fishery managers had mixed reviews, though was most frequently rated as "fair" at each level. Respondents did complain that information was basically "one-way." Communication with local level managers or representatives was rated as "poor" to "fair." Communication with state and federal level managers or representatives was "fair" to "good."

### **Assessments**

Fishermen and scientists do not appear to agree on the assessment of stock conditions. When asked how well fisherman and scientists agree on a 1 to 5 scale (1 strongly disagree, 2 Disagree, 3 Agree, 4 Strongly Agree) Respondent #1 rated it a 2, and Respondent #2 rated it a 1 saying that fishermen are hands on while scientists are more book knowledgeable.

### **Economic Change**

Economic condition of the fishing industry ten years ago was rated as "good" to "average." Five years ago it was rated as "average," today was rated as "fair" to "good" and five years from now is anticipated to be "fair."

One respondent indicated that in the past the economic condition of the fishery was better than it is now primarily because the laws were not as strict and the stocks were good. He felt that now stocks are down and laws are getting stricter, resulting in added strain on the fishing industry. For the future he feels that the conditions will probably not get much better than they are now. Another respondent indicated that in the past the economic conditions of the fishery could have been better and have been steadily declining over the years. Although he did feel that due to good weather and cyclical patterns, this year has been good (1998). However, he feels that there is too much uncertainty to predict the future but suspects that the conditions will continue to steadily decline.

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Rhode Island Sub-region

### 5.2.2.5. Sakonnet Point

Sakonnet Point is the most easterly and isolated fishing port in Rhode Island. It sits at the very end of the eastern peninsula of Rhode Island across the bay from Westport, Massachusetts. The existing site of Sakonnet sits on a narrow spit, with little land available for either expansion of fishing facilities or gentrification. Nor is there much support in the local ethos for any expansion. As one respondent said, "We want to keep the 'little' in Little Compton (the township)." The river runs up into the bay next to Sakonnet Point, and has been the source of targeted seasonal fish schools since colonial times. In the narrows of the river, fish traps were set to take advantage of this natural fish concentration. Permits and sites for present fish traps go back to colonial times. Today, the tradition is continued with the Parascandola Fish Company, who own a series of fish traps that they tend from May through October, when fish concentrations are common in the river. The use of fish traps is one of the specialized niche fisheries in New England that occurs under conditions where other competing fisheries have not wiped them out. Today, similar fish weirs (but staked, rather than floating fish traps) are only used in a few other spots on Cape Cod and in Downeast Maine.

Overall, Sakonnet Point has a fishing infrastructure ranking of 33, with a negative factor score of -1.466. Although there is little to the fishing operation, there is virtually nothing else besides this, making it a singular, albeit small-scale, total capital operation. Because the local township likes to keep development down, little has happened here to transform the area. No local hotels, bars, restaurants or other such development grace the area, and the road into the point is lined with well-established homes separated by considerable green space.

Besides the fish trap operators, a small collection of combination lobster-gillnet fishermen works out of the port. They form the Sakonnet Point Fishermen's Association. Facilities in the port and nearby village include churches, Tallman and Mack Fisheries, Parascandola Fisheries, and Sakonnet Lobster. Sakonnet Lobster, about a half-mile north of the point, boasts a considerable collection of lobster traps, a lobster tank, and supports a local regional, and international market, with the smaller "chic lobsters" (1/3 lb.) sold in Canada.

A small movement towards gentrification is occurring with the planned opening of the Sakonnet Point Club, a restaurant that would service local recreational fishermen. This goes along with a small charter boat fishery. The key word for this town is "small." However, the fishery activity is stable at its present level. The Parascandola operation, building on the long local history of trap fishing, has been successfully fishing here since 1965, and they have no reason to discontinue their present operations.

Bristol County, Massachusetts  
New Bedford / South Shore Sub-region

### 5.3. New Bedford/South Shore Sub-region

#### Bristol County

##### *Background*<sup>1</sup>

Bristol County's New Bedford and Fairhaven, along with Portland, Maine are the premier fishing ports in the New England NRR. New Bedford's highly differentiated fishing infrastructure was developed early in its history and has continued to grow. Once largely devoted to the whaling industry, the city's maritime interests turned to the harvesting and processing of finfish and shellfish in the late 1800s. New Bedford/Fairhaven seems to have weathered the latest downturn in fisheries and is now thriving on the resurgence of the scallop industry. This economic boom has had a positive effect on the whole county.

The first recorded visit to what is now Bristol County by a European was that of adventurer and explorer Bartholomew Gosnold who landed in 1602 on Cape Cod, the Elizabeth Islands and the coast of Buzzard's Bay.<sup>2</sup> Fifty years later (1652) "thirty-six settlers join together and purchase a parcel of land — encompassing what is now New Bedford, Acushnet, Fairhaven, Dartmouth and Westport — from Massasoit, Grand Sachem of the Wampanoag, and his son Wamsutta. The entire area was named Dartmouth and incorporated in 1654."<sup>3</sup>

Dartmouth was almost destroyed during the King Phillip War (1675-6) when Metacomet fought Europeans in Massachusetts in response to thefts of Indian land, treaty violations and other mistreatment. Only a few outlying homes and the home of John Russell survived. However, the loss of the war by the Native Americans ended the Wampanoag Federation.

In 1699 the Society of Friends (Quakers) organized the first ecclesiastical body in old Dartmouth. A year later, the Russell family effectively founded New Bedford with land purchases along the Acushnet River and the overlooking heights, and with subsequent planning and development, in particular by Joseph Russell III.

Ten years before the Revolutionary War, Nantucket whaling merchant Joseph Rotch purchased ten acres of land from Joseph Russell III and moved his business to New Bedford. Bringing experience, capital and technological innovativeness, Rotch and his sons revolutionized whaling and put New Bedford on track to domination of the whaling industry.

Paul Cuffe, a Black Quaker and son of a freed slave and a Wampanoag Indian wife, and six others petitioned the Colonial government of Massachusetts for the right of Blacks to vote as taxpayers. This right was officially recognized in 1783. Organized Black Nationalist movements in the United States appear to have begun with Cuffe.

New Bedford was incorporated as a town in 1787 and a decade later (1796) a toll bridge connected New Bedford and Fairhaven. In 1847 New Bedford was incorporated as a city. Fairhaven was set off from New Bedford in 1812 incorporating Acushnet in her corporate limits.

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<sup>1</sup> D. Hamilton Hurd. 1883. History of Bristol County. Philadelphia: J.W. Lewis & Co. is being scanned and made available at the web site: <http://genweb.net/~blackwell/ma/bristol/b000toc.html>

<sup>2</sup> <http://www.newbedford.com/chrono.html>

<sup>3</sup> <http://www.newbedford.com/chrono.html>

The county seat of Bristol County, Massachusetts, is Taunton. The county population on July 1, 1999, was 520,258, an increase of 13,933 over the 1990 census.<sup>4</sup>

Cities and towns in Bristol County include:<sup>5</sup>

Acushnet	10,111	Town
Attleboro	39,557	City
Berkley	5,395	Town
Dartmouth	28,503	Town
Dighton	5,937	Town
Easton	21,311	Town
Fairhaven	15,937	Town
Fall River	90,654	City
Freetown	8,834	Town
Mansfield	19,244	Town
New Bedford	96,353	City
North Attleborough	25,908	Town
Norton	16,097	Town
Raynham	10,789	Town
Rehoboth	9,601	Town
Seekonk	13,339	Town
Somerset	17,710	Town
Swansea	15,554	Town
Taunton	52,553	City
Westport	14,156	Town

Taunton is located 18 miles east of Providence RI between Fall River and Brockton along Highway 44/138 on the banks of the Taunton River near Assonet Bay. Taunton is a major manufacturing center. The population estimate for Taunton on July 1, 1998 was 52,553, an increase of 2,721 since 1990.

Dartmouth is a community nestled along the shores of Buzzards Bay. Fall River and Freetown are to the north, New Bedford to the east, Westport to the west, and the Atlantic Ocean to the south. Dartmouth is approximately 60 miles south of Boston and 30 miles east of Providence. University of Massachusetts, Dartmouth is located here.

Fairhaven is located in Bristol County along Highway 6.<sup>6</sup> Across the harbor from New Bedford, Fairhaven shares a similar heritage, having developed and prospered from the whaling ships that once lined its docks. Reminders of that era survive in such historic buildings as the Weston-Howland Museum or the public buildings donated by philanthropist Henry Huttleson Rogers.

New Bedford is 10 miles east of Fall River between Fairhaven and N. Dartmouth along Interstate 95 on the banks of the Acushnet River near Southeastern Massachusetts University. New Bedford, due to its position on Buzzards Bay, was once a great whaling port. Fishing and allied industries still contribute one-fifth of the city's income. A passenger ferry operates to Martha's Vineyard and leaves from Pier 3. The population estimate for July 1, 1998 was 96,353, a decrease of 3,569 since 1990.

Seekonk is located on the Rhode Island state line just east of Providence, NW of Fall River along Interstate 95 and highway 44.

Outside of Fall River and sharing the Massachusetts/Rhode Island border, Westport lies on Hwy 117 and is close to ocean beaches and the airport in New Bedford. In the late 1700's

<sup>4</sup> <http://www.ohwy.com/ma/y/y25005.htm>

<sup>5</sup> <http://www.capitolimpact.com/gw/mamun/25005.html>

<sup>6</sup> <http://www.ohwy.com/ma/f/fairhave.htm>

Westport was a Quaker enclave. Paul Cuffe, whose efforts obtained blacks the right to vote in Massachusetts in 1783, spent most of his life in Westport.

He earned his fortune from whaling and trade in the Americas and Europe. He owned shares, over a period of time, in up to ten ships, and the financial support of the Friends and their doctrine figured in his success as a businessman. They captained some of his ships and believed that industry and frugality were pleasing in the sight of God. Cuffe's faith was a factor in his using a substantial portion of his wealth to help others, building a school when the community failed to do so and contributing to the raising of a new Friends meetinghouse in Westport.<sup>7</sup>

### *Fishing Dependency*

Today, New Bedford, Fairhaven, Dartmouth and Westport are important to the fishing industry with New Bedford/Fairhaven as the leading "community" in the sub-region. Using the fisheries dependency indices we have established for this project, New Bedford ranks fifth, below three of the four sub-regions of Maine and below the Cape & Islands, in terms of employment dependency because of the availability of alternative employment in the diversified economy.

However, New Bedford is consistently numbered among the top ports in the U.S. for the value of its commercial fishery landings. In 1998 and 1999, New Bedford ranked second in the nation for value with 87.4 million pounds worth \$98.5 million in 1998 and 86.1 million pounds worth \$129.9 million in 1999. Sea scallops are dominant now, though scallops and yellowtail flounder were the high valued species some years ago.

The numbers of individuals involved in harvesting is debatable. The 1990 Equal Employment Opportunity file on Bristol County (Massachusetts) for "Farming, Forestry and Fishing Occupations (473-502) shows quite a different picture of fishing employment than does the general U.S. Census data cited in the individual port profiles. "Captains and other officers" numbered a total of 121 (106 white, 15 Hispanic). "Male fishers" numbered a total of 922 (17 Hispanic, 874 white, 10 Black, 8 Asian and 13 "other"). These numbers are more in line with what individual key respondents estimated. See <http://sasquatch.library.orst.edu/> See the individual community profiles for more information on dependency.

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<sup>7</sup> [http://www.ai.mit.edu/~isbell/HFh/black/events\\_and\\_people/html/007.paul\\_cuffe.html](http://www.ai.mit.edu/~isbell/HFh/black/events_and_people/html/007.paul_cuffe.html)



Community Profiles  
Bristol County, Massachusetts  
New Bedford / South Shore sub-region

### 5.3.1.1. New Bedford

#### *Background*

New Bedford gained renown as the whaling capital of the world in the 18th century. As late as 1857 there were 429 registered whaling vessels in New Bedford and only 271 vessels registered elsewhere in the U.S. Reminders of this heritage are graven in the whaling captains' elegant homes, the whaling museum, and various statues scattered about the historic district. The 1996 designation of New Bedford Historic District as the New Bedford Whaling National Historical Park ensures that this history will not quickly be forgotten.<sup>8</sup>

With the discovery of petroleum products in 1859 that replaced the demand for sperm oil in oils and lamps, whaling lost its financial viability and declined rapidly. Nevertheless, in the 1890's, New Bedford was the fourth largest cargo terminal in the United States, with whale oil as the largest single volume item.

When the whaling industry declined, the city of New Bedford turned to textiles, an industry that had been recently transformed by technological innovations.<sup>9</sup> Cotton fabrics, in particular, led to a boom in manufacturing in New Bedford. Between 1881 and 1915, 32 cotton manufacturing plants, employing 30,000 people were incorporated in New Bedford. By the 1920's this industry had begun to decline with the movement of manufacturers to the southeast United States. Drastic wage cuts in 1928 led to a bitter strike of 20,000 workers that lasted for six months.

New Bedford's maritime tradition again came to the fore. The port boasts a deep- water, sheltered harbor with depths of over 30 feet and, since 1966, a hurricane barrier. While the city has consistently made an effort to diversify its economy, the Chamber of Commerce said in 1997 that 60 percent of the city's economy was based on fishing. New Bedford generally ranks among the top ten ports in the nation for the value of its landed seafood. Through the 1980's scallops and yellowtail flounder, which were among two of the highest valued products landed in the U.S., dominated the landings in New Bedford. In 1998 87.4 million pounds of fish product was landed. The value of these landings was \$93.5 million dollars, second only to Dutch Harbor, Alaska.

Today, New Bedford's waterfront looks like an industrial port. Old textile mills mix with machine shops, fish processors, frozen fish warehouses, and commercial fishing docks to give the appearance of bustling industry. The variety of support industries including vessel maintenance and repair, sales of equipment and provisions such as food, ice, fuel, oils and many other products have a great impact on the economy of New Bedford, acknowledged by the City of New Bedford Harbor Development Commission.<sup>10</sup>

The waterfront is divided into three sections: The South Terminal has 25 to 30 acres of marine industrial land used primarily by fish processing plants. The 1200-foot bulkhead and

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<sup>8</sup> <http://www.newbedford.com/nbprojabs.html#histpark>

<sup>9</sup> For interesting look at cotton manufacturing in Bristol County see <http://ccbitt.cs.umass.edu/lizzie/images/documents/L0041F03.html>

<sup>10</sup> <http://www.ci.new-bedford.ma.us/ECONOMIC/ECONOMIC/Harbor.htm>

30 feet depths allow offloading of fish and seafood directly into the plants.<sup>11</sup> The Central Waterfront boasts the State Pier, the Steamship Pier, dockage for most of the fishing fleet as well as supply houses and marine support services. The State Pier's eight acres include 1800 feet of berthing space, 97,000 square feet of dry storage and 24,000 square feet of open storage. The North Terminal is a marine industrial area just north of the New Bedford-Fairhaven Bridge. Maritime Terminal and Frionor, a fish processing plant, occupy some of the land. North of Frionor is an area with 1200 feet of bulkhead for vessels unloading to processing plants. Two other parcels (about 36 acres) are being developed for marine-related and/or compatible mixed use.

In addition to the fishing fleet, the Port of New Bedford each month attracts one or two refrigerated ships averaging 400-500 feet, bringing in 300-400 tons of fruit or frozen fish per trip. About every six weeks, the Portuguese-American Export Line's *Pauline Marie* brings Portuguese specialties to and from Portugal and its islands. The Cape Verdean Warehouse operates the vessel *Jenny* that makes about 10 trips annual to and from Cape Verde Islands.<sup>12</sup> Daily trips to Cuttyhunk Island, 16 miles south of New Bedford's port, are made by the *Alert* and *M/V Schamonchi* makes one to four daily trips to Martha's Vineyard in season.

While diversifying its economy, New Bedford is anticipating growth in tourism through projects capitalizing on its maritime heritage. One project is the New Bedford Aquarium that is currently raising funds to establish an impressive aquarium/oceanarium on the waterfront site of the Comm/Electric Company. High tech, virtual reality and interactive exhibits are planned that will play on New Bedford's history as a whaling and fishing port. New Bedford Whaling National Park also draws attention to both aspects of New Bedford's historical economy.

New Bedford's harbor planning process involved representatives from the fish-processing sector, harvesting sector and cold storage sector. The group agreed that tourism and recreational fishing should be further developed and that downtown should be more welcoming. They also recognized the need to achieve a balanced waterfront.

### *Fishing Dependency*

In the indices based on infrastructure differentiation, New Bedford ranks first, tied with Portland (Maine) and just ahead of Gloucester (Massachusetts). This high ranking correlates with the value of its landings. New Bedford is consistently numbered among the top ports in the U.S. for the value of its commercial fishery landings. In 1998 and 1999, New Bedford ranked second in the nation for value with 87.4 million pounds worth \$98.5 million in 1998 and 86.1 million pounds worth \$129.9 million in 1999. Sea scallops are dominant now, though scallops and yellowtail flounder were the high valued species some years ago.

The port profile also describes a community that is characterized by its involvement in the fishing industry. Some efforts to diversify the economy, so that it is not wholly dependent on the fishing industry, are nevertheless related to the cultural capital and social capital associated with the industry. Furthermore, New Bedford provides critical services for the fishing industry in the NRR, services that some small communities are dependent upon.

### *Governance*<sup>13</sup>

New Bedford, incorporated as a city in 1847, has a Mayor and City Council. Of the 38,025 registered voters, 62.9% (23,913) are Democrats; 7.9% (3,021) are Republicans and 29.2% (11,091) are unenrolled.

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<sup>11</sup> Information from the City of New Bedford Harbor Development Commission. See <http://www.ci.new-bedford.ma.us/ECONOMIC/ECONOMIC/Harbor.htm>

<sup>12</sup> <http://www.ci.new-bedford.ma.us/ECONOMIC/ECONOMIC/Harbor.htm>

<sup>13</sup> <http://www.state.ma.us/dhcd/profile/205.HTM#DEMOGRAPHICS>

## *Demography*<sup>14</sup>

### Population

Approximately 97,000 people in 39,000 households lived in New Bedford in 1996. The 1990 census counted 99,922 people with 53,091 females to 46,831 males.

### Age Structure

The 15 to 44 age group formed 43.8% of the population (43,760) according to the 1990 census. The 45-64 and the 65 and over categories each formed about 17.5 % of the population and the under 15 category was about 20%.

### Education

According to the 1990 census, 51.7 percent of the population graduated from high school and 9.1 percent has a Bachelor's degree or higher. The total number of students in the 1991-92 school year was 17,285; in 1994-95, the number had dropped to 14,499. The average teacher salary is 12 percent below the state average.

Among the fishermen, the majority of immigrants did not finish high school; many are not fluent in English.<sup>15</sup> Even among those who were born in the U.S., many dropped out of school before high school graduation. A few people have gone on to college and later returned to fishing.

### Housing

Of the 38,788 occupied housing units, 43.8% are owner occupied, 56.2% renter occupied. The owner vacancy rate is 1.6%; rental vacancy rate is 6.7%.

The median value of owner occupied housing was \$115,900 and 57 percent of the housing was built in 1939 or earlier. Both the numbers of home sales and the median sales prices began to descend in 1990, from \$105,000 in 1990 to \$95,000 in 1991. Then sales increased, but the prices continued to fall to \$85,000 in 1993 and 1994.

### Racial and Ethnic Composition

According to the 1990 census, 84,286 people (84.4%) were white; 6,653 (6.7%) were Hispanic; and 3,492 (3.5%) were black. Small numbers of American Indians, Eskimos or Aleuts and Asians or Pacific Islanders were identified (.4% each) and 4,727 (4.7%) were categorized as "other."

New Bedford has the largest percentage Portuguese population in the United States. The dragger fleet is predominantly Portuguese. One respondent estimated that "80 to 90 percent of the dragger fishermen were born in Portugal or the Islands (Azores) and are from a fishing background." Until recently New Bedford was considered the Cape Verdean capital of the U.S.

Respondents noted that the fishing industry also has participants from Norway, Sweden, Poland, Newfoundland (Canada), Cambodia and Vietnam. Fish processing plants' employees are from Mexico, Guatemala, Dominica Republic and Columbia (Mayans).

## *Economic Context*

### Income

The median household income in 1990 was \$22,647 and per capita income was \$10,923, both considerably below the state average. Of the 97,908 people for whom status was determined, 16,430 (16.8%) were below the poverty level, in contrast to the state's 8.9 percent.

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<sup>14</sup> <http://www.state.ma.us/dhcd/profile/205.HTM#DEMOGRAPHICS>

<sup>15</sup> From key respondent interviews.

Seventy-five percent (28,949) of all households showed earned income. Thirty-five percent of households receive social security and 17% receive retirement income.

### Employment

The 1990 census found 40,185 employed individuals and 12.2 percent unemployed (6.7% statewide).

In 1993, the largest single employer was Acushnet Rubber Company, employing 1,600 people to make such products as windshield wipers, seals, blades for copy machines, "o" rings, golf ball cores, and inline skate wheels. In 1999, the company was hiring new employees.

In 1993, textiles remained a viable industry with Cliftex Corporation employing 1,400 people and Calish Clothing Corporation 750 people. Aerovox, Inc. employed 800 people in the city making electronic components, such as various capacitors and filters. Polaroid employed 465 in 1993. AT & T, New England Plastics Corporation, The Standard Times and the YMCA also employ New Bedford residents.

Retail establishments employed about 5,053 people.

Agriculture, forestry and fisheries employed 1,248 though only 144 households claim income from farm self-employment. Transportation and communication employs 2,171. Many of those jobs are directly associated with fishing or fish processing plants.

Besides fishing, a variety of other jobs are associated with use of the port. For example, jobs are associated with the cargo vessels that bring in primarily fruit and frozen fish, Portuguese specialties, and Cape Verdean cargo. One vessel makes a daily trip to Cuttyhunk Island (16 miles south) and another makes one to four trips seasonally to Martha's Vineyard.<sup>16</sup>

Massachusetts's fishermen are often eligible for unemployment compensation. Boat owners pay 7.9 percent of their earnings for the unemployment fund.

From the 1990 U.S. Census:<sup>17</sup>

#### INDUSTRY

Universe: Employed persons 16 years and over

<b>Agriculture, forestry, and fisheries (000-039)...</b>	<b>1248</b>
Mining (040-059)...	23
Construction (060-099)...	2440
Manufacturing, nondurable goods (100-229)...	6143
Manufacturing, durable goods (230-399)...	5014
Transportation (400-439)...	1345
Communications and other public utilities (440-499)...	826
Wholesale trade (500-579)...	1746
Retail trade (580-699)...	6835
Finance, insurance, and real estate (700-720)...	1649
Business and repair services (721-760)...	1257
Personal services (761-799)...	1064
Entertainment and recreation services (800-811)...	270
Professional and related services (812-899):	
Health services (812-840)...	3370
Educational services (842-860)...	2813
Other professional and related services (841, 861-899)...	2184
Public administration (900-939)...	1958

<sup>16</sup> *Ibid.*

<sup>17</sup> <http://venus.census.gov/cdrom/lookup/>

## OCCUPATION

Universe: Employed persons 16 years and over

Managerial and professional specialty occupations (000-202):	
Executive, administrative, and managerial occupations (000-042)...	2809
Professional specialty occupations (043-202)...	4014
Technical, sales, and administrative support occupations (203-402):	
Technicians and related support occupations (203-242)...	1087
Sales occupations (243-302)...	3682
Administrative support occupations, including clerical (303-402)...	6178
Service occupations (403-472):	
Private household occupations (403-412)...	56
Protective service occupations (413-432)...	1033
Service occupations, except protective and household (433-472)...	5105
<b>Farming, forestry, and fishing occupations (473-502)...</b>	<b>1033</b>
Precision production, craft, and repair occupations (503-702)...	4801
Operators, fabricators, and laborers (703-902):	
Machine operators, assemblers, and inspectors (703-802)...	6719
Transportation and material moving occupations (803-863)...	1354
Handlers, equipment cleaners, helpers, and laborers (864-902)...	2314

A 1999 report found that the “core seafood industry, comprising harvesting vessels and dealer/processors, contributes nearly \$609 million in sales and 2,600 jobs, 90 percent and 70 percent of the respective sales and jobs harborwide.”<sup>18</sup> Related services and sales “account for an additional \$44 million in sales and about 500 jobs in the local area economy” . . . “Other important waterfront area businesses now contribute an estimated \$18 million in sales and nearly 600 jobs.”<sup>19</sup>

*Transportation and access*

New Bedford has a municipal airport, major highways (including Interstate Route 195 and State routes 24 and 140), rail (Conrail for freight service) and bus service, in addition to its port facilities.

A ferry service runs daily between Cuttyhunk and New Bedford. Increased service to Martha’s Vineyard has recently been approved.

*Hospitals, Libraries, Museums*<sup>20</sup>

St. Luke’s Hospital serves New Bedford. There are also 11 long-term care facilities, and four rest homes.

New Bedford Free Public Library was the “second free public library in the nation established by the city of New Bedford in 1852. The library houses a fine collection of historical and genealogical materials as well as one of the largest collection of whaling log books in the world. Lining the impressive marble staircases is a collection of historical plaques and photographs.”<sup>21</sup>

The library also has a Portuguese branch, Casa da Saudade, with a librarian whose spouse is a fisherman. The librarians obtained a grant to improve their collection of books on fishing topics in Portuguese.

<sup>18</sup> FXM Associates; Seafood Datasearch; Heaney Edelstein. 1999. New Bedford/Fairhaven Harbor Plan. Technical Memorandum: Expanded Economic Analysis. Prepared for the Harbor Master Plan Committee.

<sup>19</sup> Ibid.

<sup>20</sup> <http://www.state.ma.us/dhcd/profile/205.HTM#DEMOGRAPHICS>

<sup>21</sup> <http://www.rixsan.com/nbvisit/attract/nblibrary.htm>

New Bedford Whaling Museum recently completed assembly of a 66-foot rare male blue whale skeleton. In addition, the museum's *Lagoda* is thought to be the largest ship model in the world. America's last coastal steamship, SS Nobska, was donated to the museum and is being restored with the support of the New England Steamship Foundation. The museum is said to have the most comprehensive collection of whaling artifacts in the world; extensive collections of paintings, prints, drawings, furniture, and original photographs and negatives and a research library that emphasizes local, maritime, and whaling history.<sup>22</sup>

"The Seamen's Bethel was immortalized as the 'Whaleman's Chapel' by Herman Melville in his classic novel *Moby Dick*. Built between 1831 and 1832, the Bethel continues to this day as a house of prayer and standing memorial to those New Bedford whalers, and now fishermen, who have lost their lives at sea."<sup>23</sup>

The Rotch-Jones-Duff House & Garden Museum is the only historic whaling merchant's home on the East Coast that is open to the public.<sup>24</sup> The home is a 1834 Greek revival mansion designed by Richard Upjohn, founder of the American Institute of Architects. Only three families lived in the mansion throughout its history. The museum gets its name from the three families: William Rotch, Jr., a prominent whaling merchant, built the mansion and lived there until 1850. Edward Coffin Jones, a whaling merchant moved in in 1850. His daughter Amelia, a philanthropist, continued living in the mansion until 1935. Mark M. Duff, businessman lived in the house until 1981. In 1985, it was bought by WHALE and incorporated as a museum.

New Bedford Whaling National Historical Park was designated in November 1999.<sup>25</sup> The park's 20 acres include the 14 block National Landmark Waterfront Historic District. In addition, the National Landmark Schooner *Ernestina*, the area south of the State Pier known as Waterfront Park, the Rotch-Jones-Duff House and Garden Museum, the Wharfinger Building on Piers 3 and 4 and the Bourne Counting House on Merrill's Wharf are incorporated into the park. The primary theme will focus on New Bedford's role as the 19<sup>th</sup> century capital of the world's whaling industry. The park will celebrate New Bedford's cultural diversity including Native Americans' role in the development of whaling; immigration of the Portuguese and Cape Verdeans; the influence of Quakers in the community; the Abolitionist Movement and Underground Railroad, as well as the connections with Japan and Alaska. There is now a "formal link between New Bedford's Park and the North Slope Borough Cultural Center in Barrow, Alaska."

Funds are being raised and plans made to develop a New Bedford Aquarium. Waterfront property formerly used by the Comm/Electric Company is the likely site. High tech, virtual reality and interactive exhibits are planned for the aquarium/oceanarium that will focus on New Bedford's history as a whaling and fishing port.<sup>26</sup>

The U.S. Custom House, built between 1834 and 1836, continues to serve its original mission. "It is the oldest continuously operating Custom house in the nation. Where whaling masters registered their ships and cargo more than a hundred years ago, today's commercial fishing and cargo ships continue to log duties and tariffs. The building is still home to the New Bedford office of the U.S. Custom Service as well as offices of the National Marine Fisheries Service and the National Park Service. The first Post Office in New Bedford was originally located here."<sup>27</sup>

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<sup>22</sup> <http://www.whalingmuseum.org/>

<sup>23</sup> <http://www.rixsan.com/nbvisit/attract/bethel1.htm>

<sup>24</sup> <http://www.rixsan.com/nbvisit/attract/rjdhouse.htm>

<sup>25</sup> <http://www.newbedford.com/nbprojabs.html#histpark>

<sup>26</sup> <http://www.newbedfordaquarium.org/News0624991.htm>

<sup>27</sup> <http://www.rixsan.com/nbvisit/attract/uscustom.htm>

### *Fisheries profile*

When fishermen caught sea scallops in their otter trawls before the 1930's, they would save them for local consumption, as there was little market for them.<sup>28</sup> New Bedford buyer and processor, Linus Eldridge, eventually developed a demand for scallops by selling them in New York at the Fulton Fish Market. As demand grew, the fishermen developed dredges and New Bedford became the major scallop port in the U.S. For fifteen years, from 1950 to 1965, scallop landings hovered around 10,000 metric tons, about 70 percent of all scallop landings in the U.S. By the mid-60's however landings began to drop and vessels switched to groundfish. Only 43 scallop vessels remained in 1971.

When the scallop industry was developing, the majority of the vessel owners and crew were Norwegian. Initially, they moved to New Bedford from Brooklyn, later they were joined by immigrants from Karmoy (near Bergen), Norway.<sup>29</sup>

Along with scallops, groundfish are the fleet's primary target species. Of all major groundfishing ports in the eastern United States, the wider community of New Bedford has the most developed infrastructure for fishing and ranks as the top port in New England for total landings and value of landings.

Using the dependency ratios, New Bedford ranks 5<sup>th</sup> overall. This may be misleading since the ranking is skewed by the diversity of other labor sectors that contribute to the ratio. For example, Downeast Maine, with fewer actual numbers in fishing and less regional infrastructure, ranks higher in regional dependency (Rank of 1<sup>st</sup>), due in part to a lack of economic diversity. Between five and eight percent of the people in the New Bedford SMSA—far higher when we include members of their families—receives its livelihood primarily from fishing. Even a conservative estimate, assuming two other individuals supported by each fisherman and fishing-related worker employed places the proportion of the population dependent on fishing between 11 and 18 percent.

New Bedford has the most total capital invested in the fishing industry. It ranks at the top of the infrastructure scale with Portland and Chatham, and has the largest fleet of any port. There are a total of 1,131 crew manning 265 vessels. Of these, 82 are scallopers and 183 draggers.<sup>30</sup>

The groundfish fleet boats have 88 days to fish for cod, flounders (winter, fluke, dabs, yellowtail), haddock, pollock, and hake. Most of the groundfish boats try to diversify, catching fish not bound by the groundfish regulations. Some vessels travel south seeking fluke or squid. Others look for baitfish such as small skates to sell to the lobster fishermen.

Prior to Amendment 5 (to the Multispecies FMP), the Portuguese and American groundfish fishermen targeted different species and organized their trips differently. The Portuguese tended to target yellowtail flounder, making 10-day trips with 5-day layovers. The Americans tended to fish the hard bottom, catching cod and flounders in the channel, making 5-day trips with 2-day layovers.

There has not been a market for "soft" fish such as whiting in New Bedford, but in the search for diversity some vessels are going for whiting and squid. If they catch a significant amount, however, they may land in Rhode Island where the prices tend to be higher for those species. Herring boats occasionally come into New Bedford, but are not home-based in New Bedford. Crab is a bycatch for the lobster boats. New Bedford vessels catch swordfish and tuna. Dogfish has a decent market in New Bedford because there are 3

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<sup>28</sup> Georgianna, Daniel, Alan Cass and Peter Amaral. 1999. *The Cost of Fishing for Sea Scallops in Northeastern United States*. North Dartmouth: University of Massachusetts Dartmouth.

<sup>29</sup> *Ibid.*

<sup>30</sup> FXM Associates; Seafood Datasearch; Heaney Edelstein. 1999. *New Bedford/Fairhaven Harbor Plan*. Technical Memorandum: Expanded Economic Analysis. Prepared for the Harbor Master Plan Committee.

dogfish processing plants in the city.<sup>31</sup> Monkfish is very important to both the scallop vessels and draggers. A few lobster boats switched over to gillnetting for monkfish as well. It was promoted as an “alternative” fishery to seek when vessels were out of their days-at-sea allocation.

Niche fisheries include clam digging (hard shell), a summer conch fishery, and a pot fishery for scup and sea bass.

### Commercial fishing and fishing-related employment

#### *Harvesting structure*

New Bedford was the leading port in fishing employment in Massachusetts in 1997.<sup>32</sup> Approximately 250 fishing vessels (trip boats) operate out of New Bedford Harbor. Of these, close to 100 are scallop vessels, typically with 7 member crews.<sup>33</sup> The majority of the rest are groundfish boats with an average crew size of 4. In addition there are some dayboats that go lobstering or clamming. Transient boats land in New Bedford from time to time.

In 1998, 48 out of 183 draggers (26 percent) were over 80 feet in length, 5 of these were over 100 feet. There were also 49 scallopers over 80 feet, and of these six were over 100 feet.

Estimates of the numbers of fishermen ranged from 1,800 to 3,000 for the area. Crew sizes on scallop and groundfish vessels have diminished in the past few years, partly due to regulations (e.g., scallop boats are restricted to 7 crewmembers). To accommodate family members or long-term crewmembers, some captains and boat owners have adopted crew rotation schedules, a variant of job sharing, instead of laying off crew. Shore-side services or related employment is thought by some respondents to be at least 4,000. Consultants in a 1999 harbor planning process identified 2,600 jobs and \$609 million in sales directly attributable to the core seafood industry. Another 500 jobs were indirectly related, as was about \$44 million in sales.<sup>34</sup>

Ninety-five scallopers and groundfish boats that carried 448 crewmembers left fishing between 1994 and 2000. Of these, 26 vessels were in the Federal government’s buyback program, 26 were sold out of the fishery, 16 were scrapped, four had permit violations/sanctions and 23 either burned or sank.<sup>35</sup>

The majority of groundfish boats are owner-operated, or perhaps more accurately, family-operated. Sometimes, a corporation is formed among two or three people to own two or three vessels, each one taking one of the boats to operate themselves or by their sons, cousins, brothers. There are several scallop boat owners who own small fleets of 5 to 7 vessels.

There is a contingent of vessel owners within the New Bedford fishery that are not themselves fishermen. These individuals set some of the rules that govern labor relations throughout New Bedford, negotiating vessel shares and hiring practices. Union representatives reported that payment systems and crew-captain relations vary widely from vessel to vessel. In the late 1980s, boat owners who fell into this category numbered 32;

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<sup>31</sup> Recent regulations that eliminate dogfish as a target species will severely affect portions of the New Bedford fleet and the processing plants.

<sup>32</sup> Georgianna, Daniel. 2000. *The Massachusetts Marine Economy*. Dartmouth, MA: University of Massachusetts Donahue Institute.

<sup>33</sup> Respondents estimated 100 scallop boats, but Georgianna et al. counted 77. The 1997 federal permit files list 162 vessels with New Bedford “hcity,” 74 vessels with Fairhaven as “hcity,” and 12 vessels with Fall River as “hcity.” One respondent noted that there are 290 fulltime scallop boats on the East Coast (South Carolina to Maine).

<sup>34</sup> FXM Associates; Seafood Datasearch; Heaney Edelstein. 1999. *New Bedford/Fairhaven Harbor Plan. Technical Memorandum: Expanded Economic Analysis*. Prepared for the Harbor Master Plan Committee.

<sup>35</sup> Data collected and prepared by Rodney Avila (dated 11/8/00).



typically, these owners owned anywhere from one or two to six or seven vessels. During the strike of 1986 the union argued for a 42%-58% split of the proceeds, with 42% going to the owners and owners desired a 49%-51% split. A decade after the strike, the split on union vessels was 46%-54%, with the owners receiving 46%.

*Processing structure*

In addition to boat owners, captains, and crew, the full New Bedford/ Fairhaven fleet generates business for around 75 seafood processors and wholesale fish dealers and 200 other shoreside industries. Together, these businesses provide employment for around 6,000 to 8,000 additional workers.

The above figures, of course, include only those individuals employed directly in fishing and fishing-related industries; missing from these numbers are the health providers, real estate companies, banks, insurance agencies, and small business people who rely on the families of fishing industry employees for a percentage of their business. Even without considering these individuals, between five and eight percent of the people in New Bedford derive their income primarily from the fishing industry. Even a conservative estimate, assuming two other individuals supported by each fisherman and fishing-related worker, places the proportion of the population dependent on fishing somewhere between 11% and 18%.

The majority of the processing sector of New Bedford follows the pattern typical of New England in which "individual dealer/processors have remained relatively small in scale to avoid the risks of overcapitalization (too high fixed costs, or underutilized production capacity) in the face of variable raw material supplies."<sup>36</sup> While this is considered an appropriate business strategy given the "erratic volumes" available for processing, the small scale does leave the individual processors "vulnerable to price and volume sensitivity of major buyers which, in turn, has contributed to the competitiveness between dealer/processors throughout New England."<sup>37</sup>

As groundfish landings fell in the 1990's, shortages of raw material for fresh fish processing increased prices and "substantial new investment in both equipment and training was necessary to conform to new health regulations. Prices at the retail level, however, did not rise as much; competition from substitutes such as chicken severely limited price increases for fishery products."<sup>38</sup>

To stay in business, firms "intensified buying within New England to maintain their share of dwindling landings. They went farther afield from their home port to establish new buying relationships."<sup>39</sup> For example, when New Bedford boats caught fluke and steamed to Virginia, North and South Carolina or Georgia to unload, sometimes one of the local fish processors would be down there to buy it and then they'd truck it up to Massachusetts for processing.<sup>40</sup> According to one report, this is less common now. "New Bedford processors, who used to truck whole fish into the city from other ports, now process only the fish that is landed locally."<sup>41</sup> However, some consultants predicted in 1999 that in the following five to eight years the processing/wholesale sector would continue to diversify by sourcing fish from

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<sup>36</sup> Francis X. Mahady. 1983. "The Coordinated Marketing of New England Seafood: Opportunities and Constraints." Report prepared for The National Marine Fisheries Service and The New England Fishing Steering Committee.

<sup>37</sup> Ibid.

<sup>38</sup> Daniel Georgianna. 2000. *The Massachusetts Marine Economy*. Dartmouth, MA: University of Massachusetts Center for Policy Analysis.

<sup>39</sup> Ibid.

<sup>40</sup> Key respondent interview.

<sup>41</sup> Daniel Georgianna. 2000. *The Massachusetts Marine Economy*. Dartmouth, MA: University of Massachusetts Center for Policy Analysis.

other regions.<sup>42</sup> The processors who are bringing in frozen fish, “refreshing it,” cutting, processing and selling it to supermarkets, are expanding.<sup>43</sup>

In addition to finfish processing, surf clams and scallop plants are part of the processing sector of New Bedford. In 2000, three dogfish plants were facing the future with trepidation since imminent dogfish regulations were to allow only minimal catch of dogfish (as bycatch rather than targeted species).

#### **A small freezing/processing plant**

We’ve been in business six years, specializing in monkfish. The average daily volume is 25,000 pounds. We buy monkfish, gutted at sea, and skate from 13 vessels. We sell livers, tails, medallions and fillets to Japan, South Korea and France. We also freeze lobster, scallops, shrimp and cod. September–Lent is the period of highest volume. Twelve are employed year around, five on the payroll, seven through a temporary agency. Most are New Bedford residents; half are Guatemalan, the other half Portuguese. They are paid \$7-\$12 depending on their productivity. Jobs include skinning, cutter, trimmer, packer, trucker and floor manager. Now that monkfish regulations are effectively shutting down the fishery, we don’t know whether we’ll be able to continue in business.<sup>44</sup>

Frozen fish processing firms are quite different from their fresh fish counterparts. Frozen fish plants generally rely on imported, frozen blocks of fish that are processed into battered and breaded frozen portions. From 1997 to 1998, imports of frozen cod and scallops were up 50 percent, with Alaska as the primary source. New Bedford companies are among the largest buyers of Alaskan cod and flatfish. FXM estimated that about 15 million pounds of Alaskan cod and flatfish were brought into New Bedford for processing in 1997. On a total weight basis, about 25 percent of all fish processed in New Bedford in 1997 was imported. The best estimates by FXM were that harvesting employment would remain steady while processing and wholesale employment would grow between 5 and 25 percent per year. The shift in human capital would come from new immigrants and the shifting of labor into the fishing industry.

“Frionor, a Norwegian-owned company, was established in the 1950’s to sell Norwegian cod. Containers of frozen blocks were landed in Mobile, Alabama, and the product sold and transported to such companies as Mrs. Paul’s, Van de Camp, etc. Eventually, the company started processing some of the product, creating fish sticks and other frozen products. In the 1970’s, the company left its Quonset hut origins in Alabama, moved to New Bedford and started to expand. Now millions of pounds of frozen fish products are sold throughout the food service industry. Frionor sells to such chains as Long John Silvers and Arby’s, as well as to schools, prisons, and health care institutions. “You can find our product anywhere.” The principal product is value added, breaded product, with unique shapes, sizes and coating systems. Frionor also brings cod directly in from Norway, which is sold “as is” in cello pack and also salmon which is sold smoked and regular.”

“The frozen products are usually white fish including cod, haddock, whiting, and pollock. “We can no longer source all our product from Norway, so we also get product from Canada and Iceland. But our main mission is to use as much product as possible from Norway. The salmon we use is farm-raised from Norway. Pollock is from American Seafoods, our sister company in Alaska. Whiting is from South America. We don’t buy any fish from New Bedford or New England.”<sup>45</sup>

<sup>42</sup> FXM Associates; Seafood Datasearch; Heaney Edelstein. 1999. New Bedford/Fairhaven Harbor Plan. Technical Memorandum: Expanded Economic Analysis. Prepared for the Harbor Master Plan Committee.

<sup>43</sup> Ibid.

<sup>44</sup> Key respondent interview.

<sup>45</sup> Key respondent interview.

While the frozen fish sector of the industry, with its “borrowed” biophysical capital, does not directly support the harvesting sector of New Bedford, or the New England NRR, some of the sector’s inputs do derive from local suppliers. Packaging, dry ice, equipment maintenance and labor are some of the inputs often purchased locally. Trucking and some supplies associated with batter and breading may be purchased regionally or nationally. As with some of the communities that have been found by this research to be “essential providers,” it may be that the frozen fish sector of the industry plays an unrecognized role in assuring the viability of secondary industries that in turn contribute to the success of the fresh fish sectors.

Some of the larger frozen fish processing plants such as Frionor and Gorton’s (in Gloucester) are unionized. This usually translates to higher wages and a more stable work force. In the case of Frionor in New Bedford, the 130-person work force still retains a large percentage of Portuguese permanent employees. In contrast, some of the non-unionized firms rely on a handful of salaried employees and contract labor for working the line. The unionized companies thus have a greater impact on the local economies through workers’ expenditures and taxes than via raw product purchase.

#### *Wholesalers and Other Support Services*

Francis X. Mahady, in his 1983 report “The Coordinated Marketing of New England Seafood: Opportunities and Constraints” referred to wholesalers and other support services as the “distribution functions.” These are all functions “required to move seafood product from the producing sectors to the point at which it is available for direct sale to consumers.” The activities of “brokers, wholesalers, shippers, retailers, and food servicers” are included.

Brokers/Traders buy and sell fish all over the world. Most are small companies (under ten employees), but they handle large volumes of sales and imports. Furthermore, they contract for frozen warehouse space. “Their presence in the industry helps the other companies have alternative sources of product.”<sup>46</sup>

Lumpers, who unload the fish, are fewer in number now than when the landings were large, but “the well-known ones, the hard workers, and the ones that don’t steal your fish have no problem getting jobs.” It is a part-time job now, though.

Vessel maintenance and repair facilities, equipment manufacturers and retailers and other provisioners (food, ice, fuel, oil, etc.) of the fishing fleet are also important employers. There are between 6 and 10 marine suppliers, three or four major ice suppliers, and at least four diesel fuel suppliers. In addition, the auction, dealers, 50 processing plants, and 12 trucking firms provide significant fishing-related employment.

During a major fisherman’s strike of 1985-86, newspaper coverage focused on the plights of fishery-related businesses within the first two weeks of the strike, suggesting the effects of reduced fishing are felt immediately and deeply along the waterfront. A single vessel’s trip supplies were listed as including, “40 dozen eggs, 20 steaks, 20 pounds of bacon, 10 gallons of orange juice, 18 gallons of milk, and 37 loaves of bread” (Sunday-Times, January 5, 1986: A1). A company supplying 45 vessels lost a quarter of a million dollars before the strike was 10 days old and laid off 22 employees. Besides food suppliers, other businesses affected immediately were welders, restaurants, ice companies, fish wholesalers and processors, and dock workers.

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<sup>46</sup> FXM Associates; Seafood Datasearch; Heaney Edelstein. 1999. New Bedford/Fairhaven Harbor Plan. Technical Memorandum: Expanded Economic Analysis. Prepared for the Harbor Master Plan Committee.

The current downturn in fisheries had had similar effects through the support sector. According to one: *“Well, what has happened is I have a welder that does most of my work, and he’s an individual -- once in a while he’ll have a helper, but most of the time this guy works for himself by himself. When money gets tight with me, I can weld myself and I can work on the boat. So that saves me a couple of hundred dollars, but it also takes a couple hundred out of his pocket. So a lot of things that you used to pay someone to do, we do ourselves. It’s a ripple effect; as soon as you don’t have the money to pay for your services, you stop getting them. And with the more time that the boat now has to stay ashore, if I’m going to be home for a week, I can spend one day or two working on the boat.”*

New Bedford’s boatowners tend to rely on Settlement Houses to “keep the books” and properly distribute their vessel earnings. Their responsibility includes paying the crew, paying suppliers, paying taxes, etc.<sup>47</sup>

There is a maritime freezer company, an ice company, fuel and freight companies, boxes and other packaging manufacturers, truck rentals and temporary agencies in New Bedford—all of whom supply the fishing industry at times.

The Whaling City Display Auction is private with no public oversight. It was until recently unique in its use of computers and long-distance anonymous bidding, though the Gloucester auction is currently developing an online system. Although the display auction is said to be an improvement over the prior auction that harvesters complained was “rigged,” the owners of today’s auction are fish buyers and thus competitors of the other buyers. There is a perception of “unfairness” expressed by both the harvesters and buyers interviewed. Nevertheless, the auction has attracted a wider range of fish buyers who seek a diversity of fish species, so hake, catfish, cusk, mud skate wings, halibut, fluke, mackerel, red fish and bluefish have all found buyers.<sup>48</sup>

The New Bedford Whaling City Seafood Display Scallop Auction opened April 2, 2001 and sold its first 1,000 pounds of fresh scallops that week. Auction owner, Richard Canastra, says while that’s merely the beginning, educating the local scallop fleet has become a top priority to ensure the success of his venture.

#### *Species and Seasonality*

May is when the fish are most vulnerable since they are aggregated for spawning. “The month of May should be closed. Period. Nobody should be allowed to go fishing in May. Period. I [could] catch a lot of fish the month of May. I don’t make a lot of money. All I do is kill a lot of fish for little money, and that’s not my game. I don’t fish the month of May. I’m using my days to make money.”

Herring is starting to come in, but the only boat that lands herring so far is actually from Woods Hole. The market for soft fish is not very good in New Bedford, so boats landing whiting, for example, are apt to land in Rhode Island where they are likely to obtain a higher price. “My son had about 300 pounds of whiting, 300 pounds of squid and 300 pounds of bloodfish so he landed in Rhode Island. He averaged over a dollar a pound for all the fish. The guy fishing next door had about the same amount of fish and came into New Bedford. I think they gave him forty cents.”

There was a good market for dogfish in New Bedford where there were three processors before regulations essentially closed the fishery in 2000 after a one-year “exit fishery” in 1999.

Landed species:

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<sup>47</sup> For an interesting look at settlement houses, see Kaplan, Ilene. 1999. “Suspicion, growth and co-management in the commercial fishing industry: the financial settlers of New Bedford” in *Marine Policy* 23:3:227-241.

<sup>48</sup> New Bedford Seafood Coalition, 1996.

Groundfish—cod, various flounders, fluke, dabs, winter flounder, yellowtail, haddock (sometimes), pollock (some), hake, grey sole, occasional halibut  
 Small mesh—whiting, squid, occasionally some shrimp  
 Pelagics—herring  
 Crustaceans—lobsters, crab as bycatch  
 HMS—swordfish, tuna  
 Other—scup, quahogs, softshell clams, dogfish, skate, monkfish, conch, mussels, tilefish (bluefish, sea bass and striped bass are recreational fish species). Periwinkles are gathered for personal use.

#### *Other*

Aquaculture is still at the start-up stage, but the Northeast Regional Aquaculture Center is based at UMASS Dartmouth and can be a useful source of information and other resources. One former textile mill harbors a talapia growing facility. Greater New Bedford Regional Vocational Technical High School has a small aquaculture facility that provides talapia for the food service courses. One processor, who had relied on groundfish, then monkfish, is now growing summer flounder.

#### Employment

A number of former fishermen are now running tugboats, driving tractor-trailers, and a few are going into other fields. Some of these were boat-owners, some crew. A few travel as far as Philadelphia to work on tugboats. Their families remain in New Bedford and the men stay in Pennsylvania for a couple of weeks, return home for a week and then go back to work. “They’ll go on a two-week trip; it’s like a fishing trip for them.”

Older former fishermen are also obtaining training, then jobs, in plumbing, air conditioning and heating. Others are general contractors or put up fencing. Language facility hampers the transition for middle-aged or older Portuguese fishermen since most had no need to learn English prior to the cutbacks.

The labor force statistics show that the numbers of “operators, fabricators and laborers” (10,387) rival those in the “technical, sales and administrative” category (10,947). This diversity of job opportunities explains why the New Bedford sub-region ranks 5<sup>th</sup> in fishing dependency according to employment statistics even though it is first in fishing infrastructure. The Census figures also severely underestimate the numbers of fishermen since the figures represent only the fishermen in New Bedford city limits, not all the fishermen in the area who fish out of New Bedford.

Unlike some other ports, reproducing the fishery in New Bedford is relatively easy due to the availability of immigrant labor in the Portuguese community. Other immigrants, from Eastern Europe, Ireland, and Latin America, provide the processing sector with human capital.

#### **Recreational fishing and employment**

In 1999 there were approximately 950 slips on the harbor, 85 percent visitor based. According to FXM Associates, marina operators agreed that an additional 200 slips could be filled.<sup>49</sup>

There are four marinas on the New Bedford side of the harbor. Opened in June 1993, Pope’s Island Marina is a public facility with 198 slips and such amenities as laundry facilities, pump out station, shower rooms, electricity, and a conference room. It is located within the hurricane barrier in the upper harbor east of the New Bedford/Fairhaven Bridge.<sup>50</sup>

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<sup>49</sup> Ibid.

<sup>50</sup> <http://www.ci.new-bedford.ma.us/ECONOMIC/ECONOMIC/Harbor.htm>

A few owners of fishing boats in the 45 to 50 foot range have obtained licenses for summer party boat fishing. Tuna is a popular object for recreational fishing as are striped bass.

### Cultural role of fishing

#### *Cultural events*

An annual "Blessing of the Fleet" takes place in June. Only a small percentage of the commercial fleet participates in the parade of vessels, but those that do, decorate their boats and invite friends and family aboard to celebrate.

"Summerfest," a waterfront festival that is usually held in conjunction with the "Blessing of the Fleet," draws about 100,000 participants. Featured whaleboat races link historical tradition with the modern celebration.

#### *Ethnicity in the fisheries*

Most important in the groundfishing industry are the Portuguese, who come from the mainland and island territories of Portugal, including Cape Verde and the Azores. They arrived in several waves through the 19th and 20th centuries and have established an ethnic enclave in which knowledge of English is no more a necessity than it is among Cubans in Miami or Puerto Ricans in Spanish Harlem.<sup>51</sup> Strong ties to Portuguese villages still exist, making the community transnational in the textbook sense of the word, comprised of "processes by which immigrants forge and sustain multi-stranded social relations that link together their societies of origin and settlement."<sup>52</sup> Among the New Bedford Portuguese, these social relations are based first on family and second on village or region of origin. One boat-owner who was closely integrated into the Portuguese community of New Bedford, in response to a question about her nationality, said, *"Well, I consider myself Portuguese. My mother was born American, first generation; I'm second generation. I'm first generation through my father. I'm Portuguese; I'm not American, I'm Portuguese."*

The strength of the Portuguese community, similar to the Italian community in Gloucester and the Norwegians in New Bedford/Fairhaven, was noted by Doeringer, Moss, and Terkla in their mid-1980s study of New England's fishing economy (1986). Portuguese fishermen adjust to changes in fishery conditions in part by relying on social capital, which Doeringer, et al. called "family capital," and in part from their membership in a community that spans two and sometimes more than two nations. While Sicilian fishermen of Gloucester came without a mechanism to go back, or concern about maintaining social capital with their country of origin, Portuguese fishermen of New Bedford remain linked to their communities of origin as an adaptive buffer to poor economic conditions in the fishery. Crewmembers that lose their jobs, boat captains that lose their boats, or other businesses, may retrench by returning to Portugal.

*"He says with this crisis he might return to Portugal, because there's nothing for him to get him attached here. He says his English is worse, because when you arrive in New Bedford, you lose your English because everybody speaks Portuguese."*

Others may come as seasonal workers, not intending to remain, and take their earnings back home where they reunite with their extended families. They also maintain, to a greater degree, a cultural barrier of linguistic isolation between themselves and the greater New Bedford community. *"All day they are dealing with Portuguese people, so they never really have to learn the language. So because of that, they never learn the language, because they deal with Portuguese people, they go to stores and they speak Portuguese, they go to the doctor's and they speak Portuguese. So because everything is handed to them in Portuguese, they never really have to go and learn English."* Linking up with Portuguese fishermen requires an "in" through families, friends and kin, making social and economic research on this sector challenging.

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<sup>51</sup> Baganha 1991

<sup>52</sup> Basch, Glick-Schiller, and Szanton Blanc 1995: 7

### *Religion*

Interesting by contrast with religious festivals held by Sicilian-Americans in Gloucester, Massachusetts, the religious festivals sponsored by the Portuguese-Americans in New Bedford are not linked with the fishing industry in any obvious way. For example, “the annual ‘Feast of the Blessed Sacrament’ was founded in 1915 by four Madeiran immigrant men who wanted to recreate the religious festivals that were so common in the villages of their home island. This traditional mid-summer gathering for family and friends around the world has become the Largest Portuguese Feast in the World and largest ethnic festival in New England!”<sup>53</sup>

### *Kinship & family*

It is more common to find family members fishing together on groundfish vessels than on scallop vessels. This could have to do with differences in occupational goals among the Portuguese versus those of the Norwegians who dominated in the scallop industry. However, some vessel owners simply explained that scalloping is so labor-intensive that the crews tend to be young men who work for the decent income for a few years, then move on to other jobs, sometimes in the fishing industry, sometimes not. Also, in 1980s when crewmembers were making unusually large sums of money scalloping, boat-owners complained that they had difficulty recruiting crews that had no substance-abuse problems.

When the impacts of Amendment 5 and 7 to Multispecies Fishery Management Plan began to be felt, the average number of crewmembers on each dragger dropped from seven to four or five. However, on some boats, while only four were crew on each fishing trip, five people shared the four-person crew sites, rotating one in and out on each trip. One of the disadvantages of the smaller crews, however, is that each man has to work harder. This is particularly noticeable in the labor-intensive scallop fishery. Scallop boats formerly had an average of 11 crewmembers, but now are restricted to seven.

Because of their close ties to fishing communities in the Azores and Cape Verde, crew recruitment has an international dimension among the Portuguese. While this practice allows the fleet to expand during times of economic growth, the reverse is less common. That is, new immigrants and their families can become entrenched in the Portuguese community of New Bedford relatively quickly. Although most fishermen state that they will deal with the current crisis by returning to Portugal, others point out barriers to this response:

*“A lot of the [Portuguese] men think the same way I do, but their wives don’t want to leave their children. Their children get married here and have children— grandchildren —and they don’t want to leave.”*

### Fishing related organizations and their roles in the community and fishery

#### *Commercial fishing associations:*

The owner of a settlement house started the Fishermen’s Survival Fund. Each of the vessels that joined paid \$200-300 per month. A lawyer was hired and eventually NMFS agreed to a cooperative research effort that led to a limited opening of scallop beds in areas closed as part of the Multispecies FMP.

New Bedford Fishermen’s Union and the New Bedford Seafood Producers, a boat-owners association, had active members from the scallop industry for many years.

New Bedford Seafood Council, funded by a percentage of the scallop catch with the agreement of the Union and NB Seafood Producers, promoted scallops through a festival, recipes, food columns in the media and succeeded in creating a demand for the scallops as a delicacy.

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<sup>53</sup> <http://www.portugueseifeast.com/>

New Bedford Seafood Coalition's activities include providing technical advice to government and industry, monitoring regulatory developments, communicating with the media about fishing issues, and networking with other fishing organizations throughout New England.

Offshore Mariner's Association, which represented both scallopers and draggers, disbanded in 1999, an indication of the general decline in fishing social capital. However, their long-term octogenarian executive director still attends fishery management meetings when they are held locally.

An estimated 600 captains and crew were represented by the Seafarers' International Union during the 1986 strike. Ten years later they were representing about 350 fishermen, or around 42% fewer. Weakening of unions is occurring throughout New Bedford, in fishing-related industries as well as on the vessels and in the ailing textile mills. A fuel barge operator's wife succinctly described the common union-busting practice of closing a union shop and reopening it with a new name and without a union, saying, *"His [her husband's] place of employment used to be called one thing on a Friday under a union contract; the following Monday they opened up with another name without a union contract, a cut in pay, loss of a pension plan, loss of medical benefits, loss of four weeks' vacation, loss of sick days... The union that the old place used to be represented by was notified and this was over a year ago and nothing has been done by them."*

New Bedford unions, historically, provided pension funds for fishermen, negotiated share systems with boat owners, and regulated labor relations on board vessels as well as governed crew recruitment, retention, and hiring and firing policies.

Shore Support represents the fishing industry in fisheries management realms, provides emergency referrals to fishing families, and hosts a cable television program that focuses on issues important to the industry.

Massachusetts Fishermen's Partnership is a statewide umbrella organization that ties together the variety of separate fisheries associations in Massachusetts. Their first president was the Executive Director of the New Bedford Seafood Coalition. Their goal is to identify and resolve issues that are important to all fisheries groups regardless of species sought or gear used. As one of their first tasks, the group successfully undertook the development of a health care program for fishermen and their families. They are attempting to expand the program to New Hampshire, Rhode Island, and eventually, to Maine. In addition, the group was a strong proponent of extending the moratorium on oil exploration on the Canadian side of Georges Bank.

Other associations:

American Dogfish Association  
American Scallop Association  
The Scallop Group

Fishermen's Wives associations:

In the early 1960s, a fishermen's wives' organization actively promoted seafood and served as a support group for their members. The fishermen's wives also became mentors to a group of Gloucester women who then formed the still active Gloucester Fishermen's Wives Association. The New Bedford organization fell apart as a consequence of a divisive fishermen's strike that affected owners, captains and crew and their wives.

The Offshore Mariners' Wives Association organized the "Blessing of the Fleet" each year for many years. In the 1980's, respondents reported, there was a large fishermen's mass, a parade of boats sporting elaborate decorations, many relatives and friends crowded on board and lots of food. For the last 10 years, only a handful of women have been active members in the association and only a few commercial vessels participate in the parade of boats.



*Social clubs*

Many of the Portuguese fishermen belong to the Fishermen's Club. In addition, a Cape Verde Cultural Center and an Immigrant Assistance Center provide some limited services to the Portuguese. The Assistance Center provides translation services in particular, while the Cape Verde center promotes Portuguese cultural education within the public schools, attempting to enhance the status of Portuguese among school children and instill pride in Portuguese youth. As noted above, many second generation Portuguese have been so thoroughly enculturated in Portuguese language and culture that they do not consider themselves Americans. The enclave has fostered several Portuguese restaurants, taverns, food stores, and other businesses that cater solely or primarily to other Portuguese. Other clubs include:

- Monte Pio Luzo Americano Corp
- New Cape Verdean Band Club
- Portuguese American Athletic Club
- Portuguese American Social Club
- Portuguese Continental Union
- Portuguese Sports Club
- Young Cape Verdeans Athletic Club

The Norwegians formed a more tightly knit ethnic enclave in the past than today. Their community in New Bedford/Fairhaven drew most of its original membership from a single island in Norway (Karmøy Island), and was built around fishing. Early fishermen, arriving around the turn of the century, established the New Bedford Fish Supply, which still operates and which used to support newly arrived fishermen by providing them credit (without interest) and outfitting their boats. This practice ended during the 1960s, when immigration from Northern Europe became more regulated, particularly after the 1965 Immigration Act. Unlike the Portuguese, the most recent Norwegian generation has fewer concrete ties to Norway and does not express the allegiance we so often associate with immigrant populations. The Norwegians have established a church, which, along with an organization called the Friends of Norway, still serves as the cultural heart of the community, although there are no obviously Norwegian clubs listed in the telephone directory.

Fishing-related programs and services*Extension programs*

University of Massachusetts, Dartmouth's SMAST (formerly CMAST) Center for Marine Science and Technology is now the School for Marine Science and Technology

*Training institutes*

The Greater New Bedford Fishermen Families Assistance Center provides a host of services to fishing families ranging from referrals to social services, language classes, computer classes, and other retraining opportunities. English and a high school diploma or GED are prerequisites for retraining.

*Health & safety*

United States Coast Guard has a Marine Safety Field Office in New Bedford (part of the Providence Rhode Island Unit) that leases the south side and half the east side of the bulkheads of the State Pier.

## Perceptions of the Fishing Community<sup>54</sup>

### Importance of fishing to the community

All respondents consider fishing “important” to “very important” to Greater New Bedford, both culturally and economically. One respondent suggested that those outside the industry might consider it only “somewhat important” because not everyone realizes how much economic activity stems from the fishing industry. But another respondent noted that the industry in New Bedford is vertically integrated, so its influence is leveraged.

It would be interesting to research what impacts the strike in 1985 had on sectors outside of fishing. Even now, with very low unemployment figures in the state, New Bedford has a high rate, 17 to 21 percent, which some respondents blamed on cutbacks in the fishing industry.

### Boundaries

Fairhaven is very closely linked to New Bedford, particularly among scallopers. Dartmouth, Mattapoisett and Westport are bordering towns where members of the fishing community may reside, go shopping, or visit friends. Mattapoisett has a handful of lobster boats (about 5), Westport has about 20 lobster boats and two or three gillnet boats.<sup>55</sup>

Some of New Bedford’s Portuguese immigrants live in a Portuguese neighborhood with restaurants, stores, all services owned and/or managed by Portuguese. When they first arrived, many thought they would return to the Portuguese mainland or the Azores upon retirement. However, as time has passed, many have raised families here, their grandchildren have been born here, their friends are here, and they have lost the desire to go back to live in Portugal.

Typical contacts are:

Sell Fish	New Bedford
Offload Fish	New Bedford
Buy Fishing Gear	New Bedford/Fairhaven
Buy Ice	New Bedford/Fairhaven
Buy Fuel/ Oil	New Bedford
Haul out Boat Repairs	Fairhaven
Book Keeping	New Bedford
Banking	New Bedford
Shopping	Dartmouth (mall)/Taunton
Go to Church	Fairhaven/Dartmouth/New Bedford
Got to School	Fairhaven/Dartmouth/New Bedford
Go for Health Care	New Bedford
Go for Childcare	Fairhaven
Go for Retraining	New Bedford <sup>56</sup>
Visit Relatives	Fairhaven/Dartmouth/New Bedford
Visit Friends	Fairhaven/Dartmouth/New Bedford
Go for Vacation	Most go south to Aruba or Florida or to Portugal
Go for Recreation	All New England
Socialize	New Bedford, downtown

<sup>54</sup> Based on key informant interviews

<sup>55</sup> Westport is discussed in greater detail below (following the section on Fairhaven).

<sup>56</sup> One respondent noted that to qualify for retraining you need to speak English and have a high school diploma or GED. That immediately disqualifies the bulk of the Portuguese fleet.

### **Communication Issues**

Federal legislators are well respected and actively supportive of the fishing industry. Communication with federal managers was usually evaluated as poor or fair. "For it to be good, you've got to work together. It's gotta be a two-way street." However, when the Management Council was specified, a few respondents noted that the representatives to the Council from New Bedford were very good about sharing information, communication with them was evaluated as "excellent." But, the federal process was evaluated as "very poor." "They're just looking at me and it's like I'm transparent. They have another agenda, and they're just doing this because they have to. . . They know what they want to do, but they have to go through certain steps, certain channels, to get there." Another simply said, "it's a dictatorship."

A few of the state level legislators make an effort to find out what is going on in the industry and communication with those is rated as excellent or good. There is not much interaction or communication with local representatives.

### **Assessments**

Fishermen and scientists "strongly disagree" on assessments according to our respondents. One respondent asked to differentiate between scientists who work for NMFS and "real scientists." The former received a minus-four (several steps below "strongly disagree") and the latter, a "strongly agree." "They argue with the real scientists, I have no respect for them." "Just say 'no' to NOAA." "They have to predict doom and gloom for their jobs."

### **Local management practices**

There were no local practices specifically for management. However, in the early 1990s, a diverse group of fishermen from New Bedford and Pt. Judith (Rhode Island) agreed on specific rotating closed areas that would have kept the same amount of bottom closed, but would have rotated over the year so that different ports would have had easier access to grounds at different times. The Council did not institute these when they were proposed, but the same areas the fishermen had agreed upon as needing protection are the areas that were eventually closed under Amendment 7.

A group of 10 people, fishermen and processors from New Bedford, Rhode Island, Plymouth, Gloucester representing scallopers, druggers and dayboats developed a plan and brought it to the Council. "Nothing happened."

The union rules for scallop boats had 10-day or 10,000 pounds, whichever was reached first, limits on fishing trips. In addition, there were layover requirements. These rules were for safety since scalloping is very labor-intensive, particularly when the scallops are shucked at sea. The heavy gear combined with fatigue and burnout can lead to serious accidents. Nevertheless, the union rules did have a conservation benefit according to some respondents.

### **Economic change**

Not all respondents agreed on their evaluations of economic conditions. Ten years ago, the economic condition of the industry was on average considered good or very good, though perhaps starting to decline with owners taking a "larger piece of the pie." Overfishing was possible since there were no restrictions on days and some boats would fish back to back, simply changing crews. Five years ago, on average it was fair to poor. In 1994 their stocks were down, there was little or no enforcement and there were boats running drugs disguised as fishing vessels. In the late 1990's things started to improve once the "buybacks kicked in and pressure eased." Today, conditions have improved for some, but not all. Most fishermen are hanging on, but not getting ahead and many boats are

neglected. The future was predicted as poor or excellent, depending on whether the respondent was an optimist or pessimist.

One respondent said (in 1998) that in the center of New Bedford “stores are boarded up, restaurants near the piers are closed, corner stores, gear suppliers, Portuguese goods are gone, and any non-essential store is gone.”

The uncertainty is what is most difficult in contemplating the future.

The individual's economic position varied with whether or not the respondent was a boat owner or crewmember. The standard of living of crewmembers has gone down in the last 5 years. Both boat owners and crewmembers that had owned property mentioned that they had to sell or downsize. One boat owner noted that no raises or Christmas bonuses were given out in 1998 and that their 50 percent donation to health care for crew had been discontinued. Another respondent noted that the buyback programs put five people out of work, but all the money went to the owners.

### **Changes in fishing effort**

Fishermen are starting to be more selective in their fishing effort. “People are using their days to benefit them instead of going out and working, and working, and working.” Some are using computers to help them keep track of not only what grounds are most productive, but also what quantities they landed and prices they obtained over the course of the year. With limited DAS, fishermen are trying to optimize their incomes, reducing costs by fishing as close to port as they can or fishing where they know they are likely to find fish. Unlike in the past, rarely are days spent simply exploring in a search for productive grounds.

Some of the older fishermen find it difficult to adapt. “They feel like everyone is against them. Changing your method of fishing or your quality, icing them up the right way, cutting and bleeding the fish. . .they realized that the fish buyers weren't paying any more than they used to, and they would do all this extra expense and work, and basically the prices were the same, so that was the end of that.”

However, some entrepreneurial fishermen continue to try to find new niche markets where their catch will be more highly valued. Fishermen that used to concentrate on groundfish are fishing for squid, whiting, and monkfish. The monkfish fishermen “take very good care of the fish. . . they'll get very good prices.” Some lobster boats use gillnets for monkfish. At least one boat goes for skates to be sold for bait.

Ten years ago, New Bedford was a “yellowtail port.” The majority of the fish landed were either yellowtails or scallops. Today, boats are catching a wider variety of species, though with the recent (limited) reopening of scallop closed areas, the scallop landings are up.

When Georges Bank was closed, many of the fishermen went south to fish for fluke. In fact, they often caught it just off Massachusetts, but had to steam 20-30 hours to unload in Virginia, North and South Carolina or Georgia. Sometimes one of the local fish processors would be down there to buy it and then they'd truck it up to Massachusetts.

The replacement of Eastern-rigged vessels (side-trawlers) with stern trawlers and the development of electronics were cited as two of the most significant changes in the industry in the last generation. “Electronics have made it so easy. Before, you gotta look at a book or remember. Now you've got it on a screen.”

### **Effects of Recent Management**

Days at Sea are generally considered the regulation with the most impact on both scallopers and groundfishermen. During the two-year period in which interviews for this research were conducted, however, there were some changes in opinions about the effects

of regulations. Early in the study, the majority of harvesters were extremely anxious about the limitations. Two years later, when some vessels had left the industry and prices for fish were high, some finfish harvesters admitted that they were making more money than they had before the restrictions. The scallopers also were surviving due to the limited opening of the previously closed areas that had grown rich in scallops.

*Positive:* Closed areas are more effective than the days-at-sea regulations. Days-at-sea regulations do not work as well in reality as they do on paper because fishermen are figuring out how to make every day more productive, e.g., by tracking when they are most likely to catch fish. If they are smart, they are also tracking when they are likely to receive the best prices. [One respondent noted that May should be closed to fishing because that is when they are spawning and most vulnerable.]

Gear restrictions are generally viewed as beneficial since they limit the numbers of juveniles caught. A social benefit of the DAS regulations is that crewmembers have more time at home.

*Negative:* Vessel quotas were criticized for their impact on discard rates. For example, jumbo fluke brings in \$2.80 per pound in contrast to smaller fish that might be sold for \$.80 per pound. "If you are limited to 1000 pounds, why would anyone bring in anything but jumbos?"

When boats were sold in the buy-back program, some of the owners did not let their crew know until the last possible minute. Some of the crew had to travel to Rhode Island, New Jersey and Virginia to find sites. They make a few back-to-back trips then come home for a visit. New Bedford crews tend to be more experienced than many crews in the South, so they tend to find positions easily. One respondent noted that some companies in the South bought boats before identifying captains, so they have to struggle to find experienced captains or managers of their fleets.

One respondent mentioned a fisherman who lost his home, his wife and children. He grew so despondent that he tried to commit suicide. He had started saving for a boat at 16 years old, it was supposed to support his family and serve as his retirement fund. "It didn't happen."

In general, respondents are afraid that both alcohol and physical abuse have increased ashore. However, drug and alcohol abuse are less of a problem on the boats than they were 10 or 12 years ago because boat-owners and captains can be selective about their crews (since they carry fewer men now).

### **Characteristics of local fishermen**

A good fisherman has "his own little grounds where he does good...because they know when the fish are gonna be in the outside holes, when the fish are going to be ...They know when to start looking for the signs. Some of the other fishermen just go out in the blind and they don't have a clue what's going on." You also have to have stamina, the willingness to put up with the elements and put the work in. Furthermore, you must keep on top of your gear, your electronics and your nets. "Everything changes from trip to trip. Your wires stretch, your twine shrinks up, everything changes."

Good fishermen are "independent, creative, love the ocean, are team players and fluid with the environment."

"I think fishermen now are starting to get educated and I think you're gonna see more responsible fishermen . . . We have to get rid of the old mentality of filling the boat up."

The dragger fleet is predominantly Portuguese. One respondent estimated that "90 percent of the dragger fishermen were born in Portugal or the Islands (Azores) and are from a fishing

background.” Records of 1,800 fishermen registered with the Seafarers Union in the mid-1990’s indicated that 80 percent were Portuguese.

The average age of fishermen in the dragger fleet is thought to be 40-45. “What are they going to do? They didn’t have to learn English. Their crews were Portuguese, their buyers were Portuguese, their radios are Portuguese, everything. ‘Oh, there will be a bill? My wife will go over it.’ The wives speak English. They have to go to the schools and deal with the children, the teachers and the doctors, so the women end up learning English.”

Non-Portuguese fishermen also have language difficulties. There are Cambodians, Vietnamese, Poles and Norwegians on the boats.

#### *Job satisfaction*

Fishing itself is valued as a job, “fishermen live to fish...it’s a new adventure every time you leave, you never know what’s going to happen. It’s not like going to work in a plant and every day is the same thing, day after day...you never know if you’re going to make a paycheck...if you’re gonna break down. It’s just something you face, and there’s an excitement to that...Fishermen don’t want to leave [fishing], they’re hanging on tooth and nail to stay in.”

“The majority of them have a passion for their job and for the sea. Although you often hear them say, ‘gee, I wish I could find a job working ashore,” they’re not happy when they do that. I have found that some of the people who have left fishing have gone back after trying jobs in factories, for example.”

Some crewmembers that were suddenly left without a site when the owner decided to sell his vessel in the buyout left New Bedford for sites on vessels out of Rhode Island, New Jersey and Virginia. They fish a couple of back-to-back trips then come home for a visit. New Bedford fishermen are experienced and usually can find work on boats further south.

However, the regulations and anxiety about whether or not they will survive financially has made some fishermen dissatisfied with their jobs. Their sense of independence and ability to plan is threatened by the ever-increasing restrictions.

#### *Safety*

Fishing in general is safer now that the Coast Guard regulations have “teeth.” Mandatory survival suits, life rafts and EPIRGs contribute to the improved safety.

Nevertheless, some respondents pointed out that boats are fishing short-handed which can be dangerous (fatigue-related accidents) and some fishermen are staying out even when the weather suddenly turns bad so they don’t lose steaming time and thus waste a DAS.

#### **Fishing families**

In the Portuguese community, fishing is “in their blood. Since they were children, they were working on their father’s boats. That’s how I started. Before I was able to go fishing my father, when he got back, he would stretch the nets out and I would fill the needles with twine. As I was growing, he would teach me and would give me gear work to do when I got home from school. When I made my first trip fishing, I knew how to mend nets before I even left this harbor. My brother was the same way. That’s how my father brought us up and that’s how his father brought him up. Same thing with my boys.”

Spouses in the Portuguese fishing families tended not to work until incomes started dropping. “In the late 1970’s none of the wives worked, men did not believe wives could or should work.” Even as late as 1993, maybe twenty to twenty-five percent of the women worked. By 1998, probably 75 percent were working.

Relations between Portuguese crewmen and Portuguese boat owners reflect one dimension of the Portuguese community that has been observed particularly among peoples who compete over what they perceive as scarce resources. While the New Bedford Portuguese tend to be extremely closed to outsiders and densely knit in terms of community rituals, kinship ties, and so forth, several sources of friction exist within the community, making it difficult for them to organize or engage in effective political activity. Interviews with the wives of Portuguese fishermen referred many times to problems of families envying one another and constantly competing to own nicer cars, houses, clothes, and so forth: *"You cannot get the wives involved, they just don't want to. They'd rather sit in the cafe and talk about this one's daughter and that one's son -- anything but worry about their own financial future."*

A Norwegian fisherman's wife noted that, although the Norwegian community presents a very organized appearance, there are strong undercurrents of greed and envy working against effective unification. This woman added that it was better to conduct business outside the family, without infusing one's business activity with a strong ethnic component, suggesting that with family ties also came patriarchal and authoritarian relations.

During times of economic plenty, when everyone's vessel shares were increasing, sharing and cooperation is easy. With economic downturns, when sharing and cooperation are more necessary and more difficult, envy and gossip are a natural response, but divisive both for families and the community.

Today, women from fishing families have gone into real estate, taken jobs in the court system; one started a halfway house for girls. Others have gone through retraining programs and become nurses, home health aides, hotel workers, hairdressers, waitresses, secretaries and accountants.

Spouses in scallop fishing families follow the general societal trends, not necessarily associated with the downturns in fishing: some working, some not as dictated by education and interest with an increase in two-income families over time.

The majority of respondents said that they hoped their children would not go into fishing, despite their own love of the occupation and way of life, because of the difficulties associated with the constantly changing regulations and the lack of financial security.

Community Profiles  
Bristol County, MA  
New Bedford/South Shore sub-region

### 5.3.1.2. Fairhaven<sup>57</sup>

#### *Background*

Sharing a harbor with New Bedford, but dwarfed in size and population by its neighbor, Fairhaven is subsumed under the same rubric in any discussion of the fishing industry in the area. Most often, if Fairhaven is noted at all, it is as New Bedford/Fairhaven. Nevertheless, Fairhaven has a distinctive history and retains its own niche in the fishing industry.

In the mid-18<sup>th</sup> century, Fairhaven's economy began to focus on such maritime pursuits as shipbuilding, whaling and foreign trade rather than relying solely on agriculture. Incorporated as a town in 1812, by 1838, Fairhaven was the second largest whaling port in the country. Forty-six vessels and 1,324 men brought in \$600,000 worth of whale products annually. In the late 1870's Fairhaven was connected to New Bedford by a street railway and thus became a suburb of the city.

When whaling declined, Fairhaven turned to other industries. In 1903, the American Tack Company's plant in Fairhaven was said to be the largest and best tack mill in the world. Oil millionaire, Henry Rogers, donated a multitude of public buildings designed by architect Charles Brigham including Fairhaven's town hall, library, a church and school. In recent years, a prominent fishing family of Fairhaven has renovated several buildings dating from the mid-1800s.

Maritime pursuits are still important to Fairhaven. While New Bedford is the site of the most active unloading and processing facilities for the fishing fleet, Fairhaven has retained two active boat yards and marine railways where vessels can be hauled-out for repair. Other support services such as fishing gear and ice suppliers, one processor and a well-respected settlement house remain in the town. Fairhaven also has five marinas, one of which is state-owned, that cater to recreational boating and fishing.

#### *Governance*

A board of Selectmen and representative town meeting led the town's government. Of the 9,187 registered voters in 1994, 39.7% were Democrats, 7.7% Republican and 52.5% were unenrolled.

#### *Demography*

##### Population

In 1990, Fairhaven had 16,132 residents, 7,650 male and 8,482 female.

##### Age Structure

Forty-two percent of the population was in the 15 to 44 years old category, 20.2% in the 45-64 years old category, 19% were over 65 and 18% were under 15 years old.

##### Education

According to the 1990 Census, 68.9% are high school graduates or higher; 12.9% have a Bachelor's degree or higher. Average teacher salary in Fairhaven was \$35,759 in 1993,

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<sup>57</sup> The historical and statistical information that follows is largely drawn from a web page found at <http://www.state.ma.us/dhcd/profile/094.htm>

Information for that page was submitted by the Massachusetts Historical Commission, the Department of Housing and Community Development, Massachusetts Department of Revenue and various individuals.



below the statewide average of \$39,023, but slightly above that of Greater New Bedford's average of \$34,410.

#### Household Composition

Of the 6,359 households, 70.1% (4,457) live in owner occupied residents with a median value of \$121,900. The 29.1% who rent pay (median contract rent) \$383. The majority live in single family homes (72.4%).

Median sales prices of homes fell from \$108,000 in 1990 to \$95,00 in 1991 and 1992. After slipping to \$90,000 in 1993, prices rose to \$104,000 in 1994.

#### Racial and Ethnic Composition

The vast majority of residents in 1990 were white (15,656 residents or 97%). Blacks and Asians each made up .5% of the population (around 79 individuals) and Hispanics .8%. Twenty-four people (.1%) were listed as American Indian, Eskimo or Aleut and 160 people (1%) were listed as "other."

#### *Economic Context*

##### Income

The median household income was significantly higher than New Bedford's at \$30,097 (81.5% of the state average) in 1989. Its per capita income was \$13,114 (76.1% of the state average). Of the 15,825 persons for whom status was determined, 1,032 (6.5%) were below poverty level.

Of the 6,359 households identified in the 1990 census, 81% (5138) showed earned income. Twenty percent (1,283) of the households received retirement income in 1990, and 37% (2,343) received social security.

##### Employment

The 1990 census noted 7,540 employed individuals, 620 unemployed. Fairhaven's unemployment rate was 7.6%, somewhat higher than the statewide unemployment rate of 6.7%.

Titleist/Foot Joy Golf Company is considered the largest employer with 300 employees. Wal-Mart employs 300 full time; K-Mart, Shaw's and A&P supermarkets each employ 100 people full-time. D.N Kelly and Sons, Inc., a well-respected boat yard with \$8,000,000 in gross receipts, also employs 100.<sup>58</sup>

About 117 retail establishments employ about 1,576 people.

Agriculture employs about 219 residents, though only 33 households claimed income from farm self-employment.

#### *Transportation*

Route 6 and Interstate Route 195 are Fairhaven's major highways. New Bedford, Fall River and Providence are within a reasonable distance of Fairhaven, providing residents with easy access to transportation facilities.

#### *Hospitals, Museums*

There are no hospitals in Fairhaven, though there are three long-term care facilities and two rest homes.

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<sup>58</sup> FXM Associates; Seafood Datasearch; Heaney Edelstein. 1999. New Bedford/Fairhaven Harbor Plan. Technical Memorandum: Expanded Economic Analysis. Prepared for the Harbor Master Plan Committee.

The Museum of Fairhaven History “is housed in the Academy Building, a former school built in 1798 and formally opened in 1800. The exhibits include a nautical display, military room, period room, 18th century schoolroom, and special exhibits.”<sup>59</sup>

### *Fisheries Profile*

Because of its close link with New Bedford, informants could not easily separate the fisheries into aspects strictly associated with Fairhaven. Scallop fishing is a multi-million dollar business that spills out beyond the formal city limits of New Bedford and town boundaries of Fairhaven.

While Fairhaven does not boast the same numbers or variety of fishing industry infrastructure as New Bedford, it does supply a necessary service to the fleet, i.e., repair facilities. A marine contractor, supplier of marine equipment, four provisioners of marine supplies and a marine surveyor provide a nucleus of other services to the fleet. Given that a recent report estimated that the average annual repair and maintenance costs of a 70 foot scalloper is \$65,000, if the majority of the Fairhaven and New Bedford based scallopers take care of their repair and maintenance in Fairhaven, the town benefits by anywhere from \$4,550,000 to \$6,500,000.<sup>60</sup> Overhead and loan payments are another \$100,000 per vessel, some of that approximately \$7,000,000 to \$10,000,000 is spent in Fairhaven. In addition, returns to those vessel owners and/or crew who reside in Fairhaven are often spent in the town.

Informants noted, however, that contraction of the fleet with limits on days-at-sea and closed areas have affected some services. Diesel fuel is no longer available from a Fairhaven-based company; rather barges from New Bedford bring fuel to Fairhaven. Two bars that cater to primarily to fishermen are facing possible closure. But it was not the downturn in the fishing industry, but a personal injury lawsuit against a local manufacturer of “the best winches” that forced that company to reduce their business to supplies rather than manufacturing.

### Commercial fishing and fisheries-related employment

The distinction between New Bedford and Fairhaven blurs when counting fishing vessels, crew and the various industry support services. While it is not uncommon for observers to remark that scallop vessels are owned by Norwegians who live and tie-up their boats in Fairhaven, while draggers are owned by Portuguese who live and tie-up their boats in New Bedford, the truth is less rigid. One informant who has worked on fishing vessels and in shore-side services for over 40 years argued that one must look at not only New Bedford and Fairhaven, but the adjoining communities of Dartmouth, Mattapoisett, and Ahusnet to locate both fishermen and fishing industry. He counts 5000 fishermen, including lobster fishermen, clam diggers and trip boats. Another long-time resident estimated that there are five hundred to seven hundred scallop fishermen on 100 boats in Fairhaven/New Bedford and more than 700 fishing-dependent families.<sup>61</sup>

In addition, Fairhaven boats one boat yard that employs 100 people, one processor and a welder.

### *Harvesting sector*

Most of the Fairhaven vessels unload in New Bedford. Scallop vessels predominate, though 8 to 10 vessels seek quahogs and 6 to 8 are lobster boats. Mussels are also harvested. The majority of the vessels are in the 15 to 10 year old range and are steel, 85 to 105 feet in length. A half-dozen vessels are wooden. The fleet is about half what it was before the groundfish and scallop amendments were implemented.

<sup>59</sup> <http://www.rixsan.com/nbvisit/atract/fairhist.htm>

<sup>60</sup> Georgianna, Daniel, Alan Cass and Peter Amaral. 1999. The Cost of Fishing for Sea Scallops in Northeastern United States. North Dartmouth, MA: University of Massachusetts Dartmouth. Cooperative Marine Education and Research Program, NMFS Contract No. NA67FE0420.

<sup>61</sup> Most of the key informants rounded the number of scallopers to 100, but Georgianna et al found 70 large scallopers, 5 medium and 2 small in New Bedford/Fairhaven.

Some fishermen/owners own several boats that share crews in order to have more DAS. One for example, has two crews working on three boats in order to keep them working 180 days.

## **Perceptions of the Fishing Community<sup>62</sup>**

### **Importance of fishing to the community**

All key informants agreed that fishing is “very important” to Fairhaven.

### **Boundaries**

Off-loading and selling fish is generally confined to New Bedford while hauling out for vessel repair is usually in Fairhaven. Most other community contacts queried were answered as “both.” That is, Fairhaven residents in the fishing industry consider both Fairhaven and New Bedford as their “community.”

Typical contacts are:

Sell Fish	New Bedford
Offload Fish	New Bedford
Buy Fishing Gear	New Bedford/Fairhaven
Buy Ice	New Bedford/Fairhaven
Buy Fuel/ Oil	New Bedford
Haul out Boat Repairs	Fairhaven
Book Keeping	New Bedford/Fairhaven
Banking	Fairhaven/New Bedford
Shopping	Dartmouth (mall)/Taunton
Go to Church	Fairhaven (where live)
Got to School	Fairhaven (where live)
Go for Health Care	New Bedford
Go for Childcare	Fairhaven
Go for Retraining	New Bedford <sup>63</sup>
Visit Relatives	Fairhaven /New Bedford
Visit Friends	Fairhaven/Dartmouth/New Bedford
Go for Vacation	Most owners go to Florida, crews stay locally (few can afford)
Go for Recreation	All New England
Socialize	New Bedford, downtown. Portuguese have clubs. Less drinking now.

### **Communication Issues**

While Fairhaven and New Bedford informants complimented their federal legislators, few were content with their communication with federal level managers. “Poor” communication was cited and such comments as “it’s a dictatorship,” “Just say no to NOAA” and “they have to predict doom and gloom for their jobs” were made.

<sup>62</sup> Based on key informant interviews

<sup>63</sup> One respondent noted that to qualify for retraining you need to speak English and have a high school diploma or GED. That immediately disqualifies the bulk of the Portuguese fleet. Another said, “it’s a joke. How are you going to retrain a 40-year old to go from \$40,000 or so to \$15,000?”

### **Assessments**

Informants uniformly agreed that scientists and fishermen strongly disagree on the assessment of the stock conditions of scallops.

### **Local management practices**

Several informants noted that when the union was strong, its work rules had the effect of fisheries management, since they regulated the number of days a vessel could work and how long it had to be tied up upon its return from a trip.

Respondents noted that the latent permits threaten the future of fishing. "Take care of the dead licenses," one urged.

### **Economic Change**

According to a couple of Fairhaven key informants: Ten years ago (1989), the scallop industry was in excellent economic condition. New, safer boats were built, mortgages were based on \$1 million gross stock. Five years ago, the industry was in good condition. Though there were cuts in days-at-sea, the cuts were not yet severe. Today, the economic condition is poor to fair. Until the closed areas were opened (though with limits on quantities and numbers of vessels), the gross stock of most vessels was half what it was five years ago. Some will survive. Five years from now, "depends on the government." The resources are there, whether fishermen will be allowed to bring them in is the question.

In the meantime, there is less money available, so repairs are put off, possibly compromising safety of the vessels. With fewer vessels hauling out annually, some of the competition (among railways) is less, so the suppliers and railways are able to charge more.

One benefit of changes is that the lower number of allowable crew (7) has rid the industry of most "druggies." "In the late '80's, early '90's, kids (crew) made more money than they knew what to do with." Crewmembers now tend to be family oriented and they don't have the large paychecks to "blow" anymore. The lower number of crewmembers also means that the crew receives a larger share than they otherwise would, "it's what has saved the crews." Unfortunately, as the gross stock has diminished, vessel owners have tended to drop health insurance coverage for their crew.

### **Effects of recent management**

Early interviews reflected anger and frustration with regulations that kept scallopers outside of closed areas that were intended to protect and commence the rebuilding of groundfish stocks. Scallop fishermen were convinced that the scallops were so deep in the closed areas that the upper levels were suffocating the lower levels. The catches of poachers were sufficient to give credence to the rumors of rebuilt scallop stocks. With the support and organizational skills of one of the settlement houses, scallopers formed the Fishermen's Survival Fund, hired a lawyer, and eventually came to an agreement with NMFS to conduct cooperative research on the closed areas. This project led to partial openings of the closed areas to scallopers. It also made the scallopers aware of the benefits of closing areas for a time. While rotating closed areas have been suggested in the past, there now seems to be very widespread support for the concept.

Other requisite changes including the sizes of the rings (now 3 1/2 inch), elimination of "cookies," and the cuts in the crew size have made a difference in the sizes of the scallops caught and quantities handled. One respondent commented that the regulations (and their impacts) have diminished the fleet to half the size it was.

### **Characteristics of local fishermen**

A good fisherman has patience, longevity and can keep a steady crew. "A captain's word is law." "If a non-owner captain doesn't produce, he doesn't stay." The captain must be respected.<sup>64</sup>

Competition is part of the fishing tradition. The captains of three vessels owned by one respondent all compete to bring in the largest catch. They won't tell each other where the best fishing is and they are happy if they can bring in even "one bag more" than the others. The competitive culture may have contributed to some of the "poaching" that went on in closed areas. One respondent noted that his partner "went over the line" [into the closed areas], was caught and is now painting houses.

*"You know it's out there, you know the government is wrong, you aren't doing well...I regret that the government has made us criminals, given us a bad name."*

#### *Safety*

It is safer now, partially because DAS limits the time you can fish. Though the boats are going short-handed, in most cases the boats are down to only "good men, good fishermen."

#### *Job satisfaction*

Fear of the future is ruining many fishermen's satisfaction with their jobs. Nevertheless, retraining is viewed skeptically: "How are you going to retrain a forty-year-old accustomed to making 40 or 50 thousand dollars a year to accept \$15,000?"

### **Fishing families**

Though several of the Norwegian families are said to have "educated their children out of the industry," key informants had mixed views as to whether or not that was true and whether or not they wanted their own children to stay in the industry. One informant pointed out that some children of fishermen have gone to college, but have returned to fish.

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<sup>64</sup> Captains often receive a bonus of 10 percent of the boat share.

Community Profiles  
Bristol County, Massachusetts  
New Bedford

### 5.3.1.3. Westport

#### *Background*

Incorporated as a town in 1787, “Westport is a town of farms, of beautiful scenery, of people who live from the water, of small businesses and of homes. Each of these aspects of the community is characterized and strengthened by the superb natural resources to be found within the town's borders. The key to Westport's recreational resources also lies within its natural environment.”<sup>65</sup>

Westport is a small estuarine port in southeastern Massachusetts. It is bordered by Fall River on the north and west; Dartmouth on the east; the Atlantic Ocean on the south; and Tiverton and Little Compton, Rhode Island, on the west.

In the late 1700's Westport was a Quaker enclave. Paul Cuffe, whose efforts obtained blacks the right to vote in Massachusetts in 1783, spent most of his life in Westport. He earned his fortune from whaling and trade in the Americas and Europe. He owned shares, over a period of time, in up to ten ships, and the financial support of the Friends and their doctrine figured in his success as a businessman. They captained some of his ships and believed that industry and frugality were pleasing in the sight of God. Cuffe's faith was a factor in his using a substantial portion of his wealth to help others, building a school when the community failed to do so and contributing to the raising of a new Friends meetinghouse in Westport.<sup>66</sup>

Today, the commercial port consists of a single town dock whose upkeep is funded directly by the fishermen. Approximately 100 fishermen live in the town, but not all fish from the town's port, instead some fish out of New Bedford. The western dock area is exclusively maintained for commercial fishermen, while the docks across the Housatonic River are dominated by recreational marinas. Westport has gentrified as surrounding real estate has been bought up by newcomers to the area. It was not included in the infrastructure survey, but is similar in this regard to Stonington, Connecticut.

The isolation of this traditional fishing has kept the community intact, and residents lament the intrusion of outside development: “*Life is worse here than it was five years ago. With more building in town, people have discovered ‘beautiful Westport’. Soon you’ll be able to call it a city. Last year there were 300 building permits in a town with only around 300 houses. Sections that were woods are now house lots.*” Despite the recent buildup of housing, one of the reasons local development has proceeded slowly and there is no significant service industry is that the town lacks a public sewer and water infrastructure. In 1989, only 161 housing units were on a public sewer and the majority of housing units obtained water from individual wells (4936 drilled and 690 dug).

Besides fishing, the early residents worked on farms and vineyards in the area. A few small farms, including a vineyard, remain, but most labor jobs are in Fall River or New Bedford. Several residents hold outside jobs in manufacture of wire reels and appliances.

#### *Governance*<sup>67</sup>

Board of Selectmen, Administrative Assistant, and Open Town Meeting

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<sup>65</sup> <http://www.state.ma.us/dhcd/iprofile/334.htm#NARRATIVE>

<sup>66</sup> [http://www.ai.mit.edu/~isbell/HFh/black/events\\_and\\_people/html/007.paul\\_cuffe.html](http://www.ai.mit.edu/~isbell/HFh/black/events_and_people/html/007.paul_cuffe.html)

<sup>67</sup> Ibid.

## *Demography*<sup>68</sup>

### Population

The population of Westport according to the 1990 Census was 13,852 with 6831 male and 7021 female.

### Age Structure

Children (up to 21 years old) numbered 3737 in 1989, adults (21-64 years) numbered 8214 and seniors (65 and older) numbered 1901.

### Education

For those 25 years and older, 2906 had no high school diploma, 2868 had graduated from high school, 1826 had some college, and 1750 had a Bachelor's or higher degree.

### Housing

There were 5881 housing units, 4952 of which were occupied and 929 were vacant. Of those occupied, 4004 were owner-occupied and 948 were rented. The median value of the owner occupied units was \$149,300 and the median year all housing structures were built was 1962.

### Racial and Ethnic Composition

The overwhelming majority of the population was white with 13,834 individuals and 18 Asian (all Korean). The only ancestries noted by more than a hundred or so individuals were Portuguese (4370), French (1861), English (1769) and Irish (1177).

## *Economic Context*

### Income

The median household income in 1989 was \$37,092 and per capita income was \$15,525.

### Employment

#### INDUSTRY

Universe: Employed persons 16 years and over

<b>Agriculture, forestry, and fisheries (000-039)...</b>	<b>140</b>
Mining (040-059)...	0
Construction (060-099)...	732
Manufacturing, nondurable goods (100-229)...	687
Manufacturing, durable goods (230-399)...	743
Transportation (400-439)...	249
Communications and other public utilities (440-499)...	151
Wholesale trade (500-579)...	213
Retail trade (580-699)...	1267
Finance, insurance, and real estate (700-720)...	528
Business and repair services (721-760)...	305
Personal services (761-799)...	157
Entertainment and recreation services (800-811)...	108
Professional and related services (812-899):	
Health services (812-840)...	424
Educational services (842-860)...	699
Other professional and related services (841, 861-899)...	298
Public administration (900-939)...	311

#### OCCUPATION

Universe: Employed person's 16 years and over

Managerial and professional specialty occupations (000-202):	
Executive, administrative, and managerial occupations (000-042)...	983
Professional specialty occupations (043-202)...	929

<sup>68</sup> <http://www.census.gov/cgi-bin/gazetteer>

Technical, sales, and administrative support occupations (203-402):	
Technicians and related support occupations (203-242)...	202
Sales occupations (243-302)...	931
Administrative support occupations, including clerical (303-402)...	1073
Service occupations (403-472):	
Private household occupations (403-412)...	22
Protective service occupations (413-432)...	75
Service occupations, except protective and household (433-472)...	467
<b>Farming, forestry, and fishing occupations (473-502)...</b>	<b>139</b>
Precision production, craft, and repair occupations (503-702)...	1124
Operators, fabricators, and laborers (703-902):	
Machine operators, assemblers, and inspectors (703-802)...	602
Transportation and material moving occupations (803-863)...	269
Handlers, equipment cleaners, helpers, and laborers (864-902)...	196

### *Transportation and Access*

Westport is served by the airport and port facilities of New Bedford. In addition, Interstate 195 and State Routes 24 and 140 provide access to the airports, ports, and intermodal facilities of Providence and Boston.

Principal highways are State Routes 88 and 177, U.S. Route 6, and Interstate Route 195.

Westport is a member of the Southeastern Regional Transit Authority (SRTA), which provides fixed route service between Fall River, Westport, Dartmouth, and New Bedford. SRTA and the Council on Aging also provide paratransit services for the elderly and disabled.

New Bedford Municipal Airport is a Primary Commercial Service (PR) facility with scheduled passenger flights.

### *Hospitals, schools, libraries*

No hospitals.

Westport Free Public Library

### *Fisheries Profile*

#### Commercial fishing and fisheries-related employment

##### *Harvesting structure*

The town dock is home to approximately 30 fishing vessels with lengths ranging from 16-65 feet. Eight of these vessels are wood, five steel, one aluminum, and the remaining 16 fiberglass. All of these fishing vessels are lobster boats. Some of them may change over to gillnetting when there are spring fish runs in the Housatonic tidal estuary. Full-time gillnetters are said to have been forced out of the fishery because the loss of days at sea has made it impossible to make a living finfishing. Others supplement their income dredging clams and quahogs. Some lobster boats tie up in June and take unemployment the rest of the year, but this is only adaptive for those whose boats work as corporations rather than private companies.

The pattern for fishing is to fish two days, remain home two days, fish two days. Fencing on one side of boat enables fishermen to stack traps higher without risk of losing them in rough weather.

##### *Processing sector*

There is one small fish processor in Westport.



*Support Services*

There are no bait houses, ice houses, fish brokers, dockside bars, or fish auctions in Westport. Fishermen go to New Bedford for bait or boat repairs. The four fish retailers provide ice to their customers, which is trucked in, or picked up in Tiverton.

Tripp Marine is a source of diesel fuel for the local lobster fleet, and is complemented by one small fish processor and four retail stores. Across from the commercial fishing docks are two marinas, a tackle shop, a recreational fishing supply shop, and marine railway. There are also eight seafood restaurants, a harbor master station, and one local inn.

*Employment (year-around and seasonal)*

Overall, it is estimated that there are 100 households in Westport directly dependent on the fishing industry, with another 20 to 30 retailing fish products or working in seafood restaurants.

Angler Corp—boat hauling  
 F L Tripp and Sons—boat equipment  
 Baker Boat Works—“classic small boat designs and plans”<sup>69</sup>  
 Ross Boats—boat manufacturing  
 Westport River Rovers—charter & rental  
 Falmen Fisheries Corp—commercial fishermen  
 Fall River Rod & Gun Club—fishing supplies  
 George T Leach & Son—marina  
 Bottoms Up Marine Svc—marine contractors  
 Sea-Walk Mgr—marine contractors  
 A & K Marine—outboards  
 Bayside Marine & Auto—outboards  
 JB Marine Svc—outboards  
 Westport Yacht Club—yachts

*Species, Seasonality*

Species commercially fished include cod, flounder (by-catch and recreational), crab, lobster, tuna, striped bass, dogfish, skate (by catch), monkfish (main target of gillnetters), bay scallops (varies year to year), whelks (by catch), sea bass (rod and reel, fish traps), softshell clams, and quahogs.

Recreational fishing and employment

On Line Charters

Captain Brad Sherman’s Charter Boat Service

Cultural role of fishing*History and museums*

A fishing monument commemorates the loss of lives at sea, and dates back to the early 1900s, with most of the names dating back to the time of the 19<sup>th</sup> century whaling industry.

In 1996 The Westport Fishermen’s Association began to lobby for a monument to residents lost at sea to be erected at Westport Point.

Fishing related organizations and their roles in the community and fishery*Commercial fishing associations*

The Westport Fishermen’s Association

Formed in the early 1980s by commercial fishermen, the association had 500 members in 1996.<sup>70</sup>

The Association has worked to improve the Westport River estuary and its water quality and participated in the Bay Scallop Restoration Project that began in 1993. The main objective of the project was to enhance scallop stocks by applying a modified Japanese technique of placing artificial spat collectors near adult scallops held in rafts at various locations within the estuary.

<sup>69</sup> <http://www.by-the-sea.com/bakerboatworks/>

<sup>70</sup> <http://www.s-t.com/daily/12-96/12-15-96/c06lo096.htm>

The Eastern Massachusetts Shellfishermen's Association manages the rich beds of shellfish far up into the headwaters of the river system. They stage fundraisers to help them pay for their cultivation activities, using the funds to buy and raise quahog seeds and seeds flats. They are experimenting with cultivation of their own shellfish spat.

## Perceptions of the Fishing Community<sup>71</sup>

### Boundaries

Capital contacts can be divided up into those encompassing social capital (e.g., visit friends, go for recreation, go for vacation, visit relatives, socialize, go to church); economic (e.g., sell fish, offload fish, buy fishing gear, haul out for boat repairs, go to the bank, go shopping), and human (e.g., go to school, go for childcare, go for health care, go for retraining).

Sell Fish	Sakonnet Point/Westport
Offload Fish	Westport
Buy Fishing Gear	New Bedford/Tiverton
Buy Fuel/ Oil	Westport-delivered at the dock
Haul out Boat Repairs	New Bedford/Fairhaven/Providence
Bookkeeping	Westport
Banking	Westport
Shopping	Fall River/New Bedford/Dartmouth
Go to Church	Westport
Got to School	Westport/Fall River/Providence
Go for Health Care	New Bedford/Fall River/Westport
Go for Childcare	Westport
Visit Relatives	Westport
Visit Friends	Westport
Go for Vacation	Florida/New England
Socialize	VFW in Westport

### Communication Issues

Communication with local and state fishery managers is considered "very good," while communication at the federal level is considered "poor."

The contention of some Westport fishermen is that the federal managers do not spend time out in the communities, and that most appointees to the management council do not have enough knowledge of contemporary conditions of fishing or fisheries.

### Assessments

One key respondent "strongly disagreed" with the conclusions fishery managers draw. "They are trying to use scientific knowledge, but they don't really know what's going on. They'd have a better perspective if they came out on the boats and knew what was going on, rather than thinking they know what's going on."

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<sup>71</sup> Based on key informant interviews

### **Local management practices**

“Sea that has fewer traps means less maintenance, more bottom space for lobsters, less conflict with draggers. Some guys fish so many traps they leave them a month at a time. Don’t believe in fishing more than you can tend in two days. Even the offshore boats only fish 1000-1,500 from Westport.”

### **Economic Change**

The economic condition of fishing industry ten years ago was considered “average” (scallopers and draggers were said to be doing well, but lobster and gillnetting was considered down). Five years ago conditions were “good” and “scallopers were doing well.” Today, the economic conditions are only “fair”, as the conditions of the shellfish beds are down and restrictions on finfish cut into profits: *“Fishery by fishery there is great variation. Lobstering and gillnetting is doing well, and scallopers and draggers are doing worse due to Days at Sea reductions.”* Five years from now, the fishery is predicted to be “good,” unless regulations have a negative impact.

### **Effects of recent management**

Recent regulations having the most impact are those that limited days at sea and daily allowable catch of groundfish regulations, which has resulted in an increase of fishing pressure on the lobster stocks.

Lobstermen who had switched to full-time gillnetting are coming back to lobstering because so few days at sea are permitted for gillnetting.

*“Trap limits are a great idea. Open George’s Bank up on a part-time schedule. Close it during groundfish spawning seasons. The problem is big corporations are what the government is looking for, trying to drive the small ones out of the business.”*

### **Characteristics of local fishermen**

A “good fisherman” is someone who *“likes the outdoors, wants to work, and is pretty smart.”* A common trend for the “good fishermen” is that they are being forced to work longer hours, at higher risk, for less return. Despite longer hours, fishermen are unable to earn their full income from fishing. Key respondents in Westport only earned 65% of their income from fishing.

As effort has increased, more time is invested. Most significant recent changes are said to be an increase in the amount of gear in the water and lobster prices failing to increase at the same rate as inflation. With the intense competition in Westport for stocks, fishermen are highly independent, and with few kinship connections between boats, are not inclined to share information on fish conditions or stock conditions: *“I like to share information on fishing as much as I want to share my girlfriend. If you don’t have to share, you’re taking more lobster and doing better.”*

#### *Job satisfaction*

Commercial fishermen ‘like what they do’, but would like to “make more money doing it.”

### **Fishing families**

A key respondent indicated that most commercial Westport fishers were born in the community, though not necessarily to a fishing family.

County Profile  
Cape Cod & the Islands Sub-region

## **5.4. Cape Cod & the Islands Sub-region**

### **5.4.1. Barnstable County**

#### *Background*

“Barnstable County consists of the 15 coastal towns located on the peninsula known as Cape Cod. Bordered on the north by Cape Cod Bay, to the east by the Atlantic Ocean and to the south by Nantucket Sound, it is the easternmost point of land in the Commonwealth of Massachusetts. With over 550 miles of shoreline and more than 360 lakes and ponds, the maritime heritage of the region is deeply rooted. Approximately 396 square miles of land are home to over 205,000 year round residents, swelling to more than three times that number during the peak summer months.

The County seat is located in Barnstable Village on Historic Route 6A, the Old King's Highway, in the Town of Barnstable. County offices are located in the Superior Court House, the First District Court House and the Registry of Deeds and Probate Building.

Established as a County in the year 1685, the current boundary lines were drawn in 1707 and have not changed since that date. Although initially the counties of the Commonwealth were mainly judicial in nature, over time additional responsibilities were assigned by the state legislature. Subsequently, many counties served as subdivisions of the state government, serving as an administrative arm of the Commonwealth on a regional basis, but without legislative authority. This changed in Barnstable County with the passage of the Barnstable County Home Rule Charter, signed into legislation in July of 1988, which guaranteed certain rights of home rule for the county and established a legislative body with the power to enact ordinances. This increased Barnstable County's accountability to the residents of Cape Cod and provided for increased citizen participation and input in the function of County Government.

Barnstable County government has long been recognized as a model for successful regionalization of services, ranging from public safety to fiscal, health, human service, economic development, planning and land use functions.”<sup>1</sup>

#### **The Cape Cod Commission**

In the wake of an unprecedented growth boom in the 1980s, the Cape Cod Commission Act found that the region known as Cape Cod (Barnstable County) possesses unique natural, coastal, historical, cultural and other values which are threatened by uncoordinated or inappropriate uses of the region's land and other resources. Thus, the Cape Cod Commission was created in 1990 by an Act of the Massachusetts General Court and confirmed by a majority of Barnstable County voters.

The Commission was established as a regional planning and regulatory agency to prepare and implement a regional land use policy plan for all of Cape Cod, to review and regulate Developments of Regional Impact, and to recommend designation of certain areas as Districts of Critical Planning Concern.

The Commission is a department of Barnstable County and is funded by the Cape Cod Environmental Protection Fund.

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<sup>1</sup> <http://www.barnstablecounty.org/>

## COMMISSION MAKEUP

The Commission is made up of 19 members representing each of Barnstable County's 15 towns as well as the County Commissioners, minorities, Native Americans, and a governor's appointee. They are citizen volunteers who guide a professional staff to plan for Cape Cod's future growth, provide technical assistance to towns, review and vote on major developments and act as the Commission's liaison to their communities.

Commission planners and technical staff have expertise in a wide variety of areas including: landscape architecture, land use planning, economic development, affordable housing, historic preservation, wetland and wildlife resources, water resources, coastal resources, waste management, transportation planning, communications and computer mapping. Staff is available to discuss specific issues or projects with local officials, project proponents, and the public.

One example of a county-level service that has practical implications for the fishing industry of Cape Cod is their dredging service. "The Barnstable County Dredge *Codfish* provides dredging service to towns at approximately 70% below the market rate. The dredged material has been used to successfully renourish many of the Cape's beaches, while at the same time allowing ease of navigation in several harbors and riverways."

### *Fisheries Dependency*

The Cape and Islands is third, following Downeast Maine (1) and Upper Mid-coast Maine (2), on the dependency index that is based on the employment indices used in this project. The fishing infrastructure scale looks at individual ports, but several of the Cape Cod & Islands ports are listed among the top ports. For example, Chatham has a ranking of four, Vineyard Haven is ranked as nine, Sandwich is 14 out of the 36 ranked. Despite gentrification, these ports are actively engaged in the fishing industry.

Provincetown-Chatham are lumped together by *Fisheries of the United States, 1999*.<sup>2</sup> In comparison to other major U.S. ports 1998-99, Provincetown-Chatham numbered among the top 50 ports with landings of 17.8 million pounds in 1998 and 20 million pounds in 1999. The value of these landings was \$10.2 million in 1998 and \$12.9 million in 1999. While the price per pound was approximately the same as found in Pt. Judith, a port to which Chatham is often compared, the quantities landed were much smaller.

The profiles provide a more in-depth look at the social and cultural capital devoted to the industry.

### *Governance*

Barnstable County has two branches of government: the executive branch, the County Commissioners and the legislative branch, the Assembly of Delegates.

### *Demography*<sup>3</sup>

#### Population

The 1990 Census found 186,605 residents of Barnstable County. Of these 88,161 were male, 98,444 were female.

#### Age Structure

According to the 1990 Census, there were 44,733 children (under 20), 100,550 were adults (21 to 64), and 41,322 were 65 or over.

<sup>2</sup> *Fisheries of the United States, 1999*. U.S. Dept of Commerce, NOAA, NMFS. Prepared by Fisheries Statistics Division. Available at <http://www.st.nmfs.gov/st1/fus/fus99/index.html>

<sup>3</sup> <http://venus.census.gov/cdrom/lookup/>

### Education

Of persons 25 years and over, 15,588 had no high school diploma, 41,186 had graduated from high school, 39,590 had some college, and 37,587 had a Bachelor's or higher degree.

### Housing

There were 135,192 housing units, 77,586 occupied and 57,606 vacant. Of the occupied housing, 56,136 were owner occupied, 21,450 were rented. Median value of the owner-occupied housing was \$162,500 and the median year the structures were built was 1971.

### Racial and Ethnic Composition

Barnstable County was predominantly white (179,518 individuals) with Irish, English, and/or German ancestry frequently cited. There were also 2863 Blacks, 1158 American Indians/Eskimo, and 931 Asians.

### *Economic Context*

#### Income

The median household income in 1989 was \$31,766; per capita income was \$16,402.

#### Employment

For persons 16 and over, 2,655 selected "agriculture, forestry, and fisheries as their "industry" and 2,271 selected "farming, forestry, and fishing occupations" as their "occupation." Retail trade was the largest category for "industry" with 18,846, followed by construction (8191), health services (7314) and other professional services (7004).

Community Profiles  
Barnstable County, Massachusetts  
Cape Cod & the Islands Sub-region

### 5.4.1.1. Sandwich

#### *Background*

"Incorporated in 1639, Sandwich is the oldest town on Cape Cod. It is located on both sides of the Cape Cod Canal with the majority of its population and landmass on the southerly side of the canal. Sandwich is a mostly residential community with a winter population considerably smaller than the population during the warm summer. Residents feel that its charm and uniqueness combined with its ideal location make Sandwich a very attractive place both to live and visit."<sup>4</sup>

"Sandwich's beaches along Cape Cod Bay stretch for miles and provide a wonderful view on a clear day of the many vessels that pass through on their way to or from the Boston area. Commercial fishermen and lobstermen can be seen daily from the docks at the Sandwich Marina, the only harbor along the canal. Not too far from the marina is historic Sandwich Village which is a world-renowned tourist destination, providing a glimpse into New England's rich colonial history. Heritage Plantation, Sandwich Glass Museum, the Thornton Burgess Museum, Hoxie House (the oldest house on Cape Cod), Daniel Webster Inn, Dexter Grist Mill and various art galleries, rare book and antique stores are some examples of the attractions which bring visitors to Sandwich from all across New England and the world."<sup>5</sup>

A small fleet of commercial fishermen follows a long tradition of small-scale pursuit of lobster, shellfish and finfish. Sandwich, described by locals as a "fishing enclave," lies at the intersection of the lower mid-coast of Massachusetts with the inner and outer Cape and Islands.

Sandwich has a long history of fishing, including a now defunct herring fishery (local inhabitants used to catch herring in inshore waters which they pickled and sold by the barrels). Local fishermen also beach seined and did hook and line fishing. The proximity of the Cape Cod Canal now allows boats to bring in cod and other fish caught off the Cape to be processed then shipped out to New Bedford, or sold locally in nearby fish markets.

Many historic buildings, elegant bed and breakfast locations, museums and shops make the central district of Sandwich an attractive weekend tourist destination. However, the fishing and marina operations are located northwest of this central tourist corridor. Despite the well-developed tourist sector in the central town, there is little sign of gentrification or expansion that would threaten existing commercial fishing operations. Thus, like Plymouth, with its stabilized meld of gentrified tourism and well-maintained commercial fishing space, the cultural and economic capital of fishing has not been usurped by development.

#### *Governance*

Five-member, part-time, Board of Selectmen, Town Administrator and Town Meeting.

#### *Demography*

##### Population<sup>6</sup>

The population of the Town of Sandwich, per the 1990 US Census, was 15,489 persons (349 people per square mile of Town area). Of that total, 7,539 were males and 7,950 were female. The Sandwich population as of January 1, 1997 was 19,521.

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<sup>4</sup> <http://www.state.ma.us/dhcd/iprofile/261.htm>

<sup>5</sup> <http://www.state.ma.us/dhcd/iprofile/261.htm#NARRATIVE>

<sup>6</sup> <http://www.state.ma.us/dhcd/iprofile/>

Age Structure

According to the 1990 Census, there were 4664 children (under 21 years), 8641 adults (21-64) and 2184 seniors.

Education

Of persons over 25, 810 had not graduated from high school, 2659 had a high school diploma, 3310 had some college, and 3430 had a Bachelor's or higher degree.

Housing

There were 7,236 housing units, of which 5,557 were occupied and 1679 were vacant. Of those occupied, 4653 were owner-occupied and 904 were rented. The median year the structures were built was 1978 and the median value of owner-occupied housing was \$159,700.

Racial and Ethnic Composition

The majority of the population was white (15,146) with 97 Blacks, 35 American Indians, 123 Asians and 88 "other." Irish, English, Italian and German were the most common ancestries cited.

*Economic Context*Income

The median household income is \$43,500, rating 17.7% above the Massachusetts State average. Per capita income is \$17,412. Average household size is 2.74 persons per household. Four point eight percent of households are below the poverty line.

Employment

## INDUSTRY

Universe: Employed persons 16 years and over

<b>Agriculture, forestry, and fisheries (000-039)...</b>	<b>247</b>
Mining (040-059)...	7
Construction (060-099)..	664
Manufacturing, nondurable goods (100-229)...	226
Manufacturing, durable goods (230-399)...	369
Transportation (400-439)...	306
Communications and other public utilities (440-499)...	301
Wholesale trade (500-579)...	262
Retail trade (580-699)...	1528
Finance, insurance, and real estate (700-720)...	618
Business and repair services (721-760)...	317
Personal services (761-799)...	294
Entertainment and recreation services (800-811)...	91
Professional and related services (812-899):	
Health services (812-840)...	719
Educational services (842-860)...	505
Other professional and related services (841, 861-899)...	521
Public administration (900-939)...	357

## OCCUPATION

Universe: Employed person's 16 years and over

Managerial and professional specialty occupations (000-202):	
Executive, administrative, and managerial occupations (000-042)...	1080
Professional specialty occupations (043-202)...	1212
Technical, sales, and administrative support occupations (203-402):	
Technicians and related support occupations (203-242)...	226
Sales occupations (243-302)...	1393
Administrative support occupations, including clerical (303-402)...	951



Service occupations (403-472):	
Private household occupations (403-412)...	10
Protective service occupations (413-432)...	96
Service occupations, except protective and household (433-472)...	754
<b>Farming, forestry, and fishing occupations (473-502)...</b>	<b>198</b>
Precision production, craft, and repair occupations (503-702)...	896
Operators, fabricators, and laborers (703-902):	
Machine operators, assemblers, and inspectors (703-802)...	140
Transportation and material moving occupations (803-863)...	216
Handlers, equipment cleaners, helpers, and laborers (864-902)...	160
CLASS OF WORKER	
Universe: Employed persons 16 years and over	
Private for profit wage and salary workers...	4905
Private not-for-profit wage and salary workers...	477
Local government workers...	635
State government workers...	169
Federal government workers...	229
Self-employed workers...	887
Unpaid family workers...	30

### *Transportation and Access*

Sandwich is situated on Cape Cod, a 65-mile long sandy peninsula comprising Barnstable County. The Cape has excellent highway, rail, bus and air connections to other parts of New England. Air, bus, and passenger rail service expand during the summer months to accommodate the large numbers of tourists.

#### Major Highways

Principal highways are the Mid-Cape Highway (U.S Route 6), and State Routes 6A and 130. The portion of State Route 6A through Sandwich is a national historic district.

#### Rail

The Bay Colony Railroad provides freight rail service to Sandwich. The Cape Cod Scenic Railroad operates a seasonal excursion train between Hyannis and the Cape Cod Canal.

#### Bus

Sandwich is a member of the Cape Cod Regional Transit Authority (CCRTA), which operates a b-bus demand response service. The Plymouth and Brockton Street Railway Company provides bus service from the Sagamore Circle commuter lot to two locations in Boston.

#### Other

Barnstable Municipal Airport, a Primary Commercial Service (PR) facility, has two asphalt runways 5,249' and 5,430' long. Instrument approaches are available. Marstons Mills Airport, a privately owned public use facility, has 2 turf runways.

### *Hospitals, schools, libraries, museums*

#### Hospitals

Cape Cod Hospital (Hyannis)

Falmouth Hospital (Falmouth)

Jordan Hospital (Plymouth)

Tobey Hospital (Wareham)

Rehabilitation Hospital of the Cape & Islands (RHCI) (Sandwich)

#### Schools

Henry T. Wing School (K-8) 983 Students

Oak Ridge School (K-8) 1,038 Students

Forestdale School (K-8) 1,016 Students

High School (9-12) 982 Students

Upper Cape Cod Vocational Technical School (Bourne) 90 Sandwich Students as of 10-1-99

#### Library

Sandwich Public Library, founded 1891.

#### Churches

St. John's Episcopal, Corpus Christi (Catholic),

Forestdale Baptist, Covenant Baptist,

Sandwich Community Church of the Assemblies of God,

First Church of Christ,

Sandwich Meeting of Friends (Quaker)

#### Museums

Heritage Plantation of Sandwich

The Old Hoxie House

Sandwich Glass Museum

Thornton W. Burgess Museum

Yesteryears Doll & Toy Museum

### *Fisheries Profile*

#### Community

Because the commercial fishing infrastructure (fishing basin) is separate from the tourist attractions, there are no dockside restaurants, hotels/inns, bars, or clubs. The enclave nature of this small-scale site is indicated by the absence of infrastructure components such as boat builders, boat yards, boat dealers, a fish auction, seafood brokers, fishing monuments, maritime museums, or marine railways. Although fishing represents an historical activity, it has always been part of a mixed economy including tourism, agriculture, and transport.

Although the fishing infrastructure *per se* is not seen as threatened, the transformation of surrounding areas by road development, increasing numbers of homes and hotels, and an influx of what local fishermen regard as outsiders (i.e., Boston-type suburbanites), has increased the price of real estate, a potential concern in the long-term.

#### Commercial fishing and fisheries-related employment

##### *Harvesting structure*

A small fleet of six stern druggers pursues the multispecies groundfish fishery. This activity has been hampered by Days At Sea restrictions, and groundfishermen pursue shoreside activities, lobster fishing, or shellfishing when they are unable to earn enough trawl fishing. There are no purse seiners, urchin dive boats, or eastern rig trawlers, although there are several local divers who will occasionally fish for urchins. In addition, five scallop boats fish nearby. Until recently when regulations forbade targeting dogfish, gillnetters counted on catching them in the winter. Tuna are caught with rod and reel or harpoon.

The largest contingent of fishermen is lobstermen who set their traps in the inner Cape waters. However, there has been a noted decline in the lobster fishery, with fewer lobsters caught, some problems with shell rot disease, and a reduction in the size of lobsters.

### *Processing structure*

The major fish processing company in Sandwich is Canal Marine Fisheries. This business has six regular employees, including clerical staff, one manager and four laborer/truck drivers. They pick up six other workers as temporary employees, most of whom are from Mexico and Guatemala.

This fish processor/shipper/wholesaler has been in operation since 1938, and has links to businesses all throughout New England, as evidenced by the entourage of trucks from Massachusetts, Maine, Rhode Island, and even Fulton's in New York parked outside in the dock lot. However, their primary market remains a local one in seafood restaurants and local hotels (e.g., in Hyannis). The specialties of this processor include lobster, tuna dressed and shipped, and bait (herring, mackerel, and skate). Other species from the area sold and shipped include cod, fluke, dabs, summer flounder, yellowtail, haddock, and gray sole. Other less significant species caught or processed include crab, striped bass, dogfish, skate, monkfish, bluefish, scallops, and menhaden (pogies—also used for bait, and shipped in from New Jersey).

This firm is another example of the regional connections linked by total capital flows. The company regularly buys from at least 20 purse seiners from Portland to New Jersey and 10 midwater trawlers. They send out their trucks (of which they have two) to pick up fish or product is trucked in to this site from all across the region. Each day begins with a ritual of regional phone calls that goes on from the very early morning throughout the day. Connections are not just dockside but directly with vessels at sea that call in using cell phones to check market demand and price.<sup>7</sup>

Additional workers are usually Hispanic immigrants who are brought in as a group and paid minimum wage. These workers are identified by brokers who generally use vans to get groups of workers from their homes in such immigration centers as New Bedford, Chelsea, Lowell, to their job sites. The use of immigrant workers associated with brokers is also common in the seafood-processing sector of Gloucester, Boston, Point Judith and New Bedford.

### *Support Services*

Contemporary fishery infrastructure is adequate to maintain the existing activities. The infrastructure includes a fish retailer, air fill station for urchin divers, dockside diesel fuel, a dock with seasonal and year round transit slips, a fish processor, ice house, harbor master, one fish and tackle dealer, fish and seafood wholesaler, fish retailer, dockside welding service, cold storage warehouse, and four local seafood restaurants.

A small local grocer supplies food to the commercial sector, and operations are overseen by a harbormaster. The lack of fishing capital in boat building, net making, and roadside fish vending distinguishes Sandwich from some of the northern ports of the same size in Downeast Maine, for example.

Sandwich Marina, open year-round, has 180 commercial and recreational slips, water, electricity, showers, parking, a playground area, boat amp, winter storage, and can accommodate boats up to 70 ft.

The East Boat Basin located on the south side of the Canal in Sandwich has slips for recreational and commercial vessels. The area is leased from the Corps of Engineers to the Town of Sandwich for operation year round. On a fee basis, boaters may utilize the marina's slips or boat ramp.

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<sup>7</sup> One of the biggest knowledge deficits in the functioning of the Natural Resource Region and its sub-regions of New England is the regional flow of total capital represented in the marketing, shipment and consumption of fishery produce, and should be a topic of special consideration for research by the Department of Commerce.

On the west end of the Canal, the Buttermilk Bay channel provides boaters access to the Taylor Point Marina, which is owned and operated by the town of Bourne.

*Employment (year-around and seasonal)*

According to key respondents, the mix of commercial boats support approximately 70 commercial fishers, most of whom are engaged in lobster fishing.

According to key respondents, there are an estimated 200 households directly dependent on commercial fishing, and an additional 70 households that are indirectly dependent on the fishing industry.

*Marketing*

The parking lot of the Sandwich Fish Basin is filled with a sundry assortment of refrigerated small to mid-sized trucks, which vary with the season and availability of fish. There are two delivery trucks that purchase mackerel, and two trucks from Long Island that will pick up product and deliver herring from Maine for lobster bait. Seafood is brought into local markets through lobstering, tuna fishing, and gillnetting.

*Species, Seasonality*

Spring and fall are the peak fishing/ marketing seasons for lobster and winter for gillnetting. In the off season, some fishermen are involved in carpentry, while others may fish with rod and reel for striped bass, fluke, mackerel, and bluefish.

Until the recent rise of quotas for dogfish, fishermen would switch over to gillnetting, or long lining for dogfish and cod when dragging, lobstering, or shell fishing was poor.

Recreational fishing and employment

There are approximately ten recreational fishing vessels, which steam out of the protected basin marina via the canal to fish tuna, bluefish, striped bass, and other species. In addition, 4 charter boats are available for tuna fishing using rod and reel.

Fishing-related programs and services

An indication of the logistic importance of Sandwich is the presence of a Coast Guard facility, and a National Marine Fisheries Service extension office.

## Perceptions of the Fishing Community<sup>8</sup>

**Boundaries**

Of the 70 commercial fishermen who work out of Sandwich, only half live in the immediate area. The others come from Bourne and Plymouth because there are no slips presently available in their hometowns. Many of the commercial fishermen are on waiting lists for slips in these locations, but given the value of coastal property and the significance of tourism to the area, commercial fishing slip space will probably remain scarce.

Community contacts are linked to the patterns of fishing, and to the closed nature of the fishing enclaves that make up the coast. Plymouth was noted as the community that people had the most contact with. It is interesting that Hyannis has "bigger buyers" in the fishery, and is where most fish from Sandwich is sold. Hyannis is also highly gentrified with numerous seafood restaurants, hotels, and tourist industry infrastructure. Other community contacts were as follows:

Sell Fish	Hyannis
Offload Fish	Chatham

<sup>8</sup> Based on key informant interviews

Buy Fishing Gear	New Bedford
Buy Ice	Sandwich
Buy Fuel/ Oil	Sandwich
Haul out Boat Repairs	Sandwich
Book Keeping	Sandwich
Banking	Sandwich
Shopping	Sandwich or Hyannis
Go to Church	Sandwich
Got to School	Plymouth
Go for Health Care	Hyannis
Go for Childcare	Plymouth
Visit Relatives	Sandwich to Plymouth
Visit Friends	Sandwich to Plymouth
Go for Vacation	Florida
Go for Recreation	Plymouth, deep sea fishing
Socialize	Hyannis

### **Communication Issues**

Despite regulatory limitations, communication with management is overall a success. Communication with local fishery managers was rated as “good,” with state managers as “good,” and with regional federal managers as “good.” The overall mood is one of optimism that the fishery will sustain itself, and that management has done a good job in allowing the fishery of this region to continue to thrive.

### **Assessments**

There is clearly disagreement about the assessment of stock conditions between fishermen and scientists. Key respondents indicate that the groups “strongly disagree” on the conditions of stocks, and that fishermen see the ecosystem and supported fisheries in good shape, while the scientist are thought to be too rigid in interpreting conditions as in a state of collapse through over-fishing.

### **Local management practices**

Unlike Chatham, with its folk-managed shellfishing regime, there are no homegrown techniques for increasing stocks in this part of the Cape.

### **Economic Change**

As with small enclaves in Maine, the population of fishermen is stable, and the perception of several key respondents is that the fisheries here have been and will continue to be successful.

The perceived economic condition of the fishery over time has been good, with recent declines attributed to an increase in numbers of fishermen, particularly in the lobster-fishing sector. Ten years ago the fishery was “excellent,” and five years ago “good,” but today is rated as “average,” with a mark of “fair” anticipated for the fishery five years from now due to the perceived trend of an increasing number of fishermen and traps.

The one counterbalance to perceived declines from increased competition is an increase in the price of product, particularly for finfish. High quality finfish attracts high prices at the fish auctions in New Bedford and Gloucester. The demand fueling high prices is partially from the large urban marketing sector of Boston, which serves local restaurants as well as elite hotels and international customers in Japan, Canada, and western Europe.

Today, increased prices for quality fishery products has improved the standard of living of those in the local fishery, though a countervailing force is the increased cost of real estate stemming from an influx of "outsiders."

**Effects of recent management**

Regulations that are having the most impact for the Sandwich fishing enclave are trap limits for lobster, Days At Sea limits for dragnets, and tuna quotas for the charter boat and commercial tuna fishing sector.

**Fishing families**

Spouses of fishermen are working more outside the home today than five years ago, and this is significantly different from conditions five years ago.

Community Profiles  
 Barnstable County  
 Cape Cod & the Islands

### 5.4.1.2. Hyannis

#### *Background*

The town of Barnstable includes seven villages within its boundaries. Each village has unique and significant cultural and historical qualities. Centerville, located on the south side, is primarily residential, includes the Christian Camp Meeting Association and has a beautiful beach. Osterville is located on the south side, is primarily residential and includes inlets and harbors for fishing and boating. Hyannis is the town's central business/commercial district, which includes town offices and several shopping malls. Hyannis is also a fishing village and its harbor provides steamship access to Martha's Vineyard and Nantucket Islands. Marstons Mills is primarily residential and is located on Route 28. Cotuit is a village located on a peninsula on the south side, is primarily residential and has several small beaches. West Barnstable is primarily residential and sparsely populated. Barnstable is located on the north side that houses the County Complex and has a working harbor and several small beaches.<sup>9</sup>

Hyannis is one of the most gentrified of the Cape Cod ports, with a long history of catering to the upper class of New England Society. The port of Hyannis is replete with marinas, dockside seafood restaurants, hotels, seaside condominiums, and sports a festive elitist demeanor of wealth and leisure. Dozens of recreational craft jam the dock space, and slips are the most expensive in New England, costing one dollar a foot/day. The dockside space of marinas and recreational vessels are intermixed with curio shops, ice cream stands, parks, and back from the waterfront numerous hotels, antique shops, boutiques, and other tourist shops of all sorts.

Hyannis acts as a biophysical capital sink because of the high demand for seafood products, as evidenced by the numerous seafood restaurants that draw in much of the seafood catch from the region. A total of fifteen restaurants were counted dockside or just across the street from the docks, and numerous others up side streets and in the central part of town away from the docks. For example, the restaurant trade in Hyannis absorbs most of the seafood product processed in nearby Sandwich. Fish is brought in to be sold both retail and wholesale. In addition, there is a fish broker (North Atlantic Seafood, Boston) that buys directly from the docks in Hyannis. Hyannis is also the closest dock to areas having significant seasonal runs of valuable fish such as scup and fluke. This makes it attractive for vessels to offload fish here, but not to actually tie-up for any length of time.

In line with the tourist orientation of the port are whale watching tour operations, and pleasure ferry boats to take clients around the harbor and return them to enjoy numerous restaurants, bars and dockside clubs.

#### *Governance*<sup>10</sup>

Mayor - Council

#### *Demography*<sup>11</sup>

##### Population

The 1990 Census found 40,958 residents of the town of Barnstable, while the village of Hyannis was 14,120. In the town as a whole there are 19,552 males, 21,406 females, while Hyannis itself was 6,591 male and 7,529 female.

<sup>9</sup> <http://www.state.ma.us/dhcd/iprofile/020.HTM>

<sup>10</sup> This is for the Town of Barnstable

<sup>11</sup> <http://venus.census.gov/cdrom/lookup/>

Age Structure

According to the 1990 Census, in the town of Barnstable, 10,028 were children under 21 years and 22,562 were adults (21 to 64), 8358 were 65 or over. In the village of Hyannis, there were 3,333 children (20 and under), 7885 adults (21 through 64) and 2902 seniors (65 and older).

Education

Of persons 25 years and over in the town of Barnstable, 3,265 had no high school diploma, 8787 had graduated from high school, 8716 had some college, and 8197 had a Bachelor's or higher degree. In Hyannis, 1786 had no high school diploma, 3444 were high school graduates, 2,795 had some college and 1751 had a Bachelor's or higher degree.

Housing

In Barnstable, there were 23,377 housing units, 16,607 occupied and 6770 vacant. Of the occupied housing, 11,772 were owner occupied, 4,835 rented. Median value of the owner-occupied housing was \$159,400 and the median year the structures were built was 1973.

In Hyannis, there were 8340 housing units, 6022 occupied and 2318 vacant. Of those occupied, 3037 were owner-occupied and 2985 were rented. The median value of owner-occupied housing units was \$127,800 and the median year housing units were built was 1969.

Racial and Ethnic Composition

Almost 93 percent of the population of Barnstable was white in 1989 (38,565 individuals) with 2.85 percent Black (1169 individuals), 345 American Indian/Eskimo, and 248 Asian. Like the rest of the town, the village of Hyannis had a white majority at the time of the 1990 Census (12,638 individuals), with 791 Blacks, 176 American Indian/Eskimo, and 100 Asian.

*Economic Context*Income

The median household income in the town of Barnstable in 1989 was \$33,411; per capita income was \$17,376. The median household income in Hyannis at the same time was lower at \$25,492 and the per capita income was \$14,053.

Employment

In the town of Barnstable for persons 16 and over, 500 selected "agriculture, forestry, and fisheries as their "industry" and 406 selected "farming, forestry, and fishing occupations" as their "occupation." Retail trade was the largest category for "industry" with 4,272, followed by construction (1763), health services (1714) and finance, insurance and real estate (1448).

In Hyannis, though considered the fishing village of Barnstable, the numbers indicated by the Census shows that the individuals involved in the fishing industry actually live all over the town, though their vessels and jobs might be based in Hyannis.

## INDUSTRY (for Hyannis)

Universe: Employed persons 16 years and over

<b>Agriculture, forestry, and fisheries (000-039).</b>	<b>108</b>
Mining (040-059)...	0
Construction (060-099)...	609
Manufacturing, nondurable goods (100-229)...	333
Manufacturing, durable goods (230-399)...	326
Transportation (400-439)...	283
Communications and other public utilities (440-499)...	187
Wholesale trade (500-579)...	115



Retail trade (580-699)...	1880
Finance, insurance, and real estate (700-720)...	384
Business and repair services (721-760)...	239
Personal services (761-799)...	436
Entertainment and recreation services (800-811)...	70
Professional and related services (812-899):	
Health services (812-840)...	680
Educational services (842-860)...	341
Other professional and related services (841, 861-899)...	467
Public administration (900-939)...	221

#### OCCUPATION (for Hyannis)

Universe: Employed persons 16 years and over	
Managerial and professional specialty occupations (000-202):	
Executive, administrative, and managerial occupations (000-042)	735
Professional specialty occupations (043-202)...	822
Technical, sales, and administrative support occupations (203-402):	
Technicians and related support occupations (203-242)...	134
Sales occupations (243-302)...	873
Administrative support occupations, including clerical (303-402)...	999
Service occupations (403-472):	
Private household occupations (403-412)...	32
Protective service occupations (413-432)...	43
Service occupations, except protective and household (433-472)	1266
<b>Farming, forestry, and fishing occupations (473-502)...</b>	<b>97</b>
Precision production, craft, and repair occupations (503-702)...	877
Operators, fabricators, and laborers (703-902):	
Machine operators, assemblers, and inspectors (703-802)...	255
Transportation and material moving occupations (803-863)...	306
Handlers, equipment cleaners, helpers, and laborers (864-902)...	240

#### CLASS OF WORKER

Universe: Employed persons 16 years and over	
Private for profit wage and salary workers...	4832
Private not-for-profit wage and salary workers...	628
Local government workers...	415
State government workers...	166
Federal government workers...	119
Self-employed workers...	503
Unpaid family workers...	16

#### *Transportation and Access*

Barnstable is located on the "biceps" of the Cape Cod arm. Bordered by Cape Cod Bay on the north, Nantucket Sound on the south, Sandwich and Mashpee on the west and Yarmouth on the east. Barnstable is 53 miles east of Fall River, 69 miles southeast of Boston, and 250 miles from New York City.

#### *Fisheries Profile*

##### Commercial fishing and fisheries-related employment

### *Harvesting structure*

There are only eight commercial vessels in the port of Hyannis, including two eastern rigs, two lobster boats, two stern trawlers, and two scallop vessels. Two of the boats also fish for sea urchins.

Key respondents estimate that fishing directly supports twenty-five (25) households. This is based on a calculation that there are three to four individuals (captain and crew) per vessel. The eastern-rigged vessels and stern draggers are large (56-60 feet in length) and are able to compensate for their expensive dockside costs through the excellent prices they receive for their fresh fish and shellfish.

### *Support Services*

Slips are the most expensive in New England, costing one dollar a foot/day. Thus, a commercial dragger of 65 feet must pay \$65 dollars a day to hold a dockside space. Most commercial fishing vessels cannot support such prices.

There are no air fill stations, bait houses, boat yards, boat dealers, fish auctions, fishermen's associations, fish processors, ice houses, net makers, niche fisheries, or marine railways. An absence of significant fishing infrastructure echoes sites such as Newport, Rhode Island, which has been shaped by a long history of coastal tourism.

Nevertheless, because of the well-developed recreational fishery, there are some infrastructure components that allow the fishing industry to keep a foothold in the community. These include a harbor masters office, marinas, fish retailers, a fishermen's supply store, fish and tackle dealers, wholesale fish and seafood dealers, marine insurance companies, dockside welding services, and a dockside diesel fuel facility.

### *Employment (year-around and seasonal)*

A key respondent estimated that besides 25 households directly dependent on fishing, there are at least another 300 households in the area that are indirectly dependent, ranging from owners of retail businesses and seafood restaurants to those who buy seafood for the dinner table.

### *Marketing*

While the summer is a boon time for seafood, a large resident population, including a large number of retired persons who live in the town of Barnstable, maintain the demand throughout the year.

Truck brokers come from Boston to take advantage of local runs of valuable fish, and park their trucks adjacent to a small dockside area where boats come in, unload their catch, and then spin out and leave, making way for the next boat in line. This "unloading derby" spectacle is one of the regional adaptations commercial fishermen have developed in response to declining fishing infrastructure along the coast and specifically to combat expensive docking fees. Thus, boats from Sandwich, Plymouth, Scituate, and elsewhere may fish off Hyannis and unload their catch to be transported quickly to market in a refrigerated truck. By unloading locally, they maintain a high quality of catch, and thus optimize their price on the market.

### *Species, Seasonality*

The local catch of fish and shellfish species is quite diverse, and includes cod, fluke, winter flounder, yellowtail, haddock, pollock, squid, lobster, swordfish, tuna, scup, monkfish, scallop, sea clams, and conch.

There are no alternative or niche fisheries that people are switching over to.

## Perceptions of the Fishing Community<sup>12</sup>

### Importance of fishing to the community

Like Kennebunkport, Maine, which is also highly gentrified, key respondents in the fisheries of Hyannis perceive fishing as being “very important”.

### Boundaries

Capital contacts can be divided up into those encompassing social capital (e.g., visit friends, go for recreation, go for vacation, visit relatives, socialize, go to church); economic (e.g., sell fish, offload fish, buy fishing gear, haul out for boat repairs, go to the bank, go shopping), and human (e.g., go to school, go for childcare, go for health care, go for retraining).

People in the fishing community are said to have the most contact with New Bedford, while others are mostly linked to off Cape areas such as Boston. Other community contacts were as follows:

Sell Fish	Hyannis, Chatham, Boston
Offload Fish	Hyannis, Chatham, Boston
Buy Fishing Gear	New Bedford
Buy Ice	New Bedford
Buy Fuel/ Oil	Hyannis
Haul out Boat Repairs	Provincetown, New Bedford
Book Keeping	Hyannis
Banking	Hyannis
Shopping	Hyannis
Go to Church	Hyannis
Got to School	Hyannis
Go for Health Care	Hyannis
Go for Childcare	Hyannis
Visit Relatives	Hyannis, out-of-state, everywhere
Visit Friends	Hyannis
Go for Vacation	Florida, White Mountains
Go for Recreation	Bars
Socialize	Hyannis

### Communication Issues

There is optimism that groundfish catches and local stocks are on the rebound, and communication with management is considered overall a success. Specifically, communication with local fishery managers was rated as “good,” with state managers as “excellent,” and with regional federal managers as “very good.”

### Assessments

Fishermen “strongly disagree” with the assessment of stocks, and are particularly concerned about having to throw back fish when quotas are exceeded, which is a thought to happen frequently.

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<sup>12</sup> Based on key informant interviews

### **Economic Change**

Fishing conditions and the standard of living were regarded as “stable.” The perceived economic condition of the fishery is that it has declined somewhat, but is rebounding now from the virtual collapse of groundfish stocks. Ten years the fishery was noted as “good” and five years ago as “good,” but today is rated as “average,” with a rating of “very good” expected for the fishery five years from now. Today increased prices for quality fishery products have generated more income and thus have compensated for the increasingly complex and constantly shifting regulatory climate.

### **Effects of recent management**

Although the population of fishermen is threatened by the lack of overt local community support, there are no specific regulations that key respondent alluded to as having had a significant impact on recent fishing conditions.

The overall mood is one of optimism. Key respondents believe that if they can maintain some dockspace, the high local demand and presence of trucking fish brokers will allow them to continue their lifestyle. Overall, they feel that management has done a good job in allowing the fishery of this region to continue to thrive.

### **Characteristics of local fishermen**

#### *Job satisfaction*

Even though they have a tenuous hold on dock space, fishermen are perceived by key respondents to be “very satisfied with their work.” Unfortunately, the position of the commercial fleet is precarious because of the extremely limited dock space, and the town council is perceived as being “uncaring” when it comes to the commercial fishing industry.

There are occasional workers who come to try their hand on the few boats here, but leave after a short time. These “shackers” as they are called, come and go with the seasons but are most abundant in summer when tourism creates a high demand for seafood in local restaurants.

### **Fishing families**

Although spouses of fishermen are working outside the home today, this is not significantly different from conditions five years ago.

Community Profiles  
Barnstable County  
Cape Cod and the Islands Sub-region  
Author: Renee Gagne<sup>13</sup>

### 5.4.1.3. Chatham

#### *Background*

Chatham, Massachusetts is a small (population 6,600 in 1989) coastal town within Barnstable County, better known as Cape Cod. Cape Cod is a sandy peninsula extending off the southeastern coast of Massachusetts, 65 miles east into the Atlantic. The peninsula then turns to the north and curves back toward the northwest, giving the whole landmass an appearance of a flexed arm. Chatham is located at the elbow of this arm. Covering approximately 17 square miles, it borders the waters of the Atlantic to the east and Nantucket Sound to the south. This geographical location has spawned the diverse fisheries found in Chatham today. A few miles to the east are fertile groundfish grounds, once teeming with cod, haddock, flounder and pollock. To the south, the warmer waters of Nantucket Sound support coastal fisheries such as scup, mackerel, black bass and squid. The convergence of cold Atlantic waters and warmer coastal waters also promote conditions for successful shellfisheries.

A location close to a fertile fishing ground is not necessarily sufficient for successful fisheries. More importantly, Chatham has natural access to both the eastern and southern fishing grounds. The Chatham Fish Pier is located at Aunt Lydia's Cove along the east facing shore. A barrier beach protects Aunt Lydia's Cove from a direct assault of the Atlantic. This barrier beach also provides access to the Atlantic through an ever-changing inlet. Through a process of erosion and disposition, the beach breaches and repairs itself, creating often-dangerous shoal conditions for fishermen entering and exiting the cove.

The Town Pier includes unloading facilities for two private fish companies, as well as berthing areas to the north and south of the facilities for the loading and unloading of fish and fishing gear. The facilities are maintained by the Town and are dedicated solely to commercial fishing endeavors, though the town maintains a floating dock seasonally for public access. The fleet primarily targets Georges Bank stock groundfish and dogfish.

Along the south facing shores, Stage Harbor, also a port of Safe Refuge maintained by the Army Corps of Engineers, houses a smaller groundfish fleet as well as a number of diverse seasonal fisheries such as weir and tuna fisheries. The town provides an area for both residential and commercial use and maintains a boat ramp. Increased usage of these facilities has prompted recent regulations for limiting usage to residents only. Stage Harbor also has a number of private docks dedicated to commercial fishing enterprises.

Chatham also encompasses lesser bays, coves, salt-water ponds and Monomoy Island, all ideal habitats for a variety of shellfish. These areas support an extensive shellfish industry. The dominate shellfisheries are quahogs and soft-shell clams, but many other shellfisheries, such as mussels, sea clams and bay scallops, are seasonally significant.

Chatham was first settled in 1656 and was incorporated in 1712, making it one of the Cape's earliest townships.<sup>14</sup> Names of the original Yankee settlers are still prominent in the town and include names such as Nickerson, Eldredge and Ryder. As with the majority of the Cape, long before the colonists arrived, Native Americans utilized the benefits of both the land and shore for farming and marine harvesting. Archaeological sites have indicated a number of seasonal

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<sup>13</sup> This profile reflects the detail that is possible when a skilled and local participant-observer is able and willing to collaborate on a research project.

<sup>14</sup> <http://www.state.ma.us/dhcd/iprofile/055.htm#NARRATIVE>

settlements along the east facing shores of Cape Cod. Settlers of Chatham first established the town as a farming community and old pictures indicate a treeless landscape well into the early 1900s. But founding families soon found the surrounding waters more profitable than the thin-soiled land for their survival. To this day, fishing, shellfishing and their shore-side support industries are a major source of employment and income for the town of Chatham.

### *Fishing Dependency*

As noted in the introduction to this sub-region, Chatham is ranked fourth on the scale of infrastructure differentiation, after New Bedford, Portland and Gloucester. Though small, Chatham has a devoted fleet and a thriving shellfish industry and a complex of support services. As part of the Cape Cod and Islands sub-region, Chatham ranks third for dependency after Downeast and Upper Mid-coast Maine based on employment indices for the sub-region. As an individual community, Chatham is 14<sup>th</sup> on the gentrification scale.

### *Governance*

The Town of Chatham adopted a new Town Charter in 1995. The Town employs a Town Manager who is appointed by a five-person Board of Selectmen. The Town Manager administers the day to day affairs of the town as well as staffs and oversees all Town departments, except the regulatory boards. The part-time Board of Selectmen is the policy making body of the town. The Board meets weekly in a public forum, to discuss and finalize policy. Although comments from the public are encouraged, decisions from the Board are final (unless challenged in a court of law). The Board also signs-off on and presents the yearly budget at an annual open Town Meeting. The open town meeting forum of government is a process dating back to colonial times that allows the voting residents to approve or revise the Town's operating budget. Residents also vote on a variety of articles dealing with any appropriations over and above the operating budget.

With the adoption of the new Town Charter, many aspects of the Town's government were reorganized. All departments concerning Chatham waterways and shore-side issues were consolidated under the Coastal Resource Department (CRD) including the Harbormaster, Shellfish and Permit Offices. The Director of the Coastal Resource Department oversees the various harbor management plans throughout the Town and participates on coastal and water-related committees. The Director also participates in the planning and implementation of coastal-related capital projects such as dredging and reconstruction of municipal shore-side facilities.

### *Demography*

#### Population

Chatham's year-round population according to the 1990 US Census information is 6,579. Simple observation indicates a significant increase in population numbers over the last ten years. Service industries such as small shops and restaurants, once closed during the winter months, now remain open year-round. New and large chain stores are on the increase (over the border in East Harwich) and resemble the larger urban areas of Hyannis and Falmouth. Traffic, though it subsides greatly from the summer months, has increased yearly during the off-seasons. All these indicate a population supporting these enterprises. Also important is the swell of Chatham's population in the summer months. Though there is no official count of Chatham's summer population, the Chatham Police Department estimates this to be between 25,000-30,000.<sup>15</sup>

It is interesting to note that Chatham was one of the communities chosen by the Federal Government to apply a door to door census taking along with the long form for the 2000 US

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<sup>15</sup> Friends of Chatham Waterways, An Economic Study of the Town Chatham, Massachusetts, (December 1996), 12.

Census. Federal Census takers asserted that this method was applied to towns estimated to have had major changes in their population.

### Age Structure

Census information indicates the largest portion of Chatham's senior population was between the ages of 70 and 74 numbering 587, the second largest group was between the ages of 65 and 69 numbering 564, and the third largest was between the ages of 75 to 79 numbering 473 (for a total of 1624 seniors). According to a study conducted in 1996, the distribution of Chatham's over 65 population was then one-third of the total population and was more than twice the state's average as well as Barnstable County's.<sup>16</sup> Hence, Chatham's demographic profile supports the view that it is, in some respects, a "retirement town." Total persons between the ages of 19 and 64 totaled 3,293, while those persons under the age of 18 totaled 1,045.

### Education

There are two schools in Chatham, an elementary school spanning grades K through six and a high school spanning grades seven through twelve. The 1990 data indicates 538 students attended Chatham's public schools while 31 students attended private institutions. Massachusetts Department of Education statistics shows an increase in enrollment in 1998 with 685 students. Enrollment increased again in 1999, according to the 1999 Annual Reports of the Town Officers,<sup>17</sup> with 707 students. The increase in enrollment may be due to the School Choice Program instituted in recent years allowing Barnstable County residents to choose which school a student attends. Ninety of the total student population in 1999 came from other Cape towns.

The school ethnic make-up reflects the overall Town make-up. According to Massachusetts Department of Education statistics for 1998-1999, 96.8% of the public school student population was white, a 19.7% difference from the overall State statistic of 77.1% white student population.

The amount of monies spent per student also differed from the State average. In the 1997-1998 school year, Chatham spent \$7,743 per child while the State average was \$5,221. Chatham also surpassed the State in special education spending per child by \$7,625, although Chatham did not dedicate any funds to bilingual or vocational education programs.

Chatham students may also opt to enroll in other Cape towns' schools, although the numbers who do so is unknown. The primary alternative choice is the Cape Cod Technical High School located in the bordering town of Harwich. Thirteen Chatham students attend Cape Cod Tech. The Tech school provides vocational and technical education and also offers adult education and training programs.

### Housing

Since the mid-1800's Chatham has attracted a summer resident population. Wealthy families from New York and Connecticut built large summer retreats along the picturesque shoreline. With the advent of the automobile, those of lesser means built smaller summer cottages and camps. Today, many homes are simply summer or part-time residences. According to the 1990 U.S Census, close to half of the town's 6,301 total housing units were vacant. Also 2,333 housing units were owner occupied, while 690 were renter occupied.

These statistics are bound to change greatly with the 2000 US census. According to the Cape Cod Commission, as of January 1997, housing units increased by 337.<sup>18</sup> Between the beginning of 1997 and 1999, housing units further increased by 200, for a total of 6,838.<sup>19</sup> From January through March 2000, a total of 38 permits for new single family dwellings have been issued

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<sup>16</sup> Ibid.

<sup>17</sup> Town of Chatham, Annual Reports of the Town Officers of the Town of Chatham 1999

<sup>18</sup> Cape Cod Commission, CapeTrends, Barnstable County-Cape Cod, 4<sup>th</sup> edition, 1997. 47.

<sup>19</sup> Tim Woods, "Moratorium Talk Prompts Spike in New House Permits", The Cape Cod Chronicle, 27 April 2000

almost half of the total issued for all of 1998 with 78 permits.<sup>20</sup> Taxing of resources such as ground water and nitrogen loading of coastal waters by septic systems has prompted discussion on a building permit moratorium. A recent study by the Friends of Chatham Waterways showed approximately 750 buildable lots remain, with a few more “substandard” lots that could potentially be deemed as buildable dependent on zoning criteria.<sup>21</sup>

Sales of single family home sales have also jumped, from 55 in 1998 to 256 in 1999, a 365% increase,<sup>22</sup> the highest of any Cape town. Values of single family homes have also increased in value. In 1994, the median price for a residential sale was \$172,000<sup>23</sup> while current median residential sales is \$237,000.<sup>24</sup>

The increased value of single family dwellings has all but eliminated affordable housing for Chatham residents earning low to moderate incomes. These residents are often in service or labor fields of employment including fishing and shellfishing. Concern has prompted town officials to examine the issue of affordable housing. Only 3% of Chatham’s housing stock can be classified as “affordable” while the State recommends a 10% housing stock designated as “affordable.”<sup>25</sup> The Town Manager recently proposed creation of an Affordable Housing Committee to first assess the Towns housing needs and second to propose a housing plan.

Rental units are also of concern. The 1990 census shows 690 units as rentals and no new estimates are available. Yet competition for existing rentals is evident. A recent article in *The Cape Cod Chronicle* indicated 75 calls within the first few hours of a room for rent listed in the classifieds. With the increased value of homes, owners are opting to sell or seasonally rent single family homes instead of renting them year-round. According to three shellfishermen who lost a year-round rental recently, the three were forced to rent a summer rental at \$1200 each a month<sup>26</sup>. The Chatham Housing Authority, organized by State mandates,<sup>27</sup> subsidized eight families with rental vouchers in 1999.

The number of households indicated in the 1990 US Census was 3,023. The majority of those households were married couples at 1,649 although 1,107 were listed as non-family households.

#### Racial and Ethnic Composition

Chatham is above the U.S. average for “white” persons at 6,485 in 1990 or 98.6% of the total population. The total US percentage of “white” was 83.0% in 1990. Those of Hispanic origin rated as the second highest population at 37 persons followed by blacks at 29 persons.

Those families with the longest traditions in Chatham are culturally from “Old Yankee” stock. They are perceived by many to be non-demonstrative, conservative, and frugal people who seem to innately know the Town’s family tree. All other residents, even those with a generation of residency, are considered “wash-a-shores.”

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<sup>20</sup> Town of Chatham, Annual Reports of the Town Officers of the Town of Chatham 1999, 165.

<sup>21</sup> Michael J. Pessolano, Consultant, “Draft: Vacant Substandard Lot Study.” Friends of Chatham Waterways, February 12, 2000.

<sup>22</sup> Ibid.

<sup>23</sup> Friends of Chatham Waterways, An Economic Study of the Town Chatham, Massachusetts, 1996, 34.

<sup>24</sup> Cape Cod Chronicle, 27 April 2000.

<sup>25</sup> Tim Wood, “Town Manager to Recommend affordable Housing Committee” Cape Cod Chronicle, 27 July 2000.

<sup>26</sup> In order to shellfish in Chatham, one must be a full-time resident of the town for at least one year beginning May 1<sup>st</sup> of a given year.

<sup>27</sup> Massachusetts General Laws, Chapter 121B, Section 3.



## *Economic Context*

### Income

The median household income for Chatham ranked eight out of the 15 towns within Barnstable County with \$31,315 in 1989 (1990 US Census). However, Chatham ranked 2<sup>nd</sup> behind its neighbor Orleans with a per capita income of \$18,471 in 1989 (1990 US Census). The median household income fell below that of the State, while the per capita income was slightly higher than the State. The higher per capita income may be due to high retirement income.

The majority of income was derived by wage and salary sources with 1,637 households earning an average income of \$33,440 in 1989. The second highest source of household income was derived from the non-farm self-employment sector, which included fishermen, shellfishermen, land-based support industries and construction work.

### Employment

At a glance, Chatham is the quintessential summer community, with the majority of visible labor sectors dedicated to summer residents and tourists. Federal and State figures concur with those visible industries. According to the 1990 US Census, 2,583 residents were employed while 129 persons were unemployed. Further census data shows the service industries as employing the majority of residents with 887 individuals. The second largest industry employer group was the wholesale and retail trade numbering 541 followed by construction at 261 individuals.

The State of Massachusetts' Division of Employment and Training figures for 1995 show an increase in employed residents totaling 3,231 persons.<sup>28</sup> A breakdown into labor sectors shows the following:

### *EMPLOYMENT TRENDS BY INDUSTRY 1995<sup>29</sup>*

Industry Sector	Employment
Agriculture, Forestry & Fishing	78
Construction	110
Transportation & Public Utilities	40
Wholesale & Retail Trade	1,011
Finance, Insurance & Real Estate	87
Services	1,593
Manufacturing	26
Government	286
<b>Total Employed</b>	<b>3,231</b>

Unfortunately, Federal and even State data sources do not present an accurate picture of Chatham's total employment history. While the Federal figures are out-dated, State figures of employment exclude the self-employed and requires employers of "Agriculture, Forestry and Fishing" labor to report only if employing 10 or more employees.<sup>30</sup> A report by Friends of Chatham Waterways utilized Chatham's Town Census to more fully understand the employment structure of the town. The following shows a breakdown of employment utilizing categories that conform to the federal Standard Industrial Classification in the 1996 Town Census:

<sup>28</sup> Figures show average annual employment

<sup>29</sup> Cape Trends, Barnstable County-Cape Cod, 4<sup>th</sup> Edition 1997 & Massachusetts Division of Employment and Training

<sup>30</sup> Friends of Chatham Waterways, 22.

**CHATHAM EMPLOYMENT BY MAJOR ECONOMIC SECTORS<sup>31</sup>**  
**1996 CHATHAM TOWN CENSUS**

<i>ECONOMIC SECTORS</i>	<i>PERCENTAGE OF EMPLOYMENT</i>
Fishing	<b>12</b>
Building Trades	<b>11</b>
Finances, Real Estate	<b>10</b>
Retail Trade	<b>10</b>
Professional Business Services	<b>8</b>
Health Services	<b>8</b>
Misc. Business Services	<b>8*</b>
Education Services	<b>7</b>
Hotels, Restaurants	<b>7*</b>
Landscaping	<b>4</b>
Family services	<b>3</b>
Government	<b>3*</b>
Boatyards, Transportation	<b>3*</b>
Other	<b>7</b>

\*Approximate percentage of total

State figures for 1995 put the percentage of those in agriculture and fishing occupations at 2% of total employment. A Friends of Chatham Waterways report found employment in agriculture and fishing occupations to be 16% of total employment,<sup>32</sup> far different from the State's 2%. Fishing itself is the greatest employer in Chatham at 12% when the service sectors of employment are further broken down as in the above table. This more realistic view of Chatham's labor force is the first indication of the importance of the fishing industry to Chatham.

Another important aspect to consider when examining Chatham's true employment picture is its annual rate of unemployment. The majority of the service industries cater to seasonal visitors and tourists. The following depicts the fluctuation of unemployment throughout the year.

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<sup>31</sup> Friends of Chatham Waterways

<sup>32</sup> Friends of Chatham Waterways, 25.

**LABOR FORCE AND UNEMPLOYMENT IN CHATHAM<sup>33</sup>**  
**1996**

<i>MONTH</i>	<i>LABOR FORCE</i>	<i>UNEMPLOYMENT RATE</i>
<b>JANUARY</b>	<b>2,575</b>	<b>10.3</b>
<b>FEBRUARY</b>	<b>2,606</b>	<b>11.1</b>
<b>MARCH</b>	<b>2,632</b>	<b>10.1</b>
<b>APRIL</b>	<b>2,676</b>	<b>7.2</b>
<b>MAY</b>	<b>2,787</b>	<b>3.9</b>
<b>JUNE</b>	<b>3,043</b>	<b>2.7</b>
<b>JULY</b>	<b>3,223</b>	<b>1.8</b>
<b>AUGUST</b>	<b>3,238</b>	<b>1.7</b>
<b>SEPTEMBER</b>	<b>2,927</b>	<b>2.6</b>
<b>OCTOBER</b>	<b>2,806</b>	<b>2.8</b>
<b>NOVEMBER</b>	<b>2,702</b>	<b>4.5</b>
<b>DECEMBER</b>	<b>2,645</b>	<b>4.8</b>

The above table depicts a very different story than the Federal unemployment rates for 1990 of 4.4%. Even the State's average annual rate of 5.1 percent for 1996 overlooks the great fluctuation between 11.10% in February and 1.70% in August.

### *Transportation and Access*

Chatham has no form of public transportation. A private bus company does make a route stop in Chatham before proceeding to Orleans and then back to Hyannis where connections to New York and Boston can be made.

The Cape's main highway is Route 6 and provides access to Chatham via exit 11. A lesser road, Route 28, also bypasses most Cape towns including Chatham. Since Route 28 is also many towns' Main Street, the drive is a slow method of accessing other towns.

### *Hospitals, schools, libraries*

There are no hospitals in Chatham. The closest facility, Cape Cod Hospital, is located in Hyannis, an approximate 20-minute car drive. Chatham does have emergency medical technicians.

Chatham has two libraries. The main library, Eldredge Public Library, is located across the street from Town Hall in the center of Chatham's downtown. The brick and ivy structure stands out amongst the traditional white clad storefronts. The library was recently renovated and is now "linked" via the Internet. Another smaller library is located on Route 28 in South Chatham. The South Chatham Library is only open two days a week, but remains open year-round.

### *Fisheries Profile*

#### Community

Chatham is primarily known as a tourist destination. People from all over the globe flock to Chatham from summer to early fall to admire its scenic beauty, walk through the quaint downtown shops, and to visit its active commercial fish pier. Since the early 1980's, visitors have been able to view fishermen unloading their catch from an observation deck directly above the commercial

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<sup>33</sup> CapeTrends, Cape Cod Commission & Massachusetts Division of Employment and Training

fishermen. At most Town Landings, tourist watch and ask questions of the fishermen and shellfishermen unloading their daily catch. But beyond the very visible signs of an active commercial harvesting industries lies more extensive support industries. Fish buyers and cutters, gear workers and shellfish shuckers are just a few of the many active and healthy industries nestled in and around Chatham. These industries are, in turn, supported by an extensive work force, individuals who, for the most part, live in Chatham as part of the vibrant year-round community.

#### Commercial fishing and fisheries-related employment

Fishermen were asked to estimate the number of fishermen living within a defined area. The boundary of the "area" was also asked. The numbers of fishermen estimated by respondents were quite close. While one respondent indicated the "area" as including Chatham, Orleans and Harwich, he could only estimate the number of fishermen in Chatham to be 500. Two respondents estimated the number to be between 800 and 1000 with one indicating the "area" as Chatham and Harwich. Another defined "area" as a 15-mile radius, which would include parts of Orleans and Harwich, estimated the number of fishermen to be 1,000.

#### **Households Dependent on Fisheries**

Estimates of the number of households directly dependent of commercial fishing varied greatly. One fisherman stated 200 families were directly dependent while another stated between 500 and 1,000 families were dependent on fisheries. One respondent stated,

*"...30 to 40 percent of the working population. I would think 30% of the households in town."*

Respondents were less sure of how many other households were dependent on some aspect of the fishing industries. Answer ranged from "I don't know" to 500 to:

*There's a lot, whether it's part-time or full-time. You have gillnet hangers, long-line baiters, shucking sea or bay scallops, it depends on what the population of [those] fishing is. For every boat that goes cod fishing, there's two people who bait. So if you have 30 boats that go cod fishing, you have 60 that are baiting.*

#### *Harvesting structure*

Currently, there are 64 vessels with docking permits for the Town Pier. From this total, 22 vessels solely use gillnets, 17 use longlines, 5 others use a combination of both gillnets and longlines, 8 are lobster boats, 3 are handline boats and 4 are party/charter boats. There are also two draggers, one Scottish seiner and one strictly tuna boat. The majority of fish targeted and landed at the Town Pier are codfish, dogfish, monkfish, haddock, bluefin tuna and lobster. A number of these vessels also utilize the private facilities offered at Stage Harbor depending on the season and the weather. Stage Harbor offers greater protection and safer access to the fishing grounds, though the steam time to the grounds is longer.

Approximately fifteen vessels without docking permits utilize Stage Harbor full-time. Although the Town maintains a floating dock and boat ramp at Stage Harbor, most of the commercial finfish activity takes place on the two private docks adjacent to the Town's facilities. The docks are owned by commercial fishermen who also own weir trap companies. Weir traps are an ancient method of harvesting fish that travel in schools along the coastline. In Chatham, trap fishing takes place in the spring and summer and targets a number of species including scup, squid, mackerel, butterfish, Spanish mackerel, and bonito. Other fishermen utilize the docks to unload codfish, dogfish and tuna. Fish are boxed and iced on the docks and a forklift is used to carry the loads onto awaiting trucks. One of the private docks utilizes a specific fish company whose main office is located in Boston. The other private dock utilizes a local fish company who ships fish directly to larger markets as well as processes some of the catch in its local plant to supply local markets.

It should be noted that another harbor located in Harwich services a fleet considered to be part of the Chatham fleet. Approximately 40 commercial fishing vessels utilize the Town facilities at Wychmer Town Pier. A number of those vessel owners live in Chatham, but more importantly, the fleet fishes along side that of Chatham. The majority of these vessels use longline gear and target cod and dogfish, though there are a few gillnetters and lobster boats. Again, these vessels opt for the longer, but safer ride to offshore fishing grounds.

#### *Number of Vessels by Type*

Fishermen were asked to identify the number of vessels in Chatham by the type of vessel, its length and its age. The number of wood vessels estimated by interviewees ranged between three to 20-plus and ranged in length from 19 to 40 feet. All estimated their ages as over 20 years. No cement or PVC vessels were noted while the number of steel boats ranged from zero to six with lengths of those vessels to be between 30 to 42 feet. The greatest numbers of vessels noted were fiberglass and were estimated to be between 100 and 300 in number with lengths ranging between 12 to 49 feet. The lower end length estimates suggest some interviewees included commercial skiffs as well. All describe fiberglass vessels as being new to over 25 years of age. When asked about specific "types" of vessels, all participants added to the given list as follows:

TYPE	OPERATING	DRY DOCK
Urchin dive boat	0	0
Eastern Rig	0	0
Lobster/conch	15-30	In winter only
Stern dragger	2-4	0-1
Purse seine	0	0
Longline/hook	30-100	0
Gillnet	20-50	0
Scottish seiner	1	0
Sea clam	0-1	0

According to Chatham Harbormaster documents, the total number of commercially registered vessel in Chatham are 279<sup>34</sup> and they range from 10 feet to 57 feet. About two-thirds of these are commercial skiffs used primarily for shellfishing. Offshore fishing vessels holding docking permits at the Chatham Fish Pier are 63 vessels and can be categorized as follows

Longline	15
Gillnet	20
Lobster	7
Gillnet/Longline	4
Longline/jig	6
Dragger	2
Scottish seiner	1
Party	4

\*Four vessels are undetermined

Another 16 (not including skiffs) commercial vessels are located at Stage Harbor.

<sup>34</sup> This number only includes commercially registered vessels at the Chatham Fish Pier and Stage Harbor mooring areas. Other lesser mooring areas are not included but most certainly contain a number of commercially registered skiffs.

### *Shellfish*

Chatham has an extensive shellfish industry due to its expansive coastal area conducive to the propagation of a variety of shellfish species. In 1999, 548 commercial permits were issued. Throughout the year, approximately 50 to 75 work the shores year-round. The numbers swell in the summer months into the hundreds including college students and part-time shellfishermen. Shellfishing has also been an "insurance policy" for finfish fishermen during times of low catches and more recently during fish closures. Retired fishermen are often seen quahogging along the shores to supplement their income. The predominant species are soft-shell clams (or steamers) and quahogs. Through the years, sets of other shellfish species, such as mussels and sea clams, have surfaced to create periodic booms for the Town. Landings of shellfish are self-reported making the estimated wholesale value of shellfish over three million dollars in 1999.

### *Infrastructure*

The most visible fishing industries are those that take place from the Chatham Municipal Town Pier. The Town Pier is home to the majority of Chatham's commercial groundfish fleet. Boats target fish in waters east and south east of Chatham.<sup>35</sup> The Town Pier includes two buildings and an upper and lower parking lot. The upper parking lot is maintained for crews (or deckhands) and the many visitors hoping to view fishing boats unloading their daily catch. The lower parking lot is reserved for captains and/or owners of those vessels holding docking permits for the pier. The lower lot abuts the cove allowing for easy access to vessels for repairs and the loading and unloading of gear and fish. Located on the upper level building is the Warfinger/Assistant Harbormaster's Offices as well as public bathrooms. Beneath the office is a large garage-type space used by fishermen to work on gear or bait longline gear. There are also two freezer/coolers rented out by the Town to store bait for lobstermen or longliners.

A Fishermen's Monument commissioned in 1992 to honor fishermen and their families, stands along the hill between the upper and lower parking lots. The monument depicts a hand reaching skyward holding a net filled with a variety of fish and shellfish with a plaque reading; "The Chatham Fishing Industry, Ever Changing to Remain the Same." The dedication hoped to capture Chatham's diverse maritime industries. The statue is a symbol of the cultural capital invested in the industry. The main building is located along the water and includes space and facilities for two fish companies to off-load incoming boats. These companies "rent" the space from the Town. Rent is derived from the actual amount of fish off-loaded from the fishing vessels. Currently, each company must give 25 cent for every "box" of fish unloaded.<sup>36</sup> The fish companies that occupy the pier have had the privilege for many years without a contract with the Town. According to the Chatham Harbormaster, occupancy of these spaces will soon go up for bid to any interested fish company. Rents will thereafter be based on a monthly fee. A Request for Proposals has already been published. Fishermen also have the option of unloading their own fish at a separate bulkhead in order to sell those fish to a company of their choice. A fuel service also rents space and is located between the fish companies on the front side of the dock. There is also an observation deck for visitors to view fishermen unloading their catch.

The majority of vessels utilize the facilities at one of the two companies along the pier. Each company employs a number of people who help the fishermen load fish into a bucket that is lowered onto the vessel. When full, the bucket is lifted above the dock and dumped into a shoot where other employees separate and weigh the catch by species and size. The fish are then iced and placed into separate boxes before being loaded onto 18-wheeler trucks backed up to the parking lot side of the building. The fish companies transport most of the fish directly to the larger markets of New York and Boston, while some fish are trucked to the individual fish companies' main facilities. These facilities are still located within Chatham. Fish are processed at the plant and filets are sold to local fish stores and restaurants. One of the fish companies also has its own retail fish store.

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<sup>35</sup> The fish the Chatham fleet targets are considered part of the George's Bank stock.

<sup>36</sup> A box of fish weighs between 100 and 125 pounds whatever the species be.

This fall a new type of marketing venture opened its doors for the sale of live fish. A holding facility was constructed through a grant from the US Department of Agriculture. The hope is to develop specialty markets for live or whole fresh fish to increase the value of the catch. The cooperative venture, Cape Live Seafood, includes a holding facility with tanks capable of holding 5000 pounds of live fish. The venture will begin with codfish, but hopes to expand to other species. Currently, ten hook fishermen (handline and longline) are participating. Boats are outfitted with small holding tanks containing titanium chillers in order to bring in live product year-round. The cooperative aspect will allow fishermen greater returns as well as generate funding to outfit other vessels and increase fishermen participation. The project is supported by a number of retailers including Stop and Shop and Legal Seafoods as well as conservation groups such as Conservation Law Foundation.

### *Support Services*

Other industries extend beyond the fish piers and are essential to those working on the water. For gillnetters, gillnets must be "hung" by sewing the top and bottom of a net to corresponding lines. For the top, floats are sewn in periodically to ensure the net floats approximately five feet above the ocean floor. The bottom line is filled with lead to ensure the net sits on top of the ocean floor. Net hanging is usually completed with two people, one sewing the net to the float line and the other sewing the net to the lead line, though, some hangers hang alone. Once these nets are in use, they often rip during the hauling process or the picking (of fish) process. These nets are then "stripped" from the float and lead line in order to reuse the lines with new nets. Each gillnet vessels employs both net strippers and hangers.

Another substantial industry emanating from fishing is longline baiting. Over the last 20 years changes in how longliners fish has created this niche industry. Previously, most longliners fished three handed, the captain and two crew. One crew gut and cleaned fish while the other stood by the hauling machine and "coiled" the longline as it was hauled onto the boat. The groundline used was of thinner, more rugged material than is used today and could be looped by the coiler. The hook would be hooked atop the coil and laid flat, one coil on top the other. This method made for easy rebaiting. The rebaiting took place on the trip home or soon thereafter by the crew. As the stocks near shore declined, vessels steamed further away from shore and were forced to set more and more gear to catch the same quantities of fish. Since the process of coiling was time consuming and hauling can only take place during certain periods of the tide, new gear was developed (first used in Alaska) which allowed the longlines to fall directly into fish totes so gear could be hauled at a faster pace. The coil man was eliminated from the crew. Without the convenience of "coiled" gear, baiting time increased and thus began the need for "baiters" onshore. Now, each longline vessel employs baiters to rebait their gear onshore. The task is time-consuming and tedious. It consists of placing small pieces of bait, usually sea clams or squid, on every hook and placing it just so within a fish tote so that the gear does not tangle while being set offshore. Most fishermen use 300 hook "bundles" and set between 14 and 20 of these bundles per trip. Baiters are paid per hook, but must also repair the gear and reset bent hooks. Each bundle of gear takes a baiter, depending on experience, between 45 minutes and two hours. Most vessels employ two baiters, if not more. Other than the few boats that utilize the town facilities at the Fish Pier, most baiting takes place away from shore. Some fishermen have shanties with coolers and freezers at their home, but most own or rent facilities in the number of industrial parks around Chatham.

### *Employment (year-around and seasonal)*

All the respondents worked as harvesters though they targeted differing species. A weir fisherman described his year as beginning in March. He begins by preparing the gear used for the traps. It is a labor-intensive industry. For most trap fishermen, actual fishing lasts for only two months, May and June. Some will continue to fish through September, but with only one other deck hand. Through the fall, traps are packed up and put away. This individual works on other boats in the winter but has also worked in construction during bad fishing winters.

Two other fishermen respondents simply change fisheries throughout the year. Cod, dogfish, and blue fin tuna are their primary target species though both subsidize their income with shellfishing. One helps his brother lobstering when fishing is slow. Neither fisherman relies on land-based jobs. One of the fishermen changes gear throughout the year. During the winter months of December through March, he longlines for cod. During the spring and summer, he targets cod and dogfish with gillnets and changes over to tuna fishing in the fall.

The full-time shellfisherman also changes his target species depending on the seasons. For instance, many areas closed during the summer and fall open for shellfishing December 1, so he long rakes for quahogs during the winter months. By April, he is back digging steamers and getting back in shape for the long days of June, July and August where, as the respondent described,

*You can do double tides where you wake up at 3 am and get done around 10 am, take a nap, go back out at 1 p.m. and work until dark.*

By October he is back quahogging. This shellfisherman estimates fishing days to between 220 and 250 days a year. Days he takes off usually have to do with taking care of his three children.

When asked what other jobs were available in the area, most respondents listed a number of fishing support industries such as baiting and net hanging. Also mentioned were fishing supply industries such as gear, fuel and electronics. Service industries such as engine and electronic repair, out-board mechanics were also listed. Outside of the fishing industry, respondents listed other labor-intense occupations such as construction, landscaping, and plumbing. One fisherman mentioned service industries such as restaurants and banks. Most of the respondents looked down at other occupations, as one fisherman stated "...I don't know, everything else is a demotion from fishing." While another stated "You can either work in the shops as a salesperson, or manage a shop, or go fishing."

#### *Sales/revenue*

When asked to determine the percentage of the respondents annual income from fishing, two of the households interviewed depended on fishing for 100% of their annual income. One stated that recent winter work in construction has changed their annual income from 100% fishery dependent to about 80% currently. Another fisherman has a wife that works outside the home in a non-fishing related occupation making their annual income 60-80% dependent on fishing.

#### *Species, Seasonality*

The number of species fished for is vast.

Groundfish: cod, flounders (fluke, dabs, winter flounder, and yellowtail) haddock, pollock hake (red or silver) halibut, and gray sole.

Small mesh: whiting, squid, and shrimp are caught.

Pelagics: Both herring and mackerel are caught; though one fisherman stated herring were not harvested for economic reasons, but used for bait.

Crustaceans: lobsters

Highly migratory species: tuna

Other species listed included: Striped bass, dogfish, skate, monkfish, bluefish, conch, scallops, sea bass, scup (porgies), soft shell clams, quahogs, mussels, slime eels, menhaden (pogies).

One fisherman included sturgeon but did not include scallops or slime eels. Another fisherman did not include menhaden.

#### *Niche Fisheries*

Weir (or trap) fishing was mentioned as well as a variety of shellfishing including conch and mussels. A number of methods for harvesting were mentioned, such as long raking for quahogs, hand digging for steamers and hook and line fisheries. One fisherman described Chatham fisheries as "diverse and archaic."



Most respondents mentioned dogfish and monkfish when asked what alternatives fishermen were switching to. They clarified their answers by stating monk fishing was restricted and not many went into it. Dog fishing, on the other hand, was being taken away. Other alternatives mentioned were quahogs and steamers. As one fisherman stated:

*Clams, steamers...the whole population is digging steamers. When the groundfish people aren't fishing, they're digging steamers, the people who don't really want to work dig when they need money, some dig all the time.*

#### *Form of ownership (e.g., owner/operator; corporation)*

The majority of vessels in Chatham are owner/operator. A very small number have other captains run their vessels either because they are retired, or the individual owns two boats, runs one and has the other captained. Some fishermen may be incorporated for tax purposes, but there are no large corporate interests in the Chatham fleet.

#### Recreational fishing and employment

Chatham is an increasingly popular destination for numerous recreational fishing enterprises. Striped bass is the favorite target species, followed by bluefish, scup and cod. The number of small day excursion boats have increased over the last five years and services offered range from dropping customers off along the pristine shore of South Beach and Monomoy Island for fly fishing, to all day, off-shore excursions. With increasing recreational fishing activity, conflicts concerning access have erupted. Boat ramps and parking lots at Town landings have become over saturated with both commercial and recreational fishing efforts, as well as other water based activities such as boaters, kayackers, windsurfers and sailors. A number of seal-watching tours have also added to the congestion. Efforts to control traffic have also created angst between commercial and recreational endeavors. Recent regulations have limited the usage of the Town's primary boat ramp and subsequent parking area to residents only. Those enterprises carrying recreational fishermen for fees must now be bonded for insurance purposes in order to utilize Town facilities.

All respondents affirmed the existence of recreational fisheries in Chatham. Two noted the increase in the last five years. Most mentioned the striped bass and blue fish fishery. One fisherman acknowledge the claim that Chatham is one of the premiere destination for flyfishermen on the East Coast, while another stated,

*...it's an industry and many people are involved in it.*

#### Cultural role of fishing

Respondents were asked if most fishermen came from Chatham. All responded to the contrary, though where fishermen came from could not be specified. One fisherman stated,

*Yes, I'm a native. There's really not a whole lot of us left. Most are wash-a-shores.*

#### *History and museums*

Chatham is one of the Cape's earliest townships and the harvesting of surrounding resources began over 250 years ago. The size of the fleet has changed over the years, but Chatham has always been a small day-boat port. Prior to the late 1970's, Chatham had also always been a hook-boat port. Old timers still recount long trips to Georges Bank to hand-haul longline gear targeting halibut. But for the most part, fishing took place close to shore with many inshore spots in sight of land. Weir fishing has also had a long history in Chatham.

#### *Cultural events*

A number of cultural events are held and celebrated throughout the year, with the largest event being Chatham's Fourth of July Parade. Chatham's parade attracts an increasing number of

visitors every year, but is still attended by the majority of its residents. Many floats display a nautical theme.

Seafest is an event held in October and specifically celebrates Chatham's diverse natural bounties and shoreside industries. A number of demonstrations are held throughout the Town showing techniques in clamming, quahogging, baiting and how to eat a lobster. There are also discussions held on current events affecting the fisheries. The primary goal of the event is to attract visitors to Chatham during the off season and teach both visitors and residents about maritime industries.

Years ago, Chatham held the Miss Eelgrass Contest as a fundraiser for local children's programs. Local merchants would sponsor an individual who would vie to become Captain Eelgrass's mate. Women would dress in outrageous outfits, donning large, real cod heads, or mermaids garb made from actual seaweed. Each candidate would demonstrate a plea or talent to be chosen as Miss Eelgrass. A number of donated prizes were also raffled off. The event was held at the Veteran of Foreign Wars field and most locals attended. The theme song for the event was, "Jelly, Jelly, Jelly, Cuz Jam Don't Shake Like That". The winner joined Captain Eelgrass on the Fourth of July float. Unfortunately, as older organizers retired from the event, new organizers reinvented the event to "The Arts of Charity". The new event still raises money for local children's organizations but in a more upscale forum that lacks any local color. The new event takes place in Chase Park in Downtown Chatham and presents a live auction for all sorts of artwork. The Arts of Charity is still a well-attended and fun event, but the crowd and antics have most definitely changed.

#### *Ethnicity in the fisheries*

The great majority of Chatham citizens are white. Chatham's local population is derived from old Yankee stock. There are no outward celebrations of ethnicity other than the Fourth of July Parade.

#### *Kinship & family*

Although the majority of fishermen are not of local stock, those that are have been involved for generations. A number of those currently fishing or shellfishing are third generation. Unfortunately, most fishermen do not want their children to enter fishing, though some expressed this with reservation. "If its prolific and a stable environment," hedged one fishermen. Another offered:

*No...well I won't say I don't want to see them in the industry, don't think I want to see them fishing. ....I don't see them taking over the traps...I don't see them [the traps] being in existence after I'm through unless something dramatically changes.*

Two fishermen had wives or significant others who worked outside the house and outside the fishing industry. The other fishermen felt wives were vital to their enterprises. One fisherman described his wife as his co-worker stated,

*She does a little bit of everything. When I gillnet, she hangs nets, when I longline she baits the gear, She's also the bookkeeper. Elbows me in the ribs to get me out of bed,*

When asked, "What makes a good fisherman?" one fisherman answered, "My wife!"

#### *Where fishermen go for coffee*

Chatham supports a number of breakfast restaurants, but the majority of fishermen, active and retired, patronize Larry's PX. Most fishermen, whether working or not, are accustomed to early hours and Larry's opens at 4 a.m. The two gas stations that sell coffee are also a gathering spot for fishermen and shellfishermen.

*Where fishermen go for beer*

After hour gatherings for fishermen have changed over the years. Even ten years ago, fishermen mostly congregated at the Chatham Squire, located in downtown Chatham. On non-fishing days, fishermen would begin gathering at lunchtime. A number of factors have led to the demise of this kind of socializing. For one, the Squire's clientele has shifted to the tourist. It is also difficult to maneuver large trucks through downtown during the summer months, never mind finding a parking space. Also, the drunken driving laws and enforcement have simply changed how everyone socializes. Since there are few drinking establishments, local law enforcement keep watches over the few there are and take note on who is where and for how long. Still, small pockets of fishermen congregate during the early hours of the evening at a number of places throughout Chatham and Harwich. The younger crowd tends to gather at the Sou' Wester, while an older crowd gathers at Campari's in North Chatham and Castaways in Harwich.

Fishing related organizations and their roles in the community and fishery

Chatham Fisherman's Association: Not active

Chatham Fisherman's Wives Association: Not active, though there have been recent attempts at revitalizing the organization

Cape Cod groups include:

Cape Cod Commercial Hook Fisherman's Association: An ever expanding and important group supporting and advocating for small boat fishing. Activity includes lobbying on the federal level, assisting in grant writing and procurement of grants for projects such as Cape Live Seafood as well as sponsoring educational forums for fishermen and their families such as how to access fishing information online.

- Cape Cod Gillnetters Association
- Outer Cape Lobstermen's Association
- The Nereids: A recently form group of Cape women dedicated to supporting maritime communities by developing links between residents, visitors and maritime-related interests.

And regional groups:

- Northwest Atlantic Marine Alliance (NAMA)
- General Category Tuna

Fishing-related programs and services*Other NGOs/Training institutes*

Approximately five years ago the Fishing Family Assistance Program had an office in Chatham. J-Tech, located in Hyannis, still helps fishermen and their families in funding retraining in fields outside the fishing industry.

*Coast Guard*

Despite cutbacks, Chatham still maintains a Coast Guard station. The Coast Guard offers a few navigational courses every year to interested residents.

## **Perceptions of the Fishing Community<sup>37</sup>**

Importance of fishing to the community

Based on a scale of one to five, with one being not important and five being very important, two fishermen believe fishing to be very important (5) to the community, while another believed it to be important (4). One fisherman stated,

*More important than people in this community know. How about*

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<sup>37</sup> Based on key informant interviews

*a 4 and a half? (between important and very important)*

### **Boundaries**

Two of the respondents named Harwich as the community Chatham folks have contact with the most. The other community is Orleans. Both towns are directly adjacent to Chatham. It is Harwich, though, that contains part of the “Chatham” fleet. East Harwich also offers ever-increasing retail services. Directly over the border between Chatham and East Harwich is the 24 hour Stop and Shop, a new CVS and a number of clothing stores with more scheduled for construction.

The following shows where the respondents conduct specific activities:

Sell fish	Chatham (Shellfish=Hyannis, Falmouth <sup>38</sup> )
Offload fish	Chatham/Harwich
Buy fishing gear	Chatham/Harwich/New Bedford/Sandwich
Buy ice	Chatham
Buy boat fuel and oil	Chatham
Haul out for boat repairs	Chatham
Go for bookkeeping	Chatham/Yarmouth/Off-cape
Go to bank	Chatham
To shopping	Chatham, Harwich
Go to church	Chatham
Go to school	Chatham
Go for health care	Chatham/Hyannis/Orleans
Go for childcare	Chatham/Orleans
Visit relatives	Chatham/Eastham/Wakefield/Florida
Visit friends	Chatham/ Maine
Go for vacation	Maine/Western MA/South
Go for recreation	Chatham/Maine/Western MA
Go to socialize	Chatham

The only respondent who answered yes to whether any of these contacts had changed in the last five years explained that his social life had changed since no one came over to their home anymore due to their three small children!

### **Communication Issues**

Communication with local fisheries managers and representatives was rated as “poor” by two respondents and “fair” by two. Communication with state managers and representatives was rated as “excellent” by one, “very good” by another and “poor” by two. Communication with Federal managers and representatives was thought to be “fair” by one, “poor” by two, “no comment” by one.

### **Assessments**

When asked how well scientists and fishermen agreed on the assessment of fish stocks, all four respondents believe fishermen and scientists disagree (number 2) on the assessment of stock conditions.

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<sup>38</sup> The respondent added that those companies from Hyannis and Falmouth bring trucks to Chatham to buy shellfish.

### **Local management practices**

Fishermen were asked if there were any local management practices that the local people themselves devised. One respondent had no idea, while two mentioned proposals hook fishermen had submitted to the New England Fisheries Management Council. The fourth gave an example of local management practices.

*Yes, the shellfishing. The Town, shellfishermen and the shellfish advisory board that we have set the amount of shellfish that can be taken, some are limited to the times of year we can harvest.... There is a size limit [boat size] at the fish pier,*

The shellfishermen in Town also agreed to raise their own permit fees in the early 1980's in order to create a fund for the propagation of shellfish. With the revenues, the Shellfish Department constructed an upwelling system for a variety of shellfish species, though the primary focus is quahogs. Seed shellfish are grown out then planted in outdoors grow-out areas under protected mesh. Shellfishermen volunteer their time and along with Shellfish deputies, helping plant mature quahogs from the grow-out areas. Shellfishermen also agreed not to allow private aquaculture ventures to take place within Chatham since the Town "public" aquaculture venture benefited everyone.

### **Economic Change**

Ten years ago, the economic condition of the fishing industry was rated as "excellent" by one and "good" by three. All the respondents attributed the good to excellent economic conditions ten years ago to the abundance of fish. One fisherman also added that prices for fish were high as well as,

*...we were able to go where we wanted, as we please. It was a reasonably productive industry.*

Five years ago, three rated the economic condition as "good" and one as "average." Fishermen still attributed the fairly good economic conditions to the quantity of fish as well as the fish price. One fisherman noted that with the ability to diversify into dog fishing, they were able to sustain themselves. Another fisherman noted the boom in shellfishing as the reason.

*Actually, I would give it a very good if I could and I'm basing that not just about ground fishing but mostly about shellfishing. I think because of the shellfishing. There were 200 to 300 people out there. Kids are putting themselves through college by shellfishing in the summer. It was a boom and it still is although its probably not as good as it was five years ago, but its still doing well. The groundfishing may have gone down, but the shellfishing equalized it.*

Today, the economics were rated as "good" by one, "average" by two and "fair" by one. Two fishermen noted the decline of fish as well as the impacts from the fishing regulations for the lowering of economic conditions. One fisherman actually found the situation to be quite good and added:

*So far this year, it's been good to excellent. There was a lot of fish caught and the prices were good most of the winter.*

At the same time one fisherman commented:

*The fish have diminished. We're regulated to not be able to go and you just can't catch anything.*

The differing comments may simply reflect the individual variability of the industry.

Predicting the future, three anticipated that the economic condition would be “good” in five years. Most respondents were optimistic that the regulations would work to rebuild stocks. One fisherman believed the economic conditions would get worse before they became better, but still believed in a better future. Another fisherman, optimistic that regulations would help fish stocks, added his concern about the managers,

*I'm sure the regulations will work, but that's if they let us fish. Now that the government's involved, it will never be the same.*

One respondent could not make a prediction for the future, but his response to why expresses his doubtful concerns over the unpredictability of the industry,

*I have no idea. We are on the brink of being shut down. If what happened in Cape Cod Bay happens here, we're finished. They put trip limits on it and finally ended the whole industry. ...we are on the brink of that here. Especially if we're inundated by another fleet. If the boats from the North come down here, it will put undo pressure on our limited resources. ...they are out of luck up there...they're all done.*

#### Personal economic change

Next, fishermen were asked if their standard of living had changed for the better in the last five years. Three of the respondents felt there had been no change in their own standard of living, though one did believe his total income had decreased. Another fisherman believed the standard of living was worse.

When asked in what ways life was worse than five years ago, responses ranged from the increased costs in housing and the inability of a working family to survive in Chatham, to the increase in tourists during the summer months and finally,

*Lets put it this way, five years ago I was 50 and now I'm 55 and I'm working harder. Any reasonable person would not think that so good.*

Two respondents believed their standard of living had decreased due to a decrease in their annual income over the last five years. Both mentioned the decline in income from fishing. One fisherman believed his standard of living had risen, though his annual income had remained pretty much the same in the last five years.

All four respondents had health insurance. Two of the fishermen were not part of any group plan. One fisherman was a part of the Fisherman's Partnership health plan, and another was covered under his wife's plan from work.

#### Changes in fishing effort

All respondents believed there had been a change in effort over the past 10 years. One fisherman stated a reduction in fishing effort was due to management, while another believed effort had increase because of the fear of being shut down. Another fisherman stated his effort had decreased by the reduction in traps he set out.

Other than shellfish, which has remained stable over the years, all fishermen noticed a change in the mix of fish stock. Both cod fishermen noted the role of dogfish. One believed the “balance” between cod and dogfish were off because of the increase in dogfish populations. The other cod fisherman confirmed his switch from cod to dogs was due to the decline in cod,

*Targeting the traditional species, cod, has changed because of regulations, quantity, availability of other resources and necessity.*

The weir fisherman noted that mackerel has always been the predominate species, around 50 percent of the catch, followed by 25 percent squid and 25 percent scup. But, in recent years, that composition has changed to 75 percent mackerel, 24.5 percent squid and .5 percent scup. One fisherman also noted the increase in the striped bass population.

### **Significant changes in the fishing industry**

- *First, access to permits...you just can't get permits...And that's a big point, I can't diversify. Next is Amendment 5 and 7. The more people are regulated in the groundfish fishery, [they] come inshore and that puts more pressure on the inshore fisheries like the shellfish industry.*
- *Better, more reliable equipment. The boats are fiberglass now, they're safer and there are less repairs. Next is there's less camaraderie amongst fishermen now and I'm not sure why. Myself, I see a lot of people getting into this industry maybe 15 years ago because it was a quick way to make money and it was the only way they looked at it. I don't think it was like that before. I think that fishing has become more competitive because of the lack of fish. It creates dissention when you have that much competition. People just don't seem to be as friendly. Its harder to be friends and go steal a fish from under him the next day.*
- *Regulations and the failure of the cod fish. And the failure of the codfish is due to overfishing.*
- *The loran and gillnets in Chatham. Gillnets came in to Chatham in 1977-78. That changed Chatham. Also, increase in the horsepower in the draggers.*

### **Effects of recent management**

When asked which recent regulations would have the greatest impacts on them, all respondents mentioned some aspect of Amendment 7 and subsequent additional measures such as, Days at Sea, trip limits, the closed areas and blocks. But most comments focused on those regulations that are currently being promulgated. The uncertainties of new regulations seem to be a pervasive concern. One commented on the yet unknown dogfish regulations.

*The dog fish regulations will be a huge shock to the Town....A lot Of boats diversified away from groundfish into dogfish.*

Another stated

*They're working on new ones now so who knows.*

While still another added:

*We know its going to be closed for 30 days, but then they're going to have a whole new set of rules...they're talking trip limits and closures. It's going to affect us and put a lot of us on the clam-flats and affect the clams so it's going to affect everyone. [Cape Fishermen's Supply] hasn't ordered much gear because he doesn't know what's going on. He's scaled back on what he orders.*

When asked what alternatives fishermen are switching to, most mentioned clams. Again, the uncertainty of new dogfish regulations surfaced,

*...dog fish, but that's being taken away...so I don't know what they're going to switch to.*

### **Characteristics of local fishermen**

Asked what makes a good fisherman, the fishermen replied:

- *Tenacity*
- *My wife! Paying attention to everything that happens. They're so many things that can make a good fisherman.*
- *Perseverance, drive and luck...also being at the right place at the right time.*
- *Today, someone who is conscientious of the environment and fishes for tomorrow. Meaning, the old school way of fishing where small fish didn't matter. You took whatever you could get in the boat. Didn't matter if you killed a bazillion fish to get them. I think today's way of thinking is different, it needs to be different. We need to think about tomorrow, to have fish for tomorrow.*

### *Safety*

When asked if fishing was more dangerous, or safer than it was in the past, all but one answered that fishing was safer. All three attributed the increase in safety to stricter regulations, but mostly emphasizing that boats were better today,

*...the boats are safer. I don't want to admit that the regulations have made it safer. People are making more money, so they have more money to put into their boats. Its not like years ago when you made do with what you had because you couldn't afford any better. Coast Guard regulations have helped, but mostly the boats are better and safer.*

One fisherman believed the fishing was more dangerous since many captains were forced to work alone without any crew. Fishermen also have to fish further away to catch fewer fish. Therefore, fishermen, especially those fishing alone, are take greater chances.

### *Job satisfaction*

Respondents were asked if most fishermen in the area were satisfied with their jobs. Three directly answered yes, while another said he did not know, but he was satisfied. When asked to explain why they felt fishermen were satisfied with their work, two mentioned the freedom they derived from it,

*We choose this profession because we like the lifestyle. We're basically our own boss. We have time off and are not dictated by a 9 to 5 work schedule. It would be a real drastic change to get out of the fishing industry and think you have to go work with structured hours and days...I know a lot o guys who are not going to do it...I'm not going to do it.*

### **Fishing families**

Asked whether spouses of harvesters worked outside the home, respondents commented that most spouses worked outside the home and that this was not different from five years ago. One added that it might be different then 10 years ago, while another believed it was different 15 years ago. When asked specifically whether the respondents spouses or partners worked, all answered affirmatively. Two of the fishermen's wives were in integral part of their spouses fishing business, while two of the other spouse/partner worked outside the fishing industry.



Community Profiles  
 Barnstable County  
 Cape Cod and the Islands Sub-region

#### 5.4.1.4. Provincetown

##### *Background*

Provincetown is at the very tip of Cape Cod, a commercial fishing center and, in the summer, a tourist center and art colony. It's a picture perfect fishing village made up of narrow streets, clapboard and shingled cottages with Cape roses and old-fashioned gardens.

The Town of Provincetown was incorporated in 1727, but its history begins much earlier since its deep, well-protected harbor offered excellent protection from storms.<sup>39</sup> The European explorer Gosnold recorded a stop in Provincetown as early as 1602 then the Pilgrims dropped anchor here in 1620. Before moving on to Plymouth where fresh water was more plentiful, they drew up the New World's first document of self-governance, The Mayflower Compact, sowing the seeds of self-determination and radical thought that still characterizes the people of Provincetown.<sup>40</sup>

As far as is known the Native Americans, the Wampanoag, did not establish permanent settlements here, but set up seasonal camps for fishing and hunting. This pattern of a transient population that swells in the summer months continued with the Europeans.<sup>41</sup> The rich fishing grounds of Grand, Stellwagen and Georges Banks led to seasonal leasing of fisheries with licenses granted for bass, mackerel and cod fishing but the first permanent settlement didn't take place until 1700.

Provincetown grew very slowly during the 18th century and its population fluctuated with the price of fish. Farming was of secondary importance and aside from the fishing industry, there were only some salt works and one mill. After the Revolution, the town boomed and its population rose 276.6% between 1790 and 1830. Despite its relative lack of good farmland, by the middle of the 19th century, Provincetown had developed as the prime maritime, fishing and commercial center of the Cape. The beach itself was the main thoroughfare for horse-drawn carts loaded with fish and salt and the tools of the fisherman's trade. Most of the houses faced the bay. Side streets ran inland. Travel to the mainland was accomplished by stagecoaches that plied The Old King's Highway, portions of which still run through Truro and Wellfleet.<sup>42</sup>

As whaling came of age in New England, Provincetown's transition from a quiet fishing village to a bustling seaport was sudden. By the mid 1800s Provincetown, with the largest and safest natural harbor on the New England coast, had become one of the greatest and busiest seaports in the country.

Boasting a fishing fleet of more than 700 vessels, Provincetown had become wealthy and crowded, with more than 5,000 residents by mid-century. Fifty-six wharves jutted out into the bay. There were buildings for smoking and canning herring, and fish-flaking racks for curing codfish. Salt was supplied by 70 local salt works -windmills along the waterfront that pumped seawater into vats to be evaporated by the sun.

The Civil War, which destroyed so much New England business, only provided more markets for Provincetown's fish. Portuguese sailors, picked up by American ships in the Azores and Cape Verde Islands to fill out their crews, came to Provincetown to live and additional Portuguese

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<sup>39</sup> <http://www.state.ma.us/cc/provincetown.html>

<sup>40</sup> <http://www.provincetown.com/about/history/>

<sup>41</sup> <http://www.provincetown.com/about/history/>

<sup>42</sup> <http://www.provincetown.com/about/history/>

immigrants had moved to town by the 19th century to work on the whaling boats and coastal fishing vessels. In 1875, there were 25 coastwise and 36 ocean vessels operating in town, more than any community in the state including Boston.

Provincetown was a bustling place with all of the ancillary maritime businesses operating, such as ship chandlers, shipwrights, sail makers, caulkers, riggers and blacksmiths. But whaling declined after the turn of the century and a storm known in local legends as The Portland Gale destroyed most of the town's packing wharves, windmills and salt works. The era of Provincetown's fame as a seaport had ended but by then Provincetown had become known to many of the wealthier residents of Boston and New York. The railroad now brought an entirely new type of visitor to Provincetown—the upper class tourist, eager to escape the heat and grime of the industrial cities.

In the late 1800s Romanticism and Impressionism, with their fascinations with light and landscape, dominated the international art scene. American Impressionists, like Charles Hawthorne, were captivated by the ever-changing interplay of light and water that they found here at the narrow tip of Cape Cod. They quickly embraced Provincetown and its splendid environs as their own.

Hawthorne established The Cape Cod School of Art in 1899. A 'plein air' (open air or outdoor) school of painting, Hawthorne led his students out to the high hills, the low tidal flats and the dunes, stalking the essence of Provincetown's incomparable light in all its changing moods. Artists, out in every sort of weather and season, easels and paints in tow, have been a familiar sight in Provincetown ever since.

In 1914, Hawthorne and others founded The Provincetown Art Association and Museum, whose first exhibition, featuring works by 44 artists, was held in the Town Hall. By 1915, the Art Association had grown to 147 members.

Poets, novelists, journalists, socialists, radicals, entrepreneurs and dilettantes flocked to Provincetown. Abandoned wharves, barns, sail lofts and fish sheds were quickly converted to studios, galleries and little shops. Many especially hardy (and solitude-loving) artists built tiny shacks on the unclaimed land of the high ocean dunes in Provincetown and North Truro (some are still standing).

The Provincetown Players, a mixed group of writers, playwrights, actors and artists, and the first truly American theatre company, converted an abandoned fish house into The Wharf Theatre in 1915. In 1916 The Players opened with Eugene O'Neill's 'Bound East for Cardiff' and the *Boston Globe* ran a front page article proclaiming Provincetown the 'Biggest Art Colony in the World...' By 1917, the Art Association had grown to over 300 members. Throughout the next several decades, Provincetown moved into prominence as one of the primary cultural centers of the country.

Provincetown's creative spirit and stylistic aplomb endures. The Provincetown Art Association, Hawthorne's Cape Cod School of Art and the Fine Arts Work Center continue to be well-respected and vital organizations in the social and cultural context of the town.

The hippies of the 60s discovered Provincetown and instantly embraced the open-mindedness and non-judgmental ways of this already diverse Cape tip community. In the mid-70s, responding to the town's long tradition of tolerant open mindedness as much as to its delightful environs and exciting summer scene, the gay community also adopted Provincetown.

As a backdrop to this melange of fascinating people, the ocean beaches and the high dunes, incorporated into the Cape Cod National Seashore in 1961, remain preserved in their natural state, little altered since the Pilgrims first landing over 300 years ago. Cape Cod National Seashore comprises 43,604 acres of shoreline and upland landscape features, including a forty-mile long stretch of pristine sandy beach, dozens of clear, deep, freshwater kettle ponds, and

upland scenes that depict evidence of how people have used the land.<sup>43</sup> A variety of historic structures are within the boundary of the Seashore, including lighthouses, a lifesaving station, and numerous Cape Cod style houses. The Seashore offers six swimming beaches, eleven self-guiding nature trails, and a variety of picnic areas and scenic overlooks.

Provincetown is unique in that so many diverse social elements - the Portuguese fishermen, the artists and writers, the hippies and the gays have together built a cohesive community that really supports all its members in a manner that is not only tolerant, but completely respectful of 'lifestyle preferences.'<sup>44</sup>

### **The changing fishing community**

The Portuguese community and influence is still very strong. The fishing fleet, although reduced in numbers, still hauls out to sea. Every summer the Bishop blesses the fleet and the Portuguese Festival enlivens the town.

However, about 15 years ago, local respondents report that the industry began to experience a downturn as nearby fish stocks were depleted and area closures such as Stellwagen Bank limited the opportunities to fish near shore. What was once a proud fleet of day boats including eastern-rigged draggers, scallopers and lobster boats is now a derelict collection of aging vessels in poor repair and with little operating capital to keep the fishery viable. The Provincetown harvesting sector has also suffered from a lack of diversity in their industry's development. P-Town has concentrated its efforts on dragging for groundfish or whiting, and has not significantly diversified into other fisheries or gear.

Unlike ports such as Plymouth or Vineyard Haven that have, with active community support, successfully maintained their fishing industry while developing a tourist industry, Provincetown's fishing industry is failing. Despite the positive spin on the state of the fishing industry reported by web site pages, key respondents indicate there is little local support for the cultural capital of fishing in Provincetown. When fishing was an important element in the community there were fish processing plants, a NMFS marine extension office, a fisherman's memorial, marine and fishing supplies, an icehouse, net maker, and a fish auction. Now these items of economic and cultural capital have given way to additional seafood restaurants, tourist shops, art galleries, businesses, and hotels geared to outsiders:

*"It used to be real wild around here. Fishermen had bars to celebrate in and small grocery stores where you could buy supplies on credit. That is all gone now. Now it is all regulated and full of tourists. Fishermen don't matter that much anymore."*

Another disadvantage of P-Town is its geographic location. Although it has the second deepest natural harbor in the world, its location at the northernmost tip of Cape Cod has made it distant from major fish markets and thus less competitive with ports having better access to ground transportation such as New Bedford and Gloucester. In the summer time, the one road going into an out of Cape Cod is regularly clogged with tourist vehicles on their way to visiting the beaches or traveling to the art and tourists shops that have come to dominant the area's economic landscape. In the wintertime, bad storms can close down the one road making regular access difficult.

The Portuguese and Portuguese-American fishing fleet was primarily composed of day-boats and they tended to work in extended family groupings. At one time they commonly had 6 and 7 person crews, then by the 1970's were usually working with crews of 4 or 5 men. Most of the fleet retained their traditional pattern of groundfish trawling, supplemented with whiting and

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<sup>43</sup> <http://www.nps.gov/caco/>

<sup>44</sup> <http://www.provincetown.com/about/history/>

lobstering. Late in the 1970's when bluefin tuna began to attract Japanese buyers, some of the vessels would try for a big one with hook and line. In general, though, the Provincetown fleet did not significantly diversify their economic activities and thus remained somewhat culturally and linguistically isolated.

Migration between P-Town and Portugal was common. Many of the more successful fishermen left Provincetown over the last 25 years to join the fleet in New Bedford. Newer immigrants who would take over aging vessels and "have a go at it" replaced them. However, others stayed and fished out of P-Town for up to 40 years. Because of the outmigration of highliners and the ethnic insularity of the fleet, there was neither the impetus nor the necessary capital to diversify fishing strategies.<sup>45</sup> Those coming into the fishery took up what was available, and had little encouragement or incentive to change.

## *Governance*

Board of Selectmen, Town Manager and Open Town Meeting

## *Demography*

### Population

According to the 1990 Census there was a population of 3,374 in Provincetown CDP, with 1644 males and 1730 females.

### Age Structure

There were 465 children (under 21 years), 2275 adults (21 to 64 years) and 635 seniors in 1989.

### Education

Of adults over 25, 501 had no high school diploma, 815 had graduated from high school, 715 had some college and 788 had a Bachelor's or higher degree in 1989.

### Housing

There were 3660 housing units, 1868 of which were occupied and 1792 were vacant. Of those occupied, 891 were owner-occupied and 977 were rented. The median year housing units were built was 1939 and the median value of owner-occupied housing was \$167,600 in 1989.

### Racial and Ethnic Composition

The vast majority of the population was white (3309) with 52 Blacks, 6 American Indians and 7 Asians. The first ancestry reported by 1175 individuals was Portuguese. Four hundred-one persons claimed English ancestry and over 200 each claimed Irish and Italian ancestry.

## *Economic Context*

### Income

The median household income in 1989 was \$19,935 and the per capita income was \$15,235.

### Employment<sup>46</sup>

Whale watching has replaced whale hunting as an important source of revenue and fame for Provincetown.

## INDUSTRY

Universe: Employed persons 16 years and over

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<sup>45</sup> Key respondent interview.

<sup>46</sup> <http://venus.census.gov/cdrom/lookup>

<b>Agriculture, forestry, and fisheries (000-039)...</b>	<b>67</b>
Mining (040-059)...	0
Construction (060-099)...	136
Manufacturing, nondurable goods (100-229)...	55
Manufacturing, durable goods (230-399)...	36
Transportation (400-439)...	48
Communications and other public utilities (440-499)...	33
Wholesale trade (500-579)...	14
Retail trade (580-699)...	512
Finance, insurance, and real estate (700-720)...	93
Business and repair services (721-760)...	40
Personal services (761-799)...	133
Entertainment and recreation services (800-811)...	15
Professional and related services (812-899):	
Health services (812-840)...	78
Educational services (842-860)...	129
Other professional and related services (841, 861-899)...	60
Public administration (900-939)..	66

#### OCCUPATION

Universe: Employed persons 16 years and over	
Managerial and professional specialty occupations (000-202):	
Executive, administrative, and managerial occupations (000-042)...	204
Professional specialty occupations (043-202)...	264
Technical, sales, and administrative support occupations (203-402):	
Technicians and related support occupations (203-242)...	39
Sales occupations (243-302)...	180
Administrative support occupations, including clerical (303-402)...	141
Service occupations (403-472):	
Private household occupations (403-412)...	0
Protective service occupations (413-432)...	0
Service occupations, except protective and household (433-472)...	400
<b>Farming, forestry, and fishing occupations (473-502)...</b>	<b>85</b>
Precision production, craft, and repair occupations (503-702)...	142
Operators, fabricators, and laborers (703-902):	
Machine operators, assemblers, and inspectors (703-802)...	42
Transportation and material moving occupations (803-863)...	20
Handlers, equipment cleaners, helpers, and laborers (864-902)...	98

#### CLASS OF WORKER

Universe: Employed persons 16 years and over	
Private for profit wage and salary workers...	1002
Private not-for-profit wage and salary workers...	65
Local government workers...	195
State government workers...	33
Federal government workers...	23
Self-employed workers...	297
Unpaid family workers...	0

#### *Transportation and Access*<sup>47</sup>

Provincetown is situated on Cape Cod, a 65-mile long sandy peninsula comprising Barnstable County. The Cape has excellent highway, rail, bus and air connections to other parts of New

<sup>47</sup> <http://www.state.ma.us/cc/provincetown.html>

England. Air, bus, and passenger rail service expand during the summer months to accommodate the large numbers of tourists.

#### Major Highways

Principal highways are U.S. Route 6, the Mid Cape Highway, and State Route 6A.

#### Rail

There is no freight rail service, but the network of intermodal facilities serving Eastern Massachusetts and Rhode Island is accessible.

#### Bus

Provincetown is a member of the Cape Cod Regional Transit Authority (CCRTA), which operates a b-bus demand response service. The Plymouth and Brockton Street Railway Company provides two trips daily between Provincetown and Boston.

#### Other

The Provincetown Municipal Airport, a Commercial Service (CM) facility located 2 mi. NW of town, has a 3,498'x 100' asphalt runway. Precision and non-precision Instrument approaches are available. The Plymouth and Brockton Street Railway Company provides two bus trips daily between Provincetown and Logan Airport.

Ferries (people and bikes, no cars) from Plymouth and from Boston make daily trips in season to Provincetown.

#### *Hospitals, schools, libraries, museums*<sup>48</sup>

There is no hospital in Provincetown.

Provincetown Public Library

Pilgrim Monument and Provincetown Museum, Cape Cod Pilgrim Memorial Association  
Provincetown Art Association and Museum  
Provincetown Heritage Museum

American Lighthouse Foundation restored the keeper's house and outbuildings at Race Point Light.

### *Fisheries Profile*

#### Community

The Portuguese community and influence is still very strong. The fishing fleet, although reduced in numbers, still hauls out to sea. Every summer the Bishop blesses the fleet and the Portuguese Festival enlivens the town.<sup>49</sup>

#### Commercial fishing and fisheries-related employment

##### *Harvesting structure*

The majority of the fleet are eastern-rigged otter trawlers, complemented by a small fleet of inshore angling vessels. A total of 18 vessels were counted at the docks, with their numbers equally divided between steel and wooden hull vessels.

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<sup>48</sup> <http://www.state.ma.us/cc/provincetown.html>

<sup>49</sup> <http://www.provincetown.com/about/history/>

The nearest fishing ground is Stellwagen Bank, though “fished out” when the groundfish stocks fell to low levels, now shows signs of a recovering biomass of groundfish and other species. However, the Provincetown fleet must compete for Stellwagen fish with the North shore fleets of Boston and Gloucester. This competition forced P-town vessels further and further off shore, but because of the declining condition of their vessels, they can no longer risk going far, especially in marginal weather.

In 1996 there were 28 large vessels and 19 small jig boats.<sup>50</sup> Of these, 15 were longliners, two gillnetters, and two lobster fishing boats. Only 17 of the 28 vessels were in working condition. In 2001, there are only eight of the 28 large vessels operating, plus 12 small longlining/jigging/lobstering boats. The smaller boats are in better financial shape, since they are less costly and are expected to provide direct support for only 1 or 2 fishermen and their families.

Nevertheless, all vessels and fishing families are marginalized in a fishing community that is experiencing the worst possible combination of marketing, fish stock, and production capital losses. The total estimated participation in fishing is approximately 25 in groundfishing, 20 lobstering and another 10 in diverse small-scale fisheries. The estimate is a total of 55 fishermen, with 26 households directly dependent on fishing, and the remainder indirectly (doing other jobs such as trucking and carpentry).

#### *Support Services*

Local political leaders have not taken any action to support and integrate fishing into the changing economy. A significant decline in fishing infrastructure has occurred over the last two decades. Infrastructure which did exist but is now absent includes an icehouse, bait house, fish auction, boat builders, and NMFS extension office. Surviving facilities include two marine railways, two diesel fuel stations, three fish retail markets, a harbormaster, the Coast Guard, and a fishing/sailing monument in the town proper.

The marine railways target the recreational fishing sector, and the diesel facilities are also used by recreational vehicles, while the fish retail markets also rely on outside product, particularly during the summer tourist season. The town pier has two large docks that extend for approximately 300 yards. The construction is wood and cement and is sturdy enough for 18-wheeler truck traffic. At the end of the pier are two fish buyers: Oceanic Seafood and Whaling City Seafoods. The docks are in good condition, and the Chamber of Commerce has been actively promoting the quality of the harbor for berthing of large offshore (foreign) vessels, while providing little support to maintain the commercial fishing sector. Restaurants and local shops dominate the end of the pier, but there is little evidence of businesses dependent on the fishing industry.

#### *Marketing*

Most fish is sold locally, or taken by truck to the fish auctions or other markets. As with other ports, the imprecise knowledge on the marketing of fish products indicates a need for a region-wide study on marketing flows (human, biophysical, economic capital flows).

#### *Species, Seasonality*

While the summer is a boon time for fish produce, fishermen work through the year to make ends meet. However, the dilapidated condition of the fleet and limited DAS forces some boats to be tied up six months out of the year. January through March is the period for scallop fishing, dragger fish April to June, and scalloping resumes from July through September.

Landed species include:

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<sup>50</sup> Dyer and Griffith 1996.

The local catch of fish and shellfish species is quite diverse and includes cod, fluke, winter flounder, whiting, red hake, herring ( for bait), yellowtail, haddock, pollock, squid, lobster, swordfish, tuna, scup, monkfish, scallop, sea clams, and conch.

*Form of ownership (e.g., owner/operator; corporation)*

Vessels are usually owner-operated.

#### Recreational fishing and employment

Whale watching and fishing charters are available.

Some of the companies include:

Bay Lady II Excursion

Cape Cod Whale Watch

Dolphin Fleet Whale Watch

Flyer's Boat Shop Inc—Charter & Rental

Hindu Schooner—Charter & Rental

Off The Coast Kayak

Portuguese Princess Whale Watch

Shady Lady Co—Fishing Charters

#### Cultural role of fishing

##### *Cultural events*

The Portuguese fleet and the recreational fleet join together to celebrate the Portuguese Festival and parade for the Blessing of the Fleet in June.

##### *Ethnicity in the fisheries*

The dragger fleet is predominantly Portuguese and Portuguese-American.

##### *Religion*

Roman Catholicism predominates in the dragger fleet.

##### *Kinship & family*

For many years there were strong family ties among the fishermen. It was a way of life that young men longed to join. In the late 1970's many of the skippers had dropped out of school at 15 years of age to go fishing with their fathers, uncles, and/or brothers.

#### **Fishing-related programs and services**

##### *Other NGOs*

The Center for Coastal Studies, an independent, non-profit institution dedicated to research, conservation, and public education was founded in 1976. The Center has become internationally known for its progressive and innovative programs and scientific research. As part of the Entanglement Network, the Center and fishermen cooperate to protect and rescue marine mammals when they have become entangled in fishing gear.

## **Perceptions of the Fishing Community<sup>51</sup>**

#### **Importance of fishing to the community**

Provincetown epitomizes what can go wrong in a port highly reliant on one fishery albeit a multispecies fishery. There has been a steady decline and no diversification in the local commercial fishery since the 1996 groundfish study, and the lost human capital is not being replaced as fishermen retrain out of the industry or move to different ports such as New Bedford,

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<sup>51</sup> Based on key informant interviews



Gloucester and Chatham. Overall importance of the fishery to the community today is noted as “slightly important.” Nevertheless, there are innovative individuals who remain strongly committed to the industry and who seek ways to make their efforts profitable and sustainable.

### **Boundaries**

Community contacts are tied to the local town linkages, such as Chatham and Truro. People have the most contact with Truro, while others are linked to off Cape areas such as Boston and New Bedford. Specific community contacts were as follows:

Sell Fish	Provincetown
Offload Fish	Provincetown
Buy Fishing Gear	New Bedford/Chatham
Buy Ice	Cape Cod Ice (Yarmouth, Hyannis, Sandwich)
Buy Fuel/ Oil	Provincetown
Haul out Boat Repairs	Provincetown/New Bedford
Bookkeeping	Provincetown
Banking	Provincetown
Shopping	Provincetown
Go to Church	Provincetown
Got to School	Provincetown
Go for Health Care	Hyannis-Outer Cape Health/ Medical Center
Go for Childcare	Provincetown
Visit Relatives	Provincetown/out of state
Visit Friends	Provincetown
Go for Vacation	Florida, White Mountains, anywhere
Go for Recreation	Bars
Socialize	Provincetown, bars, dockside, home

### **Communication Issues**

Communication with local fishery managers was rated as “poor,” with state managers as “good,” and with regional federal managers as “poor.”

*“Managers just don’t listen to us. We can go to meetings and write letters, and we never get back a response.”*

### **Assessments**

Key respondents “strongly disagree” with the assessment of stocks, and are particularly concerned over having to throw back fish when quotas are exceeded.

### **Economic Change**

The local fishery is certainly in decline, maybe an irreversible decline for the present, made worse by a lack of overt local community support and no apparent infusion of outside economic capital into fishing. Ten years ago, the economic condition of the fishery was rated as “good.” However, even five years ago it was noted to be “poor” due to lost DAS and the increase in mesh size to 6 inches. Today, with DAS down to 88 and stiff quotas on catch, the fishery also receives a ranking of “poor.” Today, life is in no way “better” than it was five years ago, and is made “worse” by higher operating expenses, fewer fish, and more regulations. One advantage is that quality fish will receive a better price than five years ago, in part because of the influence of fish auctions in New Bedford, Gloucester and Portland.

The situation is not seen to be improving, and five year from now, key respondents still predict a condition of “poor” for the local fishery.

#### **Effects of recent management**

The most onerous local regulations are the closures in nearby water, including Stellwagen, and the limited DAS.

#### **Other concerns**

Another issue which fishermen are concerned may impede the viability of fishing is a sewage outfall pipe from Boston’s new sewage treatment plant. The outfall pipe carries fresh water and dumps it onto Stellwagen Bank. One fisherman of 40 years experience who was very encouraged by the recent comeback of scallops on the Bank, as well as the recuperation of the local lobster population which serves as a secondary catch on draggers said, *“It will be the end of us.”*

An environmental engineer who worked on aspects of the outfall pipe remarked, “the ecosystem will certainly be changed since they will be dumping millions of gallons of freshwater onto the Stellwagen Bank.” It is too early to tell what impact the outfall will have on the fishing industry, and this situation should be closely monitored by the responsible agencies.

#### **Characteristics of local fishermen**

For this population, there is still a sense of optimism, with key respondents indicating that most fishermen are “satisfied with their work. However, by some the future looks bleak:

*“A lot of the guys fishing here now are dying to get out (of fishing) because there are too many laws, the price is poor, there are too few fish, and there are better places to work.”*

Community Profiles  
 Dukes County  
 Cape Cod & the Islands Sub-region

#### 5.4.2. Duke's County (Martha's Vineyard)

##### *Background*<sup>52</sup>

"Martha's Vineyard, the largest island in New England, was formed by glacial action 10,000 years ago and lies 7 miles off the coast of Cape Cod. The Island is roughly shaped like a triangle with its base the straight south shore. It is 9 miles wide and 23 miles long at its furthest points and has a total land area of about 100 square miles. The Vineyard has 124.6 miles of tidal shoreline."<sup>53</sup>

"The first humans probably came here before the Vineyard was an island. It is thought that they arrived after the ice was gone, but before the melting glaciers in the north raised the sea level enough to separate Martha's Vineyard and Nantucket from the mainland. Indian camps that carbon date to about 2270 BC have been uncovered on the Island.

Legend surrounds the much later arrival of the first white men. Some believe Norsemen were here about 1000 AD. In 1524 Verrazzano sailed past and named the Island Louisa. The Indians called it Noepe which means 'island in the streams.'" Other explorers gave different names, but Bartholomew Gosnold, who named it for the wild grapes and for one of his little daughters, gave the one that stuck in 1602.

Within 40 years of Gosnold's visit, all of New England was being claimed and divided up by Europeans. Thomas Mayhew, a Bay Colony businessman, bought Martha's Vineyard, Nantucket, and the Elizabeth Islands for forty pounds. He made his only son and namesake copatentee. In 1642 the first white settlement on the Vineyard was established at Great Harbour, now Edgartown, under the leadership of Thomas Mayhew, Jr.

The ordained pastor of his flock, this young man by example and precept instituted a policy of respect and fair dealing with the natives that was unequaled anywhere. One of the first Mayhew rulings was that no land be taken from the native Island people, the Wampanoag Indians, without consent and fair payment. From this time on the colonial settlers and the Indians lived without the terror and bloodshed that has marked American history elsewhere. Within a few years a congregation of "Praying Indians" was established at what is still known as Christiantown.

This colonial period was marked by plenty as well as peace. The sea provided fish for both export and Island use, and the Indians taught the settlers to capture whales and tow them ashore to boil out the oil. Farms were productive as well; in 1720 butter and cheese were being exported by the shipload."<sup>54</sup>

"One of the earliest mentions of African home ownership on-Island was in the 1763 will of a Wampanoag man named Elisha Amos. The will, 1/272 Dukes County Probate, provides that his "beloved wife Rebecca" receive livestock and his house for as long as she lived. Rebecca Amos was an enslaved woman originally from Guinea, West Africa."<sup>55</sup>

"The American Revolution, however, brought hardships to the Vineyard. Despite the Island's vulnerable position, the people rallied to the Patriot cause and formed companies to defend their homeland. With their long heritage of following the sea, Vineyarders served effectively in various

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<sup>52</sup> <http://www.mvy.com/mvhistory.html>

<sup>53</sup> [http://www.mvy.com/minute\\_guide.html](http://www.mvy.com/minute_guide.html)

<sup>54</sup> <http://www.mvy.com/mvhistory.html>

<sup>55</sup> <http://www.mvy.com/diaspora.html>

maritime operations. In fact, it is probable that the first naval engagement of the war occurred in April, 1775, when Nathan Smith of Tisbury mounted three small cannons on a whaleboat and sailed with a small crew across Vineyard Sound, attacking and capturing the armed British schooner *Volante*.

Vineyarders, of course, knew that they could do little to resist a British invasion of the Island, and their worst fears were confirmed on September 10, 1778, when a British fleet of 40 ships sailed into Vineyard Haven harbor. Within a few days the British raiders had burned many Island vessels and had removed more than 10,000 sheep and 300 head of cattle from the Vineyard. The raid was an economic blow that affected Island life for more than a generation.

Before the Revolution, Vineyarders had been building large vessels and were sailing the North Atlantic from the Grand Banks to the Western Islands in search of whales and the valuable oil they yielded. After the start of the war, all this came to a stop, and the whaling industry did not make a real recovery until the early 1820s, when many of the mariners built their beautiful homes in Edgartown.<sup>56</sup>

"During the 1800s seafaring was one of the few ways for African American men to eke out a living during a socially and politically inhospitable era. Entry into most other industries was severely restricted. Due to the political powerlessness experienced in the oppressive political and social climate of the early 1800s, James Williamson, "a Negro man" who owned seventeen acres of "upland" in Martha's Vineyard's Christiantown, shipped aboard a whaler in 1828, as a means to raise much-needed cash.

The first whaling captain of African descent on Martha's Vineyard was born in Edgartown in July 1830. Captain William A. Martin was a highly regarded and respected Edgartown whaler. He mastered many successful whaling voyages and his career spanned in excess of forty years, with journeys on all of the earth's oceans."<sup>57</sup>

"The Civil War brought the end to the Golden Age of Whaling. The Confederate navy captured ships on the high seas. Others were bottled up in the harbors. Either way, it meant financial ruin for the ship owners and the Island.

A new industry was 'God sent' in a very literal way. In 1835 the Edgartown Methodists had held a camp meeting in an oak grove high on the bluffs at the northern end of the town. This was just one of the hundreds of revivals that were being held in outdoor settings at the time. The worshippers and their preachers lived in nine improvised tents and the speakers' platform was made of driftwood. The camp meeting became a yearly affair and one of rapidly growing popularity.

Wesleyan Grove, as the Oak Bluffs Camp Ground was called, rode the crest of the religious and cultural uplift movement. By the mid-1850s the Sabbath meetings here were drawing congregations of 12,000 people. They came for the sunshine and sermonizing in hundreds of individual church groups. Each group had its own communal tent where the contingent was bedded down in straw purchased from local farmers. Services were held in a large central tent.

The communal tents gave way to "family tents," which reluctant church authorities granted only to "suitable" families. But the vacationers urge could not be checked. Family tents turned into wooden cottages designed to look like tents. And the cottages multiplied, trying to out-do each other in brightly painted fantasies of gingerbread. A new all-steel Tabernacle structure replaced the big central tent in 1879. It stands today as a fine memento of the age of ironwork architecture.

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<sup>56</sup> <http://www.mvy.com/mvhistory.html>

<sup>57</sup> <http://www.mvy.com/diaspora.html>

Within 40 years of the first camp meeting here, there were crowds of 30,000 attending Illumination Night, which marked the end of the summer season with stunning displays of Japanese lanterns and fireworks.

Wesleyan Grove struggled to hold its own against such secular attractions as ocean bathing, berry picking, walking in the woods, fishing, and croquet playing. There were efforts to ban peddlers, especially book peddlers. A high picket fence was built around the Camp Ground proper. By the 1870s, Wesleyan Grove had expanded into "Cottage City" and Cottage City had become the town of Oak Bluffs, with 1,000 cottages plus boarding houses, stores, a lumberyard, and a bakery.

Steam vessels from New York, Providence, Boston, and Portland continued to bring more enthusiastic devotees of the Oak Bluffs way of life. Horse cars had to be employed to take vacationers from the dock to the Tabernacle. The horse cars were later replaced by a steam railroad that ran all the way to Katama. Among the first passengers on the railroad were President Grant, accompanied by Vice President Wilson, Secretary of State Robeson, Postmaster General Jewel, and Governor Talbot of Massachusetts.

The railroad gave way to an electric trolley line (from Vineyard Haven to the Oak Bluffs wharves), and the trolley gave way to the automobile. The steamers and their throngs of eager rusticators grew fewer. Oak Bluffs retains a charm today that serenely reminds us of earlier times.<sup>58</sup>

There are six towns on Martha's Vineyard; three up-Island towns: Aquinnah, Chilmark and West Tisbury and three down-Island towns: Vineyard Haven, Oak Bluffs and Edgartown (which includes Chappaquiddick). The terms up-Island and down-Island are nautical references to degrees of longitude designated on maps and charts.

Edgartown was the Island's first colonial settlement and has been the county seat since 1642. The town is renowned for its stately, white Greek Revival and Federal houses built by whaling captains. The distinctive, museum-piece architecture preserves the ambience of the 19th century seaport to the present day.

The town of Tisbury, also known as Vineyard Haven, was one of New England's busiest ports in the 1800s. At that time, the area around the harbor was known as Holmes Hole and was a convenient anchorage for ships traveling between the East Coast of the United States and Europe. In those days, most of the coastwise shipping traveled through Vineyard Sound. In 1845 13,814 vessels were counted.

Oak Bluffs, formerly known as Cottage City from the many gingerbread cottages which are still found there, is also home to the Flying Horses Carousel, the oldest operating merry-go-round in the United States. The horses were hand-carved in New York City in 1876. This historic landmark is maintained by the Martha's Vineyard Preservation Trust that manages this and several other historic sites on the Island.

West Tisbury, incorporated in 1892, was the 'industrial' heart of the Island, as it was home to the Island's grist mill, a clay works, a salt works, extensive trap fishing operations and a manufacturing center for satinet, a heavy, Island-made, woolen fabric used to make whalemens jackets.

Aquinnah (formerly known as Gay Head) is home to the Wampanoag Tribe, the only federally recognized Native American tribe in Massachusetts. This recognition has resulted in a government-to-government relationship between the United States and the Wampanoag Tribal

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<sup>58</sup> <http://www.mvy.com/obinfo.html>

Council. On May 14, 1997 voters in the town of Gay Head decided to change the name of the town to Aquinnah. This change was signed into law on May 7, 1998.

Chilmark is known for its rolling hills and unmatched coastline. Before the days when the Coastguard looked out for shipwrecked vessels, Vineyarders took it upon themselves to form volunteer groups that provided assistance to sailors in times of need. The open dories, one of which was provided by the Massachusetts Humane Society, were launched into stormy seas from Squibnocket Landing, the only beach on the south shore shallow enough for boats to be landed or launched in heavy weather.

Chilmark was also noteworthy for its population of deaf. "For almost three centuries, due to an inbred recessive gene, the population of Martha's Vineyard had an unusual proportion of profoundly deaf people. Modern mobility and population diversity have virtually erased the Vineyard's deaf community, but in 1854, when the incidence of deafness on the island peaked, the national average was one deaf person in 5,728; on the Vineyard, it was one in 155. In Chilmark it was one in 25, and in Squibnocket, a section of Chilmark, one in four babies born in the mid-19th-century was deaf.

Families in Chilmark and West Tisbury earned their living farming or fishing or both, often supplemented with another trade such as wood-cutting or trapping. Families stayed in the same village, often even the same house, for two or even three centuries. Sons followed fathers into their fields and fishing boats.

Yet the isolation was also a blessing. For 250 years these rural Vineyarders never heard the mainland idea that an inability to hear or speak could be a handicap. "Practical in all things," a reporter in 1895 went on, "they began to build on a signing system their ancestors had used in England. In the stores, on the farms, and up the creek, Martha's Vineyard sign language was the only language that everybody knew."

Children learned to sign "from the crib," at the same time they learned to speak. At town meetings, hearing signers would stand in front and translate the goings-on for the deaf. The same thing went on in church. If a deaf person . . . had something to say to the congregation, he or she would stand up and sign; if someone didn't know sign fluently, chances were that the person next to him did and could translate."<sup>59</sup>

Martha's Vineyard is part of the Dukes County, which also includes the Elizabeth Islands and Noman's Land. There are seven towns in Dukes County, the six Vineyard towns and the town of Gosnold on Cuttyhunk Island, the most southerly of the Elizabeth Islands. The population of Martha's Vineyard is approximately 14,248 year round and 105,625 during the summer."<sup>60</sup>

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<sup>59</sup> <http://www.mvy.com/spokehand.html>

<sup>60</sup> [http://www.mvy.com/minute\\_guide.html](http://www.mvy.com/minute_guide.html)

Community Profiles  
 Dukes County  
 Cape Cod & the Islands Sub-region

### 5.4.2.1. Vineyard Haven (Tisbury)

#### *Background*

“When ships were powered by wind and canvas, Vineyard Haven was one of New England's busiest ports. Most of the coastwise shipping traveled through Vineyard Sound (13,814 vessels were counted in 1845). Holmes Hole, as this harbor community was called, provided a convenient anchorage. Here a ship and its crew could lay over comfortably to wait out bad weather, pick up provisions, or take on a pilot who could negotiate the rips and shoals that were the special perils of this sea route.”<sup>61</sup>

Today, Vineyard Haven is home to a vibrant local fishery that thrives on an influx of summer tourists. As the primary port of Martha's Vineyard, Vineyard Haven is reached by ferry from Woods Hole, and contains many of the elements of gentrification typical of the most famous tourist sites in New England. Six dockside hotels and inns, interspersed with numerous trendy retail shops, restaurants and marinas, are complemented by historic homes on an island dotted with fishing coves and shellfish flats with a small but sustained commercial fishing presence.

Unlike other gentrified sites, such as Newport, the fishing infrastructure here is not antithetical to gentrification but blended with it. Fishermen are viewed as welcome contributors to the local cultural capital. Importantly, fishermen provide desired seafood products year-round to the four seafood restaurants and two seafood processors/retailers in town. In general, residents of Martha's Vineyard tend to be tolerant, accepting fellow inhabitants and their occupations as part of the island community:

*“Folks here are all pretty much respectful of each other – there are a lot of rich folks that have money and of course the summer tourist crowd, but people support each other here and help out when necessary- we're all part of one community...”*

Despite the description of the fishing industry as “very important” to Vineyard Haven and Martha's Vineyard, it is notable that only 2 percent of the dock space is utilized by the small commercial fleet. When demand for finfish is down in the fall/winter season, some fishermen compensate by clamming, or working in carpentry and house maintenance for the many homes that are summer “cottages.” There is little new development on the Island, what occurs more frequently is renovation of already existing houses rather than new construction.

#### *Governance*

Town meeting and Board of Selectmen

#### *Demography*

##### Population

The population according to the 1990 Census was 1778, 795 male and 983 female.

##### Age Structure

In 1989 there were 464 children (under 21), 917 adults (21 to 64 years) and 397 seniors (65 and older).

##### Education

Of persons 25 or older, 171 had no high school diploma, 357 had graduated from high school, 399 had some college and 315 had a Bachelor's or higher degree.

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<sup>61</sup> <http://www.mvy.com/vhinfo.html>

Housing

There were 1338 housing units, 850 of which were occupied and 488 were vacant. Of the occupied units, 542 were owner-occupied and 308 were rented. The median year housing structures were built was 1943. The median value of owner-occupied housing units was \$167,500.

Racial and Ethnic Composition

Eighty-eight percent of the population was white (1574 individuals) with 63 Blacks, 51 American Indian/Eskimo/Aleut, and 38 Asian. English, Irish and Portuguese ancestries were the most frequently cited.

*Economic Context*Income

Median household income in 1989 was \$25,965; per capita income was \$16,679.

Employment

## INDUSTRY

Universe: Employed persons 16 years and over

<b>Agriculture, forestry, and fisheries (000-039)...</b>	<b>36</b>
Mining (040-059)...	0
Construction (060-099)...	100
Manufacturing, nondurable goods (100-229)...	16
Manufacturing, durable goods (230-399)...	28
Transportation (400-439)...	52
Communications and other public utilities (440-499)...	16
Wholesale trade (500-579)...	20
Retail trade (580-699)...	230
Finance, insurance, and real estate (700-720)...	42
Business and repair services (721-760)...	24
Personal services (761-799)...	59
Entertainment and recreation services (800-811)...	7
Professional and related services (812-899):	
Health services (812-840)...	106
Educational services (842-860)...	17
Other professional and related services (841, 861-899)...	89
Public administration (900-939)...	35

## OCCUPATION

Universe: Employed person's 16 years and over

Managerial and professional specialty occupations (000-202):	
Executive, administrative, and managerial occupations (000-042)...	80
Professional specialty occupations (043-202)...	98
Technical, sales, and administrative support occupations (203-402):	
Technicians and related support occupations (203-242)...	11
Sales occupations (243-302)...	95
Administrative support occupations, including clerical (303-402)...	132
Service occupations (403-472):	
Private household occupations (403-412)...	5
Protective service occupations (413-432)...	7
Service occupations, except protective and household (433-472)...	156
<b>Farming, forestry, and fishing occupations (473-502)...</b>	<b>43</b>
Precision production, craft, and repair occupations (503-702)...	151
Operators, fabricators, and laborers (703-902):	



Machine operators, assemblers, and inspectors (703-802)...	25
Transportation and material moving occupations (803-863)...	44
Handlers, equipment cleaners, helpers, and laborers (864-902)...	30

#### CLASS OF WORKER

Universe: Employed persons 16 years and over	
Private for profit wage and salary workers...	520
Private not-for-profit wage and salary workers..	81
Local government workers...	24
State government workers...	21
Federal government workers...	13
Self-employed workers...	218
Unpaid family workers...	0

#### *Transportation and Access*

Ferries to the Island sail from Woods Hole, Falmouth, Hyannis, New Bedford, New London, Montauk (Long Island) and Nantucket. The ferries from Woods Hole carry both passenger and cars, and sail every day, year-round. Reservations for cars are recommended. The ferries from Falmouth, Hyannis, and New Bedford carry passengers only, and operate during the spring, summer, and fall. Passenger ferries from Nantucket run during the summer and the ferry from Montauk runs on selected weekends in July.

There is year-round scheduled airplane service to the Martha's Vineyard Airport from Boston, Hyannis, Nantucket, New Bedford, and Providence. Charter services also are available, and the airport has facilities for private planes. A grass field (general aviation) airport is also located at Katama.

Bus service to Woods Hole is provided from Boston and from New York (stopping in Providence) daily, year-round, by Bonanza Bus Line.

Marina and mooring services are available in the harbors at Edgartown, Menemsha, Oak Bluffs, and Vineyard Haven.

#### *Hospitals, schools, libraries*

Vineyard Haven Public Library

#### *Fisheries Profile*

##### Commercial fishing and fisheries-related employment

###### *Harvesting structure*

Approximately five trawlers/scallopers and six lobster boats fish out of Vineyard Haven, with about the same number fishing out of Edgartown on the other side of the island. Locals also fish seasonally for clams and other shellfish in inshore shoals and may also go after lobster ('ten potters'). This local harvest follows seasonal pulses, and can also involve some small-scale finfishing with gill nets and other gear by locals to either provide for friends and family, or take advantage of good prices available in local fish markets.

###### *Processing structure*

Two processors process and fillet fish for local sale. The prices charged for the fillets are usually several dollars higher than elsewhere. For example, codfish at \$2.10 a pound in a mainland wholesale market/fish auction could be sold here for \$3 to \$4/pound. Price is clearly related to the forces of supply and demand. Because residents are a boat ride way from other sources of seafood products, they rely on the local fish markets to provide them with fresh produce.

Moreover, the economic capital available to many of the wealthier residents makes quality more important than price.

#### *Support Services*

Despite the high degree of gentrification and upper-class residents associated with the community, there is an adequate supporting infrastructure to support the local fishing activity. In addition to the fish processors, there is a marine railway, ice house, and marine supply house. The two docking facilities are shared with recreational fishermen, but local commercial fishermen are part of the "island color" and key respondents indicated there was no competition for space for most of the year. This is partly because the number of residents drops by several thousand as fall approaches and mooring sites and summer homes are deserted by the more affluent community members.

Fishermen's supplies are available, but usually at a premium, since they are primarily geared to recreational fishing and because they must be imported via the ferry. Marine supplies are more affordable in New Bedford and Chatham.

There are two sources of dockside diesel fuel, and three trucking operations, and a bait house and one national/ international seafood broker, but no air fill stations, boat yards, boat dealers, fish auctions, NMFS extension office, or fishing monuments. The bait house also provides significant seasonal support to the fishing excursion boats, of which there are six in town. The fishermen's association, or Seaman's Bethel, also has a social service as well as fishery function.

Because of the well-developed recreational fishery, there is a boat insurance agency, a marine haul out facility that services local boats of small to moderate size, and two boat welders in town. There are also three recreational boat dealers to go along with two marinas. In line with the tourist character of the port, there are boat tour operations.

#### *Employment (year-around and seasonal)*

A key respondent estimated that besides 30 households island-wide directly dependent on fishing, there are at least another 50 households in the area that are indirectly dependent, ranging from owners of retail businesses and seafood restaurants to those who buy seafood for the dinner table. The actual number of those indirectly dependent through the restaurant trade goes up in the summer to an estimated 200, most of these holding jobs in the restaurant and recreational fishing sectors.

#### *Species, Seasonality*

The local catch of fish and shellfish species is quite diverse, and includes cod, fluke, scup, winter flounder, yellowtail, haddock, pollock, squid, lobster, swordfish, tuna, monkfish, scallop, and sea clams. If a particular fish is not available (e.g. monkfish), but there is a demand for it from a high paying customer, calls may be made to a boat at sea or fish may be brought in by truck on the ferry.

While the summer is a boon time for fish produce, a resident population that includes many retired persons maintains the demand throughout the year. Fish produce is brought in from local catches and from boats from New Bedford, Edgartown, and Chatham.

There are no alternative fisheries that people are switching over to, but fishermen may alternately pursue lobstering, finfishing and shellfishing depending upon the season and demand.

#### Recreational fishing and employment

##### *Fishing Charters & Parties*

ABC - Atta Boy Charters (Oak Bluffs), Banjo Charters (Oak Bluffs), Big Eye Charters (Edgartown), Book-a-Boat (Menemsha), Capt. Porky's Bait & Tackle (Edgartown),

Conomo Charters (Aquinnah), Coop's Bait & Tackle (Edgartown), Great Harbour Sport Fishing Charters (Edgartown), Island Fly Fishing Guides (West Tisbury), The Island Lure Charter Fishing (Chilmark), Larry's Tackle Shop, (Edgartown)  
 Machaca Charters (Edgartown), Osprey Custom Rods & Tackle (West Tisbury), Party Boat "Skipper" (Oak Bluffs), Sharks Landing Bait, Tackle & Charter Co. (Oak Bluffs), Sortie Charters (Menemsha, Chilmark)

### Cultural role of fishing

#### *History and museums*

Vineyard Seaman's Society / Martha's Vineyard Seafaring Center, The Bethel Collection (Old Schoolhouse Building, owned by the Martha's Vineyard Preservation Trust). For over 100 years, the Bethel served seafarers who visit the Island as well as those who live here. Many of those seamen and their family members gave the Bethel gifts in appreciation of its work and the services provided. These gifts have been preserved and today constitute the core of The Bethel Maritime Collection. It includes: models of schooners in bottles, whale tooth and walrus tusk carvings, early photographs and drawings of Vineyard Haven, shells from Island beaches, a lifebelt from the Titanic, a beautiful quilt, paintings, plus a wide variety of other "sailor souvenirs." It is operated in cooperation with the Vineyard Maritime Co. which offers Coast Guard licensed training.

## **Perceptions of the Fishing Community<sup>62</sup>**

### **Importance of fishing to the community**

Key respondents indicated that local fisheries are "very important," a sustainable and important "island tradition." Seafood is important on restaurant menus but is also an important part of the diet of year round locals, many of whom now are retired.

### **Boundaries**

The community with which the people of Martha's Vineyard have the most contact is Woods Hole. Although with the summer influx, people from all over New England arrive by plane, car or ferry. One quality of life issue that arises in the summer is the impact of cars. Restrictions on the numbers of cars that would be allowed on the Island were being contemplated.

Capital contacts can be divided up into those encompassing social capital (e.g., visit friends, go for recreation, go for vacation, visit relatives, socialize, go to church); economic (e.g., sell fish, offload fish, buy fishing gear, haul out for boat repairs, go to the bank, go shopping), and human (e.g., go to school, go for childcare, go for health care, go for retraining).

Sell Fish	Martha's Vineyard, New Bedford, Chatham
Offload Fish	Martha's Vineyard
Buy Fishing Gear	New Bedford
Buy Ice	Martha's Vineyard
Buy Fuel/ Oil	Martha's Vineyard
Haul out Boat Repairs	Martha's Vineyard, New Bedford
Book Keeping	Martha's Vineyard
Banking	Martha's Vineyard
Shopping	Martha's Vineyard, Woods Hole
Go to Church	Martha's Vineyard
Got to School	Martha's Vineyard

<sup>62</sup> Based on key informant interviews

Go for Health Care	Woods Hole
Go for Childcare	Martha's Vineyard
Visit Relatives	Martha's Vineyard, out of state, elsewhere
Visit Friends	Martha's Vineyard
Go for Vacation	Florida, White Mountains
Go for Recreation	Martha's Vineyard- party boats, restaurants, shops
Socialize	Martha's Vineyard-restaurants, home, dockside

### **Communication Issues**

Concern was voiced over the declining local lobster harvest, especially since occasional animals were showing up with shell rot disease. Nevertheless, there was also optimism that groundfish catches and local stocks are on the rebound, and that communication with management is overall a success.

On a one to five scale, communication with local fishery managers was rated as "very good," with state managers as "excellent," and with regional federal managers as "very good."

### **Assessments**

Fishermen "strongly disagree" with the assessment of stocks, but the 88 days at sea quota, given the high prices that a good quality catch brings, are still adequate for the local fleet to survive. In general, key respondents believe that nearby fish stocks are better off than management indicates. They maintain that if catch and DAS restrictions were lifted there would be no significant harm to the local resource and fishermen would benefit.

### **Economic Change**

Ten years ago the fishery was noted as being "very good," five years ago as "good," and today is rated as "good," with a mark of "very good" anticipated five years from now. Today, increased prices for quality fishery products, and a price structure that exceeds mainland prices, has meant more money coming in, compensating for the increasingly complex and constantly shifting regulatory climate. Because of the high local demand for seafood, and the limited local competition among fishermen, the present small fleet will probably remain stable far into the future.

### **Effects of recent management**

No specific regulations were noted as having had a significant impact on recent fishing conditions.

### **Characteristics of local fishermen**

#### *Job satisfaction*

Even though they have a tenuous hold on dock space, fishermen are perceived by key respondents to be "very satisfied with their work." Good prices and little competition allow the small fleet of vessels to make ends meet.

Boston Area Sub-region  
Counties: Suffolk, Plymouth

## 5.5.1. Suffolk County

### 5.5.1.1. Boston Harbor

#### *Background*

“During colonial times ... Boston lived off the sea. Its maritime economy was based on fishing, shipbuilding, trade, commerce, and a variety of import and export enterprises. But these activities spun off numerous land-based enterprises—taverns, hotels, Chandler shops, clothing stores, rope walks—and numerous other businesses that made Boston a lively and profitable seaport town.”<sup>1</sup> As both the capital of the Massachusetts Bay Colony and the principal market for all New England, early Boston hummed with maritime economic activity.

“Boston was ripe for maritime success in the eighteenth century. It had a deep protected harbor situated at the mouth of three rivers that provided access to the agricultural uplands. With the rise of industry in the nineteenth century, the rivers still served the city well, as the sites for numerous factories (although rail not river barges more often provided the transit). The port not only sent New England-made goods worldwide; it served as the gateway to waves of immigrant labor for these expanding industries. The burgeoning population, both native and newcomers, also provided a huge customer base for the city’s retail establishments.”<sup>2</sup>

“Colonial Boston’s diverse trade economy created jobs for a great number of tradesmen: coopers, bakers, hatters, tallow chandlers, truckmen, porters, carpenters, shipbuilders. Alongside the large mercantile firms and major port industries like shipbuilding, small business such as the Bell in Hand Tavern (est. 1795) nestled in the crowded blocks around the town dock. Town business prospered and grew. By 1740, Boston had become the commercial hub for the whole region, home to wholesalers and agents for upland industries (including distilleries in Medford and cod fisheries in Plymouth) as well as supporting an array of marine-based trades quartered around its own inner harbor.

The Towne House (later the Old State House) was the center of commerce. From its commanding view down the Long Wharf, merchant-ship owners, investors and ship masters met daily, establishing the commercial network for New England’s trade to the southern colonies, the West Indies, Spain, and most significantly to mother England. Boston soon supplied much of North America and Great Britain with rum, molasses,<sup>3</sup> and fish in exchange for lumber, animal hides and English manufactured goods.

Boston’s seaborne commerce changed in the nineteenth century, moving away from foreign goods and coming to depend on the shipping of New England manufactured goods. As this domestic trade increased, port industries became more specialized. A sophisticated interdependent system of producer-manufacturers, warehousemen, wholesalers, retailers, haulers, coastal shippers, and rail agents developed to serve the port of Boston.

Ships were growing larger in size and tonnage. Marine trades evolved from small artisan shops to large manufacturing operations. The shipping industry was outgrowing Boston’s inner harbor. In the 1830s, developers looked to the vast waterfronts of South Boston and East Boston. East Boston became the major point of entry for ocean vessels. Vast piers were built by major rail lines like the great Eastern Railroad, the Boston and Maine, and the Boston and Albany. A diverse range of heavy industries in both South and East Boston

<sup>1</sup> [http://www.ci.boston.ma.us/dnd/obd/G\\_OBD\\_Boston\\_Business\\_Heritage5.htm](http://www.ci.boston.ma.us/dnd/obd/G_OBD_Boston_Business_Heritage5.htm)

<sup>2</sup> Ibid.

<sup>3</sup> The role of cod in this circle of trade is fascinatingly described by Mark Kurlansky in *Cod* (New York: Walker and Company, 1997).

supported this domestic transport system. These industries were epitomized by the world renowned Atlantic Works of East Boston and R. Estabrooks Sons (City Iron Foundry) and the still active Boston Wharf Company of South Boston. With the advent of the harbor tunnels in the 1950s, these waterfronts were linked, evolving into the major road-hauling services that still traverse these industrial waterfronts today.”<sup>4</sup>

Early in the 1900’s Boston’s fishing industry was characterized by large gas or diesel-powered vessels that had adopted otter trawls and beam trawls to catch groundfish for the increasing demands of the fresh-fish market.<sup>5</sup> “On-shore processors filleted the local catch...for easier consumer preparation. The Boston Fish Pier was built in 1913 as a state-of-the-art fish unloading, processing and storage center. The fresh fish business in Boston reached its peak during the 1930s when 300 million pounds of fresh fish were landed per year on the Fish Pier.”<sup>6</sup>

“By the 1930’s traditional manufacturing industries were beginning to move south to access cheap labor or were dying out.”<sup>7</sup> Nevertheless, the diverse modes of transportation available in Boston facilitated the continuation of the city’s role as a hub. Today, container cargo port facilities, rail access, major highways and the international air terminal attract the flow of goods. In addition, fish harvesting, processing and marketing, while transformed, have remained a critical component of Boston’s economy.

### *Fishing Dependency*

Boston is a complex urban environment, the metropolitan center of a cluster of neighboring cities and towns, the state capital with a robust economy featuring a multiplicity of industries ranging from biotech to farmers’ markets. The medical industry, higher education facilities, and tourism are just a few of the businesses that engender the flow of all forms of capital in and out of the area. While fishing-related business is dwarfed by some of the others, it is significant not only for its role as a component of Boston’s economy, but also for its importance in serving dispersed, smaller communities that are more obviously dependent upon fishing and fishing-related businesses. Boston remains an **essential provider** of fishing-related support services.

The importance of Boston to the New England region is very significant, in that it is a nexus for the international transshipment of fishery products throughout New England. The only other major point of transshipment is from New York through Fulton’s Market. However, Boston is more central to the overall flow of produce, and boasts a large number of seafood brokers as well as larger seafood companies with fleets of trucks and major facilities.

### *Governance*

Boston has a mayor and city council. It is also the state capital of Massachusetts.

### *Demography*

#### Population

The 1989 population of Boston was 574,283. Of these 274,259 were male and 300,024 were female.

<sup>4</sup> <http://www.ci.boston.ma.us/dnd/obd/GOBDBostonBusinessHeritage5.htm>

<sup>5</sup> The role of Italian immigrants in the Boston fishing fleet is highlighted in an article written November 16, 1909 entitled *Italian Fleet of Boston*. See at <http://downtosea.com/1901-1925/itInFleet.htm>

<sup>6</sup>Georgianna, Dan. 2000. *The Massachusetts Marine Economy*. Dartmouth, MA: University of Massachusetts.

<sup>7</sup> Ibid.

### Age Structure

Sixty percent of the population (345,162) was in the 22 to 65 years old range. 41,720 were under 6 years; 56,288 were between 6 and 15; the 16 to 21 years old category included 64,957 individuals.

### Education

Of persons 25 years and over, 88,875 did not graduate from high school. 97,233 had a high school degree or equivalency. Of the 134,279 individuals who had attended some college, 64,390 had received a Bachelor's degree. Graduate or professional degrees were held by 45,321.

### Housing

The median year housing structures were built was 1939. Of the 250,863 units, 228,464 were occupied, 22,399 were not occupied. Of the occupied housing, 157,920 units were rented, 70,544 were owned. Median housing value was \$160,083.

### Racial and Ethnic Composition

Sixty-three percent of the population was white in 1989 (361,513 individuals). About 25 percent were Black (146,695); 5 percent were Asian (30,457), 10.39 percent were Hispanic, and 33,753 classified themselves as "other race." American Indians, Eskimo or Aleut numbered about 1865.

### *Economic Context*

#### Income

Median household income in 1989 was \$29,180; median family income was \$34,377 and per capita income was \$15,581.

#### Employment<sup>8</sup>

Universe: Employed persons 16 years and over	
Agriculture, forestry, and fisheries (000-039)	1440
Mining (040-059).	142
Construction (060-099)	11416
Manufacturing, nondurable goods (100-229)	12686
Manufacturing, durable goods (230-399)	15916
Transportation (400-439)	12778
Communications and other public utilities (440-499).	7291
Wholesale trade (500-579).	7810
Retail trade (580-699)	40072
Finance, insurance, and real estate (700-720)	31239
Business and repair services (721-760)	16709
Personal services (761-799)	11007
Entertainment and recreation services (800-811).	3948
Professional and related services (812-899):	
Health services (812-840).	38290
Educational services (842-860)	29753
Other professional and related services (841, 861-899).	32160

### *Transportation and Access*

"Boston is New England's leading port; a regional rail, bus, and truck terminal center; and an important air transport center. Boston is a hub from which many highways extend to serve the city to the north, west and south."<sup>9</sup>

<sup>8</sup> 1990 US Census Data. Database:C90STF3A. Found at <http://venus.census.gov/cdrom/lookup/>

<sup>9</sup> <http://www.state.ma.us/dhcd/iprofile/035.htm#GOVERNMENT>

Major Highways

Route 128 forms a semi-circle around Boston. The Central Artery gives access to the downtown area, and the Southeast Expressway extends to the South Shore area. The Massachusetts Turnpike (I-90) crosses Route 128 in Weston and terminates in West Stockbridge, with an extension to the New York Thruway.

Rail

Amtrak provides passenger service to New York City and Washington, D.C. MBTA subway service is available on the Red, Orange, Green and Blue lines. Commuter rail service is available to both North and South Stations. Conrail and the Springfield Terminal Railway (STRR) offer freight service to Boston. Conrail has an intermodal facility in Allston and a Flexi-Flo terminal in Boston.

Bus

Boston is a member of the Massachusetts Bay Transportation Authority (MBTA), which provides fixed route service within the city and to surrounding towns. The MBTA also provides THE RIDE, a special transit service for the elderly and disabled.

Other

Logan International Airport, easily accessible from downtown Boston, is the busiest Primary Commercial Service (PR) facility in New England. Also, Hanscom Field in Bedford and Norwood Memorial Airport provide commercial service. The Nashua Street Heliport is located near North Station. MBTA commuter boat service is available to Charlestown and to Hingham.

*Hospitals, schools, libraries*

There are no museums strictly focused on commercial fisheries but the Boston National Historical Park, USS Constitution Museum, and New England Aquarium all have exhibits and educational programs that are marine and/or fisheries related.

The Boston Public Library is well respected for its collection and its librarians. The system includes 26 neighborhood libraries.

There are about thirty hospitals in Boston:

- Arbour Hospital
- Beth Israel Hospital
- Boston City Hospital
- Boston University Infirmary
- Brigham And Women's Hospital
- Carney Hospital
- Children's Hospital Medical Center
- Crittenton Hastings House
- Dana Farber Cancer Center
- Faulkner Hospital Corp.
- Franciscan Children's & Rehab
- Hahnemann Hospital
- Hebrew Rehab Center For Aged
- Jewish Memorial Hospital
- Lane Health Center
- Lemuel Shattuck Hospital
- Mass. Eye And Ear Infirmary
- Mass. General Hospital
- Mass. Mental Health Center
- Mattapan Hospital
- New England Baptist Hospital
- New England Deaconess Hospital
- New England Medical Center Hospital
- Shriner's Burn Institute



Simmons College Health Center  
 Spaulding Rehabilitation Hospital  
 St. Elizabeth's Hospital Inc.  
 St. John Of God Hospital  
 St. Margaret's Hospital  
 University Hospital, Inc.

## *Fisheries Profile*

### Community and fishing dependency

Boston and Massachusetts' North shore communities are ranked among the lower third of fishery dependent communities in New England according to this study's indices. As was noted in the Chapter 3, however, this ranking is misleading. Because our dependency ratios had to rely on census data that identifies harvesters but not other fisheries-related occupations, the numbers do not reflect the real importance of the fishing industry to the Boston sub-region. Boston's significance lies in its role as a major brokerage center for all of New England. Though the number of harvesters who fish out of Boston Harbor are limited, the support services for fishing that are based in Boston make the city an *essential provider* to the regional industry. Regulations and downturns in the stocks have repercussions for the support industries that reverberate along the whole coast and region.

According to the census numbers, the percentage of fisheries-related occupations in the Sub-NRR of the Boston Harbor NRR is 7, compared with an average of 22 for the eleven sub-regions. Only 0.05 of total employed are in fishing, and the fishermen/alternative ratio index is 0.22, which is below the mean of 2.14 by a factor of ten. These values, however, do not reflect the major flow of biophysical capital (commercial fish produce) to and from Boston. Twenty years ago, Boston Harbor was lined with commercial fishing vessels, sometimes three-deep at the dock, vying to fish the local waters and offload their product. Though the harvesting sector has now moved to other ports, Boston remains a major marketing hub for fishery produce.

When the fleet was larger, offloaded product was immediately bought at Boston's early morning auction and shipped to markets—locally, nationally and worldwide. Before the Portland (Maine) display auction was established, Boston's auction was the price setter for virtually all the dealers in the region. Due in part to its location, recent regulations have all but wiped out the Boston fishing fleet. Restrictions on Days at Sea (DAS) make it much more economical for vessels to leave from ports closer to the fishing grounds, such as Scituate, Chatham or Gloucester, than to steam out of Boston, thereby using up both limited DAS and costly fuel.

Today, only a dozen fishing vessels dock at the main commercial facility and 25 or so lobster boats are scattered around the harbor. This has transformed purchasing, marketing and shipping strategies of local seafood brokers. In the past, brokers could survive with a couple of small trucks to service the regional market and transport product to Logan. But today, brokers must travel to far-flung fishing communities to obtain product. Trucking, therefore, has a much more significant role than in the past. The larger refrigerated trucks have had a secondary effect on the infrastructure of Boston's fishing-related industry. The Fish Pier was built to accommodate hand carts and small trucks, the space needed for loading, unloading and maneuvering of the 18-wheelers is putting pressure on the traditional center of the fishing-related business.

The twenty or more brokers in Boston service hundreds of boats up and down the coast. For example, Atlantic Seafood of Boston obtains fish from forty to fifty boats along the Massachusetts coast with the aid of three large refrigerated produce trucks. Vessels offload fish at the nearest convenient dock, it's trucked to Boston, and from there is absorbed by regional, national and international markets. The proximity of Logan International Airport to the Boston trucking terminals and seafood brokers makes possible the rapid airfreight of such

products as whole monkfish and monkfish livers for the Asian market. It also enables processors and brokers to import fish from around the world to fill their orders for fish the New England harvesters are unable to provide.

### Commercial fishing and fisheries-related employment

#### *Harvesting structure*

Twenty to twenty-three vessels are members of the Boston Harbor Lobster Cooperative that manages the Cardinal Maderios Wharf and lobster terminal. Development pressures came close to forcing the abandonment of lobster fishing out of the Harbor due to loss of space, that is, the loss of places to tie-up, load and unload, store gear, etc. For many years, the majority of lobstermen had tied up at Pier 7, near the Fish Pier, but a few years ago, they were forced out. Eventually, with help from the Roman Catholic Archdiocese of Boston (Bernard Cardinal Law) and the Commonwealth's Office of Coastal Zone Management, a site beside a derelict power plant with a view of the Black Falcon Cruise terminal was found and a \$3 million renovation of a wharf was undertaken.<sup>10</sup>

Today, most of the local lobstermen have diversified, lobstering June to January, then longlining for cod or dogfish, dragging for surf clams in the winter and fishing for sea urchins in September.

Twelve stern draggers fish now out of Boston. The boat-buyout program put many people out of work. While boat owner-operators could benefit from selling off their boats, crewmembers gained no benefit from the program and were forced to seek alternate employment.

#### *Processing structure*<sup>11</sup>

Since 1992 when the downturn in groundfish stocks and the associated tightening of regulations reduced the supply of fresh fish for processing, about a third of the firms in Massachusetts have left the processing business. Surviving firms go farther afield to seek product, forming buying relationships with suppliers in smaller ports and attending the display auctions in Gloucester, New Bedford and Portland (Maine). More fish is imported and a wider variety of species are utilized. In other words, their capital contacts extend further than in the past, thus creating a closer network of ties, often with primary producers in smaller and fisheries dependent ports.

Some of the processors exploit niche markets, providing product for trade shows and promotions, for example, or use their contacts to wholesale products without processing.

The relatively new HACCP regulations have required new investments in equipment and training. Prices, however, have not kept pace with the increased costs. Compared to processing firms in other ports, Boston companies do have some advantages. In particular, access to Logan Airport and the New England regional food wholesaling system favors them.

Boston specializes in fresh fish production and wholesale marketing, employing about 1,063 individuals earning about \$40 million in 1997. Some of the employed are first generation seafood processors, immigrants from countries such as Guatemala and Mexico. These individuals are critically dependent on the processing opportunities to make a living, and cannot easily find alternate employment.

<sup>10</sup> Chapter 91, a Massachusetts land-use regulation that mandates water-dependent use on filled tidelands, and the fact that the inner harbor is a Designated Port Area (DPA) helped ensure that the fishermen's use of the waterfront had higher priority than alternative proposals to construct a cement plant or coal conversion plant on the same site.

<sup>11</sup> Georgianna, Dan. 2000. *The Massachusetts Marine Economy*. Dartmouth, MA: University of Massachusetts

### *Support Services*

For more than 80 years the historic building at the end of the Boston Fish Pier, now called the Exchange Conference Center, housed the New England Fish Exchange, the oldest daily fish auction on the East Coast. The Boston Fish Pier, which opened in 1915, still provides berthing space for some of the region's fisherman and houses the fish auction at a new location. Although alternative uses have been introduced to the Pier, according to Massachusetts Port Authority's (Massport) web site, "fishing and fish processing remain its primary function."

In revitalizing the Boston Fish Pier and dedicating the Exchange Center to the fishing industry, Massport is "preserving a vital local industry, ensuring the survival of a precious economic resource and protecting an important part of Massachusetts' maritime heritage."<sup>12</sup> Nevertheless, exemplifying the radical changes in Boston's involvement in the fishing industry, the site of the auction that for three-quarters of a century established the daily wholesale price for many species of fish for the whole New England region has been transformed to function as a conference center. True, the center is being managed by a seafood company, but its focus is not on harvesting and wholesale marketing, but rather on attracting meetings and functions that require feeding. Legal SeaFoods' Catering Division has taken over the management and operation of the Exchange Conference Center ("ECC") at the Boston Fish Pier.

The buildings on the pier also house HACCP-approved fish processing facilities on the first floors with adjoining office and storage space for those facilities on the second floors. A dozen fish brokers (wholesalers) line the fish pier. Those who market locally maintain small trucks to get in and out of local traffic and deliver to restaurants. Northern Avenue, that runs perpendicular to the fish pier, may be the area of Boston most densely populated with seafood restaurants. In fact, No Name is the oldest restaurant under the same management in the city (since 1917).

*The Fish Pier was not built to accommodate 18-wheeler trucks that are now a requisite in the industry. There is some discussion that Massport is going to build a new fish pier farther down Northern Avenue that will enable easier access for the trucks and will provide state-of-the-art facilities for the processors.*

In the late 1980's and early 1990's a decline in the availability of raw material led some of the brokers to turn to frozen-at-sea product and farmed product. Now brokers obtain product from Boston, New England, Alaska, Canada, and other international sources. Product for the most volatile markets tend to be on a consignment basis (brokers charge a 5 to 7% commission). Sales are split about evenly between local (Boston), New England and national markets. A small quantity may be sold to Canada (primarily for salting).

### *Employment (year-around and seasonal)*

Estimates of twelve druggers with 4 to 5 men crews (48 to 60 harvesters), 20 to 30 lobster boats with captain alone or one crew, suggests fewer than 100 fishermen are employed in Boston. Cutting, handling, marketing employ at least 1000 others. Jobs for one well-established broker include sales, receiving, customer service, repacking, cutting (swordfish, tuna and halibut), shipping, inventories, accounting, and truck driving.

### *Sales/revenue*

The average income per fishermen in Boston was \$23,000 in 1997.<sup>13</sup> Fresh fish production and wholesale marketing employed about 1,063 individuals earning about \$40 million in 1997.

<sup>12</sup> <http://www.massport.com/business/excha.html>

<sup>13</sup> Georgianna, Dan. 2000. *The Massachusetts Marine Economy*. Dartmouth, MA: University of Massachusetts.

*Species, Seasonality*

The mix of species has changed over the past ten years as a result of regulations. Formerly, cod and haddock were the principal species landed by the trawlers whereas now most land flounders.

Landed species include cod, flounders. Pollock, haddock, monkfish, lobster, clams, scallops, Ocean catfish, and mussels.

*Form of ownership (e.g., owner/operator; corporation)*

Owner-operators predominate.

Recreational fishing and employment

There are no conflicts between recreational fishermen and lobster fishermen. The lobster fishermen commented that the stripped bass were "eating up lobsters like crazy. The recreational guys would say that they see a lot of lobsters when they cut open bass." There are so many bass now that they start feeding frenzies. "There used to be a lot of bluefish, but they got scared away."

Recreational marinas are in Winthrop, South Boston, Quincy and Charlestown. Sailing seems to be more prominent than recreational fishing.

Cultural role of fishing*Museums*

One retired fisherman commented that he used to bring in interesting species of fish into the New England Aquarium, but that now, "you kind of feel like you're the enemy."

*Ethnicity in the fisheries*

Boston Harbor Lobstermen are a primarily a mixture of English, Irish, Scottish, though there are a few Italians and one Greek captain.

Dragger fishermen are primarily Polish or Italian-American. Many are immigrants, newcomers who did not grow up in the industry. Language barriers preclude extensive socializing.

In the processing industry, many of the fish cutters are Hispanic. Workers for the dealers and packers are a "good mix including Vietnamese, Cape Verdean, and/or Hispanic."

*Religion*

Roman Catholics dominate the harvesting sector.

*Kinship & family*

Several of the processing/wholesale dealers started as fishermen, went on to develop their processing or brokering businesses and have raised their children in the business.

Fishing related organizations and their roles in the community and fishery*Commercial fishing associations*

Boston Harbor Lobster Cooperative

*Processing Associations*

National Fisheries Institute

Fishing-related programs and services

*NGO's*

**Conservation Law Foundation's** main office is in Boston. CLF filed suit against NMFS and the Council to compel stricter management regulations in an effort to avert a total collapse of groundfish fish stocks. In the past, CLF worked closely with fishermen's organizations to assure passage of the 200-mile limit (EEZ) and to fight oil and gas exploration on Georges Bank.

**New England Fishery Development Association promotes and** provides information about New England's seafood industry.

*Training institutes*

A number of the Boston Harbor lobstermen went to the family assistance center in Hyannis for training and help seeking alternative employment.

The success rate of moving finfishermen out of harvesting has varied. On fisherman, previously retired but now fishing again, complained that the program did nothing for him: "They wanted to make me into a carpenter, and I was 59 years old. I'm no good at carpentry and too old to learn. So I came back into fishing - I have nothing else to do."

*Coast Guard*

District headquarters of U.S. Coast Guard First District is in Boston. The cutter station in Boston is characterized as "small."<sup>14</sup> There is also a Light Station in Boston.

**Perceptions of the Fishing Community<sup>15</sup>**

**Importance of fishing to the community**

Harvesting has only a minor role in Boston, but fishing-related business is important. Brokering, processing, and transportation services are significant components of the mix that is Boston's economy. Perhaps more importantly, though, these same services make Boston an essential provider to smaller ports. "There will always be a fishing industry in Boston because of the airport." In addition, "nostalgia" for the quaint assures some support by the city for their oldest industry.

**Boundaries**

Harvesters have little access to metalsmiths, marine electronics, nets or ship's carpenters in Boston, they must go out of town. Few of the dragger fishermen live in Boston, some live as far away as Maine, New Hampshire or Rhode Island, though some live in Everett or Stoneham and a number of the lobstermen live in Quincy.

	<b>Lobster Fishermen</b>	<b>Trawlers</b>
Sell fish	Boston Fish Pier	Boston Fish Pier
Offload fish	Cardinal Mederios Wharf	Boston Fish Pier
Buy fishing gear	Used to be Boston, now Hingham	New Bedford
Buy ice	N/A	Boston
Buy fuel and oil	Fish Pier or from a truck at wharf	Boston, used to have oil boats
Haul out for repairs	Quincy	New Bedford or Gloucester
Bookkeeping	Self	Self
Bank	Quincy (or where live)	Boston
Shopping	Where live	Where live/Internet for supplies

<sup>14</sup> <http://www.uscg.mil/d1/newengland/d1units.html>

<sup>15</sup> Based on key informant interviews

Church	Where live	Where live
School	Where live	Where live
Health care	Wife's job or Fishermen's Partnership	Where live
Childcare	Where live	Where live
Visit relatives	Quincy (or where live)	Where live
Recreation	Used to go to Caribbean, So. America, Hawaii, haven't been in 5 years	
Socialize	Relatives' and friends' homes	No fishermen's club, no camaraderie any more, except on own boat.

### **Communication Issues**

Dragger fishermen categorized communication with local, state and federal officials as "poor." "Fishermen talk, but nobody listens, the government does not pay attention." For example, "for 61 years I never had a problem with a whale, never even heard a whale story about someone else."

### **Assessments**

Dragger fishermen strongly disagree about assessments. It is true that "when the foreign vessels came in, the balance was upset ... How can they say that trawlers are destroying the bottom? I never brought up a plant in the net? For 100 years Stellwagen has been fished day after day, there are still more fish there than anywhere else. The whales too are still there, following the fish. It is true that the whiting have left, but that's normal. They will eventually return."

### **Local management practices**

No local practices have been developed.

### **Economic Change**

Ten years ago, "money was flowing," in the lobstering fishery. The economic condition of the industry was "excellent." There was an abundance of lobsters; Boston was noted as #1. There was a longer season then; perhaps the water was warmer in the inlets and marshes. Since then the fisheries economy has gone "up and down." Today, it is just "down." Specifically, five years ago it was characterized as "fair or average," having started to go down in 1990. Today (1998) it is very poor. "Last year we said, 'it couldn't get any worse.'" Five years from now, it is "tough to say ... At some point it will turn around. The 1970's were a low point, but it turned around. The old-timers think in terms of 7-year cycles, but I don't really think so."

In the early 1990's a storm wiped out the gear of a lot of the lobstermen who then took disaster relief loans. Payback remains hard for some.

Some guys go fishing part-time now. Some lobstermen became firemen; others have taken truck-driving training, "just in case."

For the trawlers, the economic condition of the industry was said to be "good" ten years ago with fish stocks up and many more fishermen in the industry. The down turn began with Amendments # 5 and #7 (to the Multispecies Fishery Management Plan), particularly restrictions on days at sea. Those most vulnerable were the older boats and smaller boats incapable of steaming farther offshore. The regulations made things tough until the monktail market expanded. Now there are more flounders around. Today, fishermen still "making a good year's pay," but it bothers some to see the \$1 million investments (vessels) being tied to the wharf for 3 months at a time. "Idle is no good." Fishing and the economic condition seem to be improving, but some are concerned that permits will be sold to foreigners.

One fisherman suggested that the competition between fishermen and dealers worked against each of the sectors. Instead of dealers simply trying to get product for the lowest price, the two should have worked together to improve quality and brought up the prices for both.

### **Changes in fishing effort**

There is significantly less effort now. More men than in the past fish only part-time and almost all the lobster fishermen have diversified. A number of the lobstermen fish alone now when before they would have had at least a sternman.

The DAS regulations have severely limited the draggers' fishing time and effort. Fishermen now try to pick and chose when they go out to maximize price and safety.

### **Effects of recent management**

"The financial struggle is ridiculous. You're treading water and someone's handing you bricks to see how long you can stay up." However, the competition has eased some. "There was so much (lobster) gear out in the 1980's that it was bad ...There were 'lobster wars' over territory and guys cutting you up" if you veered too far north or south rather than going "straight out of your port."

The Boston Auction exists "somewhat." It used to handle a million pounds a day, once it even handled 6 million pounds. Today, the average is 50,000 pounds daily. Because the regulations require taking the nets apart when crossing the closed areas, a number of boats that used to land in Boston no longer do so. Instead, trucks are sent to outlying ports to pick up their catch or the vessels land in Gloucester or New Bedford.

Today's 100-pound daily catch limit on codfish has had devastating effects on the inshore fishery fleet of Boston. Fishermen complain of throwing overboard as much as 4,500 pounds of cod after one haul. This is seen as a terrible waste, and fishermen argue that the sheer volume of cod being caught is justification to raise the limit to a level that would allow them to make a living. This would be 400-550 lb. a day for a small to medium size vessel.

Regulations affect brokers and processors, as well as their clients (the general public, seafood restaurant operators). Policies that limit access to product also limit the flexibility of brokers and producers. This in turn affects the number of employees, the kinds of trucks used, and their ability to respond to external markets. Well-established firms seek readily available product, sometimes turning to farmed and frozen-at-sea product to fill their orders. In some cases, their orders increasingly come from chains, supermarkets and larger corporations.

### **Characteristics of local fishermen**

Most of the lobstermen have a high school degree.

A good fisherman "has to be a hard worker, can't be an angry person, has to learn to live with other people when they're cold, wet, hot, long, short..." Many of the immigrant fishermen were illiterate, but extremely inventive and knowledgeable about their vessels, their gear and their prey. A Boston fisherman, for example, invented the tire "cookies" used on roller gear. The fishermen had their own "clique" or group that would share information about where to catch targeted species and how to rig their nets.

#### *Safety*

The electronics and survival gear make fishing safer, but the regulations or economic conditions that force fishermen to go out alone make lobstering more dangerous than in the past.

Both electronics and the stern trawler design (rather than side-trawler) have made fishing

safer for draggers. Boats are improved and crewmembers don't handle the gear by hand nearly as much. With hydraulic wenchers and wire guides, everything "comes to you ... all done by one switch controlled by the captain. The crew can stand in the wheel house out of harm's way." Only unhooking the doors is manual.

*Job satisfaction*

Draggerman: "Fishermen have never been satisfied. They're always looking for a better or different kind of life. Most were prepared to do anything else. I was family-oriented and thought I could help out on my father's boats. I didn't think I could find another job were I could make more money." A couple of the fishing families evolved into marketers of fish.

**Fishing families**

Fishing remains a family enterprise among many of the lobstermen of Boston Harbor. Boats tend to be owned by several brothers or cousins, though sternmen are often unrelated. Some of the wives stay directly involved through such tasks as stuffing the bait bags.

"Italian fishermen (trawlers) don't encourage their children to go fishing. Their kids are into everything else." (Examples offered: doctor, university administrator, environmentalist, etc.)

Traditionally, the draggers were family boats with family crewmembers (father, uncles, brothers, and cousins).



### **One Boston Fish Broker's Story**

"Tony" began fishing with his father out of Boston when he was only five years old. Since he had to go to school, he could only fish on weekends and holidays. His fascination with the industry continued through high school with his cousins, uncles, and father involved in fishing. His father decided that it would be a good idea to have "Somebody on the other side of the business." So Tony went into the business of being a fish broker. When he started working fourteen years ago at age eighteen, week days were the workdays, and you could be home on the weekends and holidays. But as the competition for fish increased, so did costs. Regulations and the buyout program decimated the Boston fleet, so producer customers were sought all up and down the coast. As time passed, holidays and weekends have disappeared in the competition for produce. Tony's days start at five A.M., as he must be up to compete with the local fish auction, which is prepared to buy anything and everything. Tony keeps the loyalty of his producers and matches the fish auction strategy by buying up everything they catch, even if at times he knows he cannot make much of a profit with the species or quality of the fish landed. Tony regularly buys from producers with boats ranging from forty to ninety feet in length. He also employs twelve full-time workers, some of whom are first-generation immigrants from Guatemala and Mexico. With some stocks down and quotas in place for others, Tony is forced to buy smaller amounts from each individual producer than in the past, so his trucks must cover a lot of ground to make up the difference. From the time he started until today, Tony has earned about the same, but now he works a lot harder—12 to 14 hours a day at times, seven days a week. He does this to respond to the logistics of widely dispersed producers catching a smaller volume who are forced to adjust to seasonal closures, DAS restrictions, and other regulatory complications. What, he says, hurts fishermen the most is the emotional impact of throwing overboard many thousands of pounds of codfish that cannot be landed. Tony markets lobsters regionally, and sells finfish nationally and monkfish livers and whole monkfish to Japan and Korea.

### **Commercial Lobster Company (Fish Pier, South Boston)**

The Zanti family have owned and operated Commercial Lobster for three generations. In the late 1940s, after bringing his sons into the fishing trade, Giuseppe opened the waterfront business so that the family could bring their catch directly to market themselves. By the 1950s, the family boats could not keep up with the demand. The Zanti's began to purchase lobsters from other fishermen, and sons Joe and Frank gave up fishing to manage the wholesale business full-time. Commercial Lobster prospered until 1980, when waterfront development forced the firm to relocate to the Marine Industrial Park on Northern Avenue. Having lost its highly profitable retail base, the firm struggled. It took a dozen years and the renewed energy of the third generation of Zanti's to turn the business around. They expanded the product base to a range of shellfish and shellfish meats, and aggressively expanded their wholesale market area. Today, Commercial Lobster has become a major player in the New England fish industry. The family plans "for a long and prosperous future to pass on to a fourth generation."

Boston Area Sub-region  
Counties: Plymouth, Massachusetts

### 5.5.1.2. Plymouth County

#### *Background*

Created in 1685, Plymouth County extends from Boston Harbor south to the Cape Cod Canal and west to the outskirts of New Bedford. The region has many small towns that have rich histories, clean beaches, charming harbors, exquisite marshlands and beautiful lakes and rivers. Many visitors use Plymouth County as a touring "headquarters" for a series of day trips to popular sites in the area, Boston and Cape Cod.

The Pilgrims landed in Plymouth in 1620, establishing the first permanent settlement in New England. Because of its role in American history, Plymouth County is a popular destination for international visitors. Plimoth Plantation is a fascinating re-creation of the Pilgrims' 1627 settlement; related historic attractions include Mayflower II, docked in Plymouth Harbor and the Wampanoag Indian Homesite.

Other Plymouth sites of interest include the nation's oldest public museum, a wax museum, two wineries, six historic houses and a reconstructed 1636-grist mill. Historic sites in other towns include the Hull Lifesaving Museum and Scituate Lighthouse. Contemporary art facilities include the Fuller Museum of Art in Brockton, The Art Complex Museum in Duxbury and the South Shore Art Center in Cohasset. Many visitors stop by the Cranberry World Visitors' Center to learn about the region's strong cranberry heritage.

Whale watch cruises are available spring, summer and fall. Plymouth County has a wealth of natural resources including seven state parks, five major salt-water beaches and thousands of acres of scenic parks and marshlands. Deep-sea fishing excursions are available from a number of harbors.

The County seat is Plymouth. Other cities, towns and communities include: Abington, Bridgewater, Brockton, Carver, Duxbury, East Bridgewater, Halifax, Hanover, Hanson, Hingham, Hull, Kingston, Lakeville, Marion, Marshfield, Mattapoisett, Middleborough, Norwell, Onset, Pembroke, Plymouth, Plympton, Rochester, Rockland, Scituate, Wareham, West Bridgewater, Whitman.

Hingham is under significant pressure from development, but gentrification takes the form of a large marina that dominates the dock space. Lobster is the primary fishing activity, and there are only a few remnants of fishing infrastructure. To access the commercial dock, which is lined with storage cubbies filled with lobster gear, fishermen must pass directly through a large recreational boat storage facility packed with expensive recreational sail and power craft. At the water's edge, the dock is festooned with lobster fishing paraphernalia and individual storage facilities (lobster "pounds"), sitting adjacent to a narrow dock with berths filled with lobster boats.

There is a marine railway, used mostly to berth recreational vessels, and the local fishing supply store specializes in lobster fishing. Diesel fuel is available dockside, and multiple trucking operations ship lobsters nationwide. A commercial marine supply house and a boat welder support the local fishing association dominated by lobster fishermen.

The local president of the Boston Harbor Lobstermen's Association claims that dependence on lobster fishing has put many people out of business. In the last two years, he estimates that between Hull and Boston, Massachusetts, 60 lobster boats and their crew have left the industry or the area because of low catches and soaring expenses. Nearby Hewitt's Cove

costs \$8000 to dock per year, plus costs for the rental slip, onshore storage (freezers and trap stacks), plus the cost of electricity.

There are no air fill stations in Hingham, but Weymouth has a station. Other fishing networked towns include Chelsea and Abington, which maintain bait houses for the lobster industry. Several women from Abington used to run a bait shop locally, but were forced to sell out due to the rising value of local waterfront/dock space. The local marina caters to the recreational sector, and the local bar is located in the Marina Bay Club. There is one boat builder in Abington. There is a boat dealer in Quincy, but most fishermen go to Maine to buy new or used lobstering craft.

Although the Hingham waterfront is dominated by the marina and recreational boat yards, there are no boat excursions or whale watching tours. There is a harbormaster in Hingham.

The declining cultural fishing capital and infrastructure in several of the coastal communities in the Boston sub-region is typical of the region. This process forces fishing families to rely on cross-community capital networks to compensate for the loss of local fishing infrastructure. It has become clear that the fishing dependency concept as described by Magnuson-Stevens must be adjusted. Cross-community total capital flows and networks are critical to the sustainability of commercial fishing activity. These communities also reveal how thin the existing infrastructure is, and how vulnerable are the fishing families that rely on this infrastructure. The closure of an icehouse or loss of bait houses in a community can have dramatic effects on the sustainability of commercial fishing if there are no nearby replacements for such fishing capital.

### *Demography*<sup>16</sup>

#### Population

The county's population according to the 1990 U.S. Census was 435,276 with 212,733 male and 222,543 female.

#### Age Structure

Children (to 21 years) numbered 133,684; adults (21-64) numbered 251,314; and seniors (65 and older) numbered 50,278 in 1989.

#### Education

For those 25 years and over, 44,897 had no high school diploma; 94,553 had a high school diploma; 75,893 had some college; and 61,614 had a Bachelor's degree or higher.

#### Housing

There were 168,555 housing units of which 149,519 were occupied and 19,036 were vacant. Of the occupied housing, 109,133 units were owner-occupied and 40,386 were rented. The median year housing structures were built was 1961. The median value of owner-occupied housing was \$156,000.

#### Racial and Ethnic Composition

The majority of people were white (407,191), many with Irish, English, Italian, German and French ancestry noted. In addition, there were 16,048 Blacks; 898 American Indian and 8 Aleut; 3,282 Asian and 7,849 "other race."

### *Economic Context*

#### Income

The median household income reported by the 1990 Census was \$40,905, and the per capita income was \$16,523.

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<sup>16</sup> <http://venus.census.gov/cdrom/lookup/>

Employment

## INDUSTRY

Universe: Employed persons 16 years and over	
<b>Agriculture, forestry, and fisheries (000-039).</b>	<b>3069</b>
Mining (040-059)....	347
Construction (060-099)	14667
Manufacturing, nondurable goods (100-229).	12190
Manufacturing, durable goods (230-399).	18032
Transportation (400-439)..	9525
Communications and other public utilities (440-499).	7002
Wholesale trade (500-579)....	10537
Retail trade (580-699).	43194
Finance, insurance, and real estate (700-720).	18599
Business and repair services (721-760).	9076
Personal services (761-799).	4963
Entertainment and recreation services (800-811).	2509
Professional and related services (812-899):	
Health services (812-840).	21554
Educational services (842-860).	16176
Other professional and related services (841, 861-899).	14035
Public administration (900-939).	9789

## OCCUPATION

Universe: Employed persons 16 years and over	
Managerial and professional specialty occupations (000-202):	
Executive, administrative, and managerial occupations (000-042).	29112
Professional specialty occupations (043-202).	30349
Technical, sales, and administrative support occupations (203-402):	
Technicians and related support occupations (203-242).	8279
Sales occupations (243-302).	28422
Administrative support occupations, including clerical (303-402).	37217
Service occupations (403-472):	
Private household occupations (403-412).	465
Protective service occupations (413-432).	4958
Service occupations, except protective and household (433-472).	22915
<b>Farming, forestry, and fishing occupations (473-502)</b>	<b>2606</b>
Precision production, craft, and repair occupations (503-702).	25206
Operators, fabricators, and laborers (703-902):	
Machine operators, assemblers, and inspectors (703-802).	10250
Transportation and material moving occupations (803-863).	7878
Handlers, equipment cleaners, helpers, and laborers (864-902)	7607

## CLASS OF WORKER

Universe: Employed persons 16 years and over	
Private for profit wage and salary workers	156305
Private not-for-profit wage and salary workers.	14521
Local government workers.	17661
State government workers	7336
Federal government workers.	5203
Self-employed workers	13578
Unpaid family workers	660

Boston Area Sub-region  
Plymouth County

### 5.5.2.1. Plymouth

#### *Background*

Long before the Pilgrims landed in New England and settled in Plymouth, the area was home to the Wampanoag, called "people of the dawn" because they lived in the east.<sup>17</sup> The Wampanoag farmed, fished, hunted and gathered. In the spring, whole villages moved to the seashore to fish and plant crops—corn, squash and beans. Since their homes were often made of woven mats stretched over wood frames, they would carry the mats with them leaving the wooden structures behind for their return. In the fall and winter they moved inland to the forests of oak, maple and pine where they hunted deer, wolf, bear, beaver, moose, wild turkey, raccoon, otter, and wildcat. From the streams, rivers, lakes and ocean they took fresh and saltwater fish; in winter they ice fished.

Pilgrims arrived on the *Mayflower* in 1620 and Plymouth was incorporated as a town the same year. William Bradford, who helped establish Plymouth Colony, was its governor for more than 30 years.<sup>18</sup> His *History of Plymouth Plantation, 1620-1647*, first printed in full in 1856, is a minor classic, reflecting the unusual qualities of the man and the values of the small group of English separatists who became known as Pilgrims. Bradford was born in March 1590 in Austerfield, Yorkshire, the son of a yeoman farmer. He was self-taught. As a young man, he joined Puritan groups that met illegally in nearby Scrooby and was a member of that congregation when it separated from the Church of England in 1606. Bradford was among the 125 Scrooby separatists who sought (1608) religious sanctuary in Holland. When the congregation decided (1617) to seek refuge in America, Bradford took major responsibility for arranging the details of the emigration.

The term Pilgrim is derived from his description of himself and his co-religionists as they left Holland (July 22, 1620) for Southampton, where they joined another group of English separatists on the *Mayflower*. When John Carver, Plymouth Colony's first governor, died suddenly in April 1621, Bradford was unanimously elected to replace him. He was re-elected 30 times. In 1640, Bradford and the group of original settlers known as the "old comers" turned over to the colony the proprietary rights to its lands, which had been granted (1630) to him by the Warwick Patent and then shared by him with the old comers. During the period of his governorship, and especially during the first few years, Bradford provided the strong, steady leadership that kept the tiny community alive. He strove to sustain the religious ideals of the founders and to keep the colony's settlements compact and separate from the larger neighboring colonies. Bradford died on May 9 or 19, 1657.

Plymouth is a coastal community in southeastern Massachusetts, approximately 5 miles north of the Cape Cod Canal.<sup>19</sup> It is the seat of Plymouth County, and has the largest area of any town in the Commonwealth. For most of its existence, Plymouth was an isolated seacoast area where economic fortunes were linked to the sea and shipping. The site of the original 1620 settlement is now a portion of today's Downtown/Harbor District.

Today, Plymouth's character is reflected in monuments and buildings celebrating a vibrant past preserved by a conservation ethic. The wide curving shore of Plymouth is fronted by a sea wall behind which is a tabloid of hotels, restaurants, novelty shops, and tourist businesses, situated in a well-preserved front of historic buildings. While Plymouth attracts thousands of tourists at the height of the summer season, the town maintains a diverse fishery sustained in part by the protection of docking space for the local fleet.

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<sup>17</sup> [http://pilgrims.net/native\\_americans/index.htm](http://pilgrims.net/native_americans/index.htm)

<sup>18</sup> <http://pilgrims.net/plymouth/history/#alden>

<sup>19</sup> <http://www.state.ma.us/dhcd/iprofile/239.htm#NARRATIVE>

The South Shore's accessibility to the Boston metropolitan area has greatly influenced the growth rates of its communities. Desirability in terms of land prices, tax rates and residential amenities further influenced community growth and Plymouth's population mushroomed from 18,606 in 1970 to 45,608 in 1990, an increase of 145% in just 20 years. Also of significance during the period was the development of a healthy industrial and commercial base. The Town of Plymouth is committed to controlling its residential growth while welcoming industrial and commercial expansion.

### *Fishing Dependency*

There are two piers at Plymouth. The Mayflower and an excursion boat use the state-owned pier in season, no commercial fishing vessels are allowed to dock there. The 1000-foot long town pier, where commercial vessels tie-up, was built in the late 1800s and is, so far, protected from development. The dock integrates the local fishing culture directly into the cultural flavor of the port. Dockside restaurants are positioned to give patrons a water view of the commercial fishing activities, and summertime tourists stroll the docks to take photos of the fishing fleet unloading their catch. One of the first questions visitors ask is, "what time do the boats come in?" The well-maintained dock space makes Plymouth an attractive berthing spot for local and regional fishermen. Local community support insures this space will be preserved for commercial use, even though it still amounts to only about 15% of the total dockage space, with the other 85% representing recreational marina berths.

Plymouth ranks 17<sup>th</sup> (18<sup>th</sup> overall out of 36 ports) for fishing infrastructure differentiation in the New England NRR. Fishing infrastructure is concentrated at the main commercial dock just south of the famous Plymouth Rock memorial. The commercial space is surrounded by boutiques, restaurants, and gift shops adorned with fishing, whaling, sea life, and related motifs. A restaurant is perched at an angle overlooking the commercial dock, which juts out into the water in a line of well-maintained berthing spaces. Locals look on fishing as integral part of the historic setting, but the weakness of the industry is reflected in the lack of interest or opportunity for local youth to enter the occupation and an overall decline in the place and space dedicated to the cultural capital of fishing.

### *Governance*

Board of Selectmen, Town Manager, Representative Town Meeting

### *Demography*<sup>20</sup>

#### Population

The town's population in 1989 was 45,608 with 22,393 male and 23,215 female.

#### Age Structure

According to the 1990 U.S. Census, 14,302 were children (under 21 years); 25,796 were adults (21-64 years) and 5,510 were seniors (over 65).

#### Education

Of persons over 25, 4,571 had no high school diploma; 9755 had graduated from high school; 8156 had some college; and 6461 had a Bachelor's or higher degree.

#### Housing

There were 19,658 housing units, of which 15,875 were occupied and 3,783 were vacant. Of the occupied housing units, 11,667 were occupied by their owners and 4,208 units were rented. The median year structures were built was 1971 and the median value of owner-occupied housing was \$146,200.

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<sup>20</sup> U.S. Census 1990

Racial and Ethnic Composition

According to the 1990 U.S. Census, 44,132 were white. There were also 760 Blacks, 90 American Indians, 262 Asian and 364 "other race." Irish, Italian and English ancestry was noted by almost 25% of the population, German, Portuguese and French were also noted frequently.

*Economic Context*Income

Median household income in 1989 was \$39,886 and the per capita income was \$15,882.

Employment

## INDUSTRY

Universe: Employed persons 16 years and over

<b>Agriculture, forestry, and fisheries (000-039).</b>	<b>364</b>
Mining (040-059)..	16
Construction (060-099)..	1781
Manufacturing, nondurable goods (100-229)..	1180
Manufacturing, durable goods (230-399).	1304
Transportation (400-439).	1002
Communications and other public utilities (440-499).	900
Wholesale trade (500-579).	911
Retail trade (580-699)...	4411
Finance, insurance, and real estate (700-720)..	1962
Business and repair services (721-760).	911
Personal services (761-799)...	648
Entertainment and recreation services (800-811)..	301
Professional and related services (812-899):	
Health services (812-840)..	2259
Educational services (842-860).	1490
Other professional and related services (841, 861-899)...	1388
Public administration (900-939)..	1093

## OCCUPATION

Universe: Employed persons 16 years and over

Managerial and professional specialty occupations (000-202):	
Executive, administrative, and managerial occupations (000-042)	2783
Professional specialty occupations (043-202)	3081
Technical, sales, and administrative support occupations (203-402):	
Technicians and related support occupations (203-242).	821
Sales occupations (243-302)..	3326
Administrative support occupations, including clerical (303-402).	3692
Service occupations (403-472):	
Private household occupations (403-412).	45
Protective service occupations (413-432)...	577
Service occupations, except protective and household (433-472).	2485
<b>Farming, forestry, and fishing occupations (473-502)..</b>	<b>327</b>
Precision production, craft, and repair occupations (503-702)..	2497
Operators, fabricators, and laborers (703-902):	
Machine operators, assemblers, and inspectors (703-802)..	771
Transportation and material moving occupations (803-863)..	877
Handlers, equipment cleaners, helpers, and laborers (864-902)	639

## CLASS OF WORKER

Universe: Employed persons 16 years and over	
Private for profit wage and salary workers...	15873
Private not-for-profit wage and salary workers.	1473
Local government workers..	1899
State government workers.	641
Federal government workers.	458
Self-employed workers...	1534
Unpaid family workers.	43

*Transportation and Access*

Plymouth is in southeastern Massachusetts, bordered by Bourne on the south, Wareham on the southwest, Carver on the west, Kingston on the north, and the Atlantic Ocean on the east. Plymouth lies in the heart of the Old Colony Region between Boston and Cape Cod. The major highways are the Southeast Expressway (State Route 3) and Interstate 495, which give access to the airport, port and intermodal facilities of the Greater Boston Region. U.S. Route 44 runs E-W between Plymouth and Providence, Rhode Island.

Commuter rail service exists between South Station, Boston and Kingston with limited passenger service from Plymouth. The Bay Colony Railroad provides freight rail service to North Plymouth. Plymouth is a member of the Greater Attleboro-Taunton Regional Authority (GATRA), which provides Dial-A-Ride service to the elderly and disabled. The Plymouth and Brockton Street Railway Company provides commuter bus service to Braintree and Boston, with limited service to Rockland, Kingston, Sagamore Circle, Barnstable, and Hyannis. The Plymouth Municipal Airport, a General Aviation (GA) facility has 2 asphalt runways and non-precision instrument approaches are available.

*Hospitals, libraries, museums*

- Jordan Hospital
- Plymouth Public Library
- Plymouth Antiquarian Society
- 1749 Court House Museum—Built in 1749, this is the oldest wooden courthouse in the country.
- Forefathers Monument—Monument to the pilgrims made out of solid granite. It's the largest of its kind in the United States.
- Harlow Old Fort House—This Pilgrim home was built in 1677.
- Hedge House—Built in 1809, this was the home of a merchant and shipowner. 19th century home furniture is on display.
- Jabez Howland House—This colonial was built in 1667 and features historic furnishings and household items.
- Jenney Grist Mill—A replica of the mill used by the Pilgrims. The original was built in 1636.
- Mayflower II—A reproduction of the original Mayflower, the ship in which the Pilgrims journeyed to America. Visitors will get a sample of what life was like during their voyage in 1620.
- Mayflower Society Museum—This house, built in 1754, features exhibits of 18th century furniture and household items, as well as a formal garden.
- Pilgrim Hall Museum—This museum is set in a Greek Revival building, and features artwork and historic furniture.
- Plimoth Plantation—Journey back in time, as actors recreate life in 1627 Plymouth. The outdoor museum is a replica of the original settlement.
- Plymouth Rock—The real thing. Plymouth Rock commemorates the site where the Pilgrims first came ashore in 1620.
- Richard Sparrow House—Exhibits focus on crafts and 17th century pottery. Built in 1640, this is the oldest house in Plymouth.
- Spooner House—Built in 1749, the Spooner family occupied this house for over 2 centuries.



## *Fisheries Profile*

### Commercial fishing and fisheries-related employment

#### *Harvesting structure*

Fishery dependence centers on the lobster fleet with its 50 operating vessels. There are also four stern draggers and four gillnetters concentrating on dogfish, but this effort represents a significant decline from about 30 boats that were dogfishing less than five years ago. Lobster boats range from 19 to 42 feet in length, and draggers 45 to 55 feet in length.

#### *Support Services*

Fishing infrastructure is adequate to maintain the local fleet, and includes air fill stations and back yard bait houses. A couple of trucks also make bait available, one coming in daily from Boston or Sandwich. The docking facilities include draggers at the town dock and lobster boats on moorings. Originally the town dock was reserved for boats over 40 feet in length, now there are a few offshore lobster boats that over-winter. The majority of the lobster fleet heads up to nearby Brant Rock in winter because the harbor does not freeze.

There are five boat yards dedicated to the recreational fleet, but there are no commercial boat builders in town. One key respondent indicated that his father, grandfather and great grandfather used to build boats locally. Boat repair is carried out by a local welding service with two professional boat welders. There are two marine railways/haul-out facilities but no local commercial boat dealers. Local lobster fishermen can search for boats in the Massachusetts Lobstermen's Association journal or through other trade papers for used craft. One fishermen's association represents the industry in town meetings, and fishing supplies are available through two dealers. Two diesel fuel stations plus a diesel truck keep the fleet fueled.

Evidence of fishing heritage shows in two local fishing monuments, but there are no fish processors, fish auctions, fish brokers, or icehouses. Nearby Hull has a bookkeeper specializing in the fishing industry.

The local catch can be sold to three fish and lobster retailers. However, few sell directly to them unless they bring in a catch that is too small to bother shipping out, or it includes at least 40 lbs. of scallops for the local restaurant trade. Local draggers used to sell the whole lot but now that the amount they catch is relatively small, they truck it themselves in order to make an extra \$.25/lb profit. There are two trucking operations from Boston that will also pick up product. Two wholesale companies purchase seafood from Plymouth's fleet. Reliable Fish Company buys both fish and lobster, The Lobster Pound buys lobster only. Both also supply bait to the fishermen who regularly sell to them.

Five fish and tackle dealers support recreational fishing, with the target species being striped bass. Two hotels /inns front the water, and a total of approximately 450 recreational craft fill the local marina. Twelve seafood restaurants also grace the town, and visitors can take advantage of the ten local boating tours and six whale watching tour operations.

Although, it closed for reasons unassociated with fishing, fishermen miss the 1620 Restaurant where fishermen used to gather. There are no places now near the pier where you "can walk in with your boots on," no longer is there a place that provides a "working man's setting." The prices of drinks are higher, "that's Dukakis' fault, he outlawed 'happy hours'!" In addition, because of the fishing ground closures, boats from outside Plymouth rarely come in anymore. It used to be that the inshore fishing grounds would open on November 1<sup>st</sup> and the Cape Cod Bay fleet would assemble. An unfortunate side effect is that fishermen have little opportunity to meet and relax with fishermen from other communities or fishermen who use other gear, etc. in a social setting. Conflicts that may have been worked out in the past over a beer cannot be easily resolved. There are in general, fewer opportunities for social interaction among the fishermen and their families.

*Employment (year-around and seasonal)*

Key respondents estimated that there are 200 households directly dependent on the fishery and another 50 to 100 indirectly dependent, with 75% of fishermen living in the immediate town area.

Besides fishing, tourism employs many local residents, as does a nearby industrial park.

*Species, Seasonality*

Lobster makes up the primary catch in Plymouth today, with finfish species remaining important, though many fewer boats purse finfish than did so in the past. Local species fished include cod, flounders, dabs, winter flounder, yellowtail, gray sole, tuna, striped bass, dogfish, skate, monkfish, bluefish, scallops, and seaweeds (rockweed and Irish moss). The market for lobster has remained steady and the market for crab has improved.

Key respondents noted that the mix of species caught in lobster traps has changed over the years. These days one is more apt to see "southern" species such as scup and butterfish, and there seem to be more monkfish. "Maybe it's the temperature (global warming) or maybe it's the lack of cod."

The annual round is to fish virtually all year, weather and DAS permitting, perhaps taking one month off. It used to be that most fishermen would do some cod fishing, gillnetting, even jigging, when not lobstering, but restrictions have meant that most fishermen rely solely on lobsters now.

One fisherman harvested mussels, but that has not been commercially done since 1994. There is no commercial shellfishing in Plymouth. The fishermen commented that it is a lot easier to enforce closed areas than to monitor compliance with regulations in open areas. Evidently, there has not been a request to the state to test the shellfish areas, so they remain closed.

Recreational fishing and employment

Recreational fishing and boat excursions (ten local boating tours and six whale watching tour operations) are popular tourist attractions. The boat ramp has a constant stream of recreational boats using it in the summer.

Cultural role of fishing*Kinship & family*

The majority of fishermen in Plymouth were born to fishing families, or at least families involved in some aspect of the industry. Fewer children seem to be going into the business now, however. Parents are encouraging their children to finish high school, pursue some higher education, than decide.

*"Fishing is not as fun as it used to be – is changed a lot. My father, grandfather and great grandfather used to build boats out of here, but no one does that anymore. Where there used to be lots of local bars and places where people went after fishing there is only one left now, and I don't see any local generation coming up from behind to keep it going."*

One respondent did point out that further education would also help with collaborative research. Fishermen would find it easier to understand the scientists and the research results if they had more formal education.

*Sharing*

There are small groups of friends who will regularly share information, perhaps 8 or 9 groups in Plymouth. If there are hazards, however, such as a submerged log, "we'll throw it on the radio. We do look out for each other, even those we don't particularly like or get along with."

This sense of community sharing and helping may be diminishing with the younger generation. One respondent pointed out that it could be that with the safer gear, etc., “they haven’t gotten themselves into a hard fix yet.” Another said that he can’t see any younger guys bringing him fish once he’s retired, as he has done for some of the old fishermen. It’s not that there is such a lack of fish, it seems to have more to do with a change in society, and “you don’t give anything away.”

### Perceptions of the Fishing Community<sup>21</sup>

#### Importance of fishing to the community

The local harbor master responded that fishing was “very important” to Plymouth, but several key fishermen respondents said it is “not important”, claiming that it was more significant in Provincetown “*where it’s a pride thing and people come out for a blessing of the fleet.*”<sup>22</sup> Other fishermen respondents pointed out that fishing is “very important” to Plymouth because of its role in attracting tourists. One said, “the bycatch of commercial fishing is tourism!”

#### Boundaries

Capital contacts can be divided up into those encompassing social capital (e.g., visit friends, go for recreation, go for vacation, visit relatives, socialize, go to church); economic (e.g., sell fish, offload fish, buy fishing gear, haul out for boat repairs, go to the bank, go shopping), and human (e.g., go to school, go for childcare, go for health care, go for retraining).

Sell Fish	Plymouth-2 buyers at the Town dock
Offload Fish	Town dock
Buy Fishing Gear	Plymouth, Maine, Rhode Island, Cape Cod
Buy Ice	Trucked into Plymouth
Buy Fuel/ Oil	Plymouth
Haul out Boat Repairs	Plymouth
Bookkeeping	Plymouth
Banking	Plymouth (95%)
Shopping	Plymouth
Go to Church	Plymouth
Got to School	Plymouth
Go for Health Care	Plymouth
Go for Childcare	Plymouth
Visit Relatives	Close by
Go for Vacation	Atlantic City, Florida, hunting/skiing
Go for Recreation	Local bar
Socialize	Local bar

#### Communication Issues

Communication with local and state officials is noted to be “*Very good; they are accessible. They do not do a lot but they are here.*” Communication with federal officials is rated as “good” or “very good,” but infrequent, since most local fishing areas are in state waters:

<sup>21</sup> Based on key informant interviews

<sup>22</sup> Perhaps this a case of the “grass being greener on the other side.” The Provincetown fleet is in poor physical shape, and the fishing community there claims they get little support from the town to maintain the industry.

*"I don't know if I ever saw a fed here. I called the Feds the other day to ask if I needed to renew my permit. "No you don't have to do it. Why? Is it good through today? It might be good through tomorrow." At least they have a sense of humor."*

One respondent commented that any lack of communication with local and state managers or representatives have to be blamed on the fishermen. *"Most guys, especially the younger ones, won't go to meetings."*

### **Assessments**

Key respondents indicate that fishermen and scientists "strongly disagree" with fisheries data:

*"In the last 5 years, we have seen more egggers than we have in a long time. Scientists play with numbers too much; it's one or two. You can make numbers look like anything you want. There is a scientist, "Bob", who actually comes down and get his hands dirty, maybe I like him because he says what I want to hear. The others just crunch numbers. They look at catch reports. I got into a disagreement with Andy Rosenberg of NMFS. Draggers catch lobster but NMFS says that it is only .01%. It is the difference between being reported and not being reported (suggesting draggers used to not report any lobsters caught). I think lobstermen are pretty honest. The new program (the special pots where lobsters are tallied once per month) makes sense. I told the state for years that I would take them out lobstering."*

Grant money for cooperative research is one key to improving the assessments. Now the scientists have to talk to fishermen if they want to obtain research funds, one respondent noted.

### **Local management practices**

The enduring presence of lobstering in Plymouth has resulted in some local folk traditions aimed at conserving stocks and reducing fishing conflict. For example, both fishermen and lobstermen use the middle of the bay off Plymouth during whiting season, and they have a gentleman's agreement to not fish in each other's area during peak harvest season. But this agreement was derailed when the state went to a licensing system and was then slow in getting whiting permits out. When permits were finally issued, they overlapped with the peak lobster season and the informal folk management system broke down. Before this interference, lobster fishermen reported:

*"We accommodated each other, the whiting boats just sat inshore and waited for the permits instead of going out (and making things hectic for us)."*

### **Economic Change**

Ten years ago, stocks were up but prices down, and one respondent noted, *"There is more money now than ten years ago because prices are higher. There is a smaller season (May to November) but people are still making a living. It was kind of a different fishery 20 years ago, nobody really lobstered all year round, they switched fisheries."*

Five years ago, the condition of stocks was in-between ten years ago and now, but today the stocks and economic conditions related to their harvest are consider "good," "as long as we can keep fishing."

*"Canada shuts down its fishery and pays for the people to stay home. If I was offered a buyout, I would take it, a temporary buyout (say for five years). Yeah, if they pay me \$35-50,000 and move me to a non- fishing occupation, I won't street clean though. I don't want a free handout. At 40 years old, what can I do besides fish?"*

*"The other day, the Feds sent me a 165 manual on the new lobster management plan. I have not read 165 pages in many years. I read the book, read it in 20 minutes. I read what I*

*found interesting. (About the language): If you dazzle the brains, dazzle it with bullshit (i.e., the language was too technical)."*

Today life is considered by key respondents to be better than five years ago because of the higher prices they get for their product. Life is "worse" than five years ago because there is less satisfaction in the act of fishing due to the multiplicity of rules and "government indecision."

Five years from now, respondents suggested that fishing would still be "good." People are more conscientious now than in the past. They are more aware of conservation practices; little things like not throwing plastic overboard are adhered to.

### **Effects of recent management**

Recent fishery regulations having the most impact are groundfish closures, which has forced some fishermen into the lobster fishery.

The impact of regulations are wearing on those in the local fishery and the reaction is expressed by this key respondent:

*"I enjoy fishing but capriciousness of regulations are making some tired of lobstering. I don't mind the fishing part, I don't mind not catching anything, I don't mind the price, and I don't mind losing gear. It is just that you don't know what is right or wrong anymore. You don't know what tomorrow will bring. Do I go out and buy hooks for dogfish? They might close the fishery next year. Lobster is the same way. They are going to close lobster down, I don't care what anybody says. Those that say it won't happen to us; draggers are at 88 days. Nobody would have believed that. Scallops at 34. They say it won't happen, bullshit. [Others say] It cannot happen to me. Good, we will get rid of that fishery, well guess what? When they get done with them, we are next."*

There is some concern about the marine mammal protection regulations for lobstering. Sinking ground lines have to be used and a 500 pound breakaway buoy. There are several means to comply, (6 or 7 devices have been approved), but each requires retrofitting, some added expense and some anxiety about the potential impacts on the management of gear (i.e., if it increases the risk of recreational boats cutting off buoys and thus trawls being lost).

### **Characteristics of local fishermen**

Love of the sea, natural ability, instinct, perseverance, the acceptance of the good with the bad and a sense of humor are some of the characteristics of "good" fishermen. Fishermen are very good at what they do; they know everything about adapting, hands-on learning, survival in rough weather.

*"When people get shut down, they are in trouble. Dragger crews don't have any social skills. They are not going to work in a factory. They have been with the same group of guys since they were fourteen. They know their job really well. They, if you tell them that they have to be punctual, forget it. If my sterny is a little late, I yell at him but he is not fired. It is not the end of the world; tomorrow I may be late. You gotta take this into consideration."*

#### *Job satisfaction*

Most are satisfied with their work, and most fishermen were born here. *"Satisfied, yeah, you don't get laid off; you don't have to put up with a boss. There are good sides too. Most of us are uneducated so there is not much else we can do. I threaten to leave but I would end up in Seattle and fish anyway."*

### **Fishing families**

Many more spouses are also working outside the home than five years ago to pay the bills, and some respondents believe that the quality of family life has therefore diminished. But,

most agree that most spouses work for “benefits,” and that this choice probably has more to do with today’s society than anything to do with fishing.

A consequence of the decline in the number of fishing families is the breakdown and reorganization of social capital. Ten years ago fishing families could socialize within a network comprised mostly of other fishing families. Now, they report, they are socializing much more with groups outside the industry.

Boston Area Sub-region  
Plymouth County

### 5.5.2.2. Scituate

#### *Background*

Incorporated as a town in 1636, Scituate is a small to mid-sized seacoast community located equidistant between Boston and Plymouth. In the 375 years since its incorporation, it has evolved from a summer colony to a residential community but has managed to retain some of the flavor of its past. Ocean-related recreational activities make it a very desirable place in which to live and to raise families.

Scituate's town pier accommodates a working fishing fleet and that, coupled with three business areas, represents commercial interests in the town. Scituate also has a strong sense of its history and commemorates its founding in August each year via the celebration of "Heritage Days". Historic points of interest include: Scituate Lighthouse, The Old Oaken Bucket Homestead and Well, The Lawson Tower, Stockbridge Mill and the Cudworth House as well as the Little Red School House which is the home of the Scituate Historical Society.

Residents pride themselves on the strength of their school system and on the achievements of the great percentage of students (85%) who go on to higher education from Scituate Public Schools. The Town of Scituate is a "delightful mix of rural, suburban and seaside lifestyles within a 25-mile ride to the City of Boston."<sup>23</sup>

#### *Governance*

Board of Selectmen, Town Administrator, Open Town Meeting

#### *Demography*

##### Population

According to the 1990 U.S. Census, Scituate (CDP) had a population of 5,180, with 2,428 males and 2752 females.

##### Age Structure

There were 1351 children or 26 percent of the population (under 21) in 1989, 2977 adults (21-64) or 57 percent and 852 seniors (65 or older) or 16 percent of the population.

##### Education

Of persons 25 or older, 253 had no high school diploma, 927 had graduated from high school, 1200 had some college and 1215 had a Bachelor's or higher degree.

##### Housing

There were 2088 housing units counted in 1989, 1923 were occupied and 165 vacant. Of those occupied, 1425 were owner-occupied and 498 were rented. The median value of owner occupied housing was \$200,200 and the median year housing structures were built was 1955.

##### Racial and Ethnic Composition

Less than three percent of the population was non-white in 1989. There were 5016 whites, 22 Blacks, 23 Asians and 119 "other" according to the Census. Ancestry cited was most often Irish, English, German and/or Italian. Most spoke English at home, those who didn't (in rank order) usually spoke Spanish, Portuguese or French.

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<sup>23</sup> <http://www.state.ma.us/dhcd/iprofile/264.htm>

*Economic Context*Income

The median household income in 1989 was \$50,250 and the per capita income was \$19,297.

Employment

## INDUSTRY

Universe: Employed persons 16 years and over

<b>Agriculture, forestry, and fisheries (000-039)</b>	<b>85</b>
Mining (040-059)..	4
Construction (060-099)	147
Manufacturing, nondurable goods (100-229).	95
Manufacturing, durable goods (230-399).	200
Transportation (400-439)..	43
Communications and other public utilities (440-499)..	81
Wholesale trade (500-579)....	102
Retail trade (580-699)....	331
Finance, insurance, and real estate (700-720)..	260
Business and repair services (721-760)...	97
Personal services (761-799)..	52
Entertainment and recreation services (800-811)..	23
Professional and related services (812-899):	
Health services (812-840)...	220
Educational services (842-860)...	252
Other professional and related services (841, 861-899).	384
Public administration (900-939)..	136

## OCCUPATION

Universe: Employed persons 16 years and over

Managerial and professional specialty occupations (000-202):	
Executive, administrative, and managerial occupations (000-042).	540
Professional specialty occupations (043-202)..	510
Technical, sales, and administrative support occupations (203-402):	
Technicians and related support occupations (203-242)..	92
Sales occupations (243-302)...	380
Administrative support occupations, including clerical (303-402).	367
Service occupations (403-472):	
Private household occupations (403-412)..	21
Protective service occupations (413-432).	80
Service occupations, except protective and household (433-472).	152
<b>Farming, forestry, and fishing occupations (473-502)..</b>	<b>63</b>
Precision production, craft, and repair occupations (503-702).	178
Operators, fabricators, and laborers (703-902):	
Machine operators, assemblers, and inspectors (703-802)..	57
Transportation and material moving occupations (803-863).	13
Handlers, equipment cleaners, helpers, and laborers (864-902).	59

## CLASS OF WORKER

Universe: Employed persons 16 years and over

Private for profit wage and salary workers.	1655
Private not-for-profit wage and salary workers..	247
Local government workers..	222
State government workers...	98
Federal government workers.	24
Self-employed workers..	255
Unpaid family workers..	11



### *Transportation and Access*

Eastern Massachusetts is bordered by the Atlantic Ocean on the east and north, Marshfield on the south, Norwell on the southwest, Hingham on the west, and Cohasset on the northwest. Scituate is 18 miles northeast of Brockton, 23 miles southeast of Boston, and 227 miles from New York City. Principal highways are State Route 3A and State Route 123, which connects with the Southeast Expressway (State Route 3) in the nearby town of Hanover.

### *Museums*

Scituate Historical Society  
Laidlaw Historical Center

### *Fisheries Profile*

#### Community

Scituate sits on the edge of a harbor, once filled with commercial fishing vessels, but now being transformed into a gentrified community with a struggling fishing presence.

#### Commercial fishing and fisheries-related employment

##### *Harvesting structure*

Four mid-sized stern trawlers, 2 full-time and 2 part-time, hail from Scituate. Two of these are wooden boats, one steel and 1 fiberglass. The largest of these is 62 feet, one is 55 feet and the other two are in the 50-foot range. There are 5 active full-time gillnetters and one part-time. About 50 lobster boats are also based in Scituate. Before the groundfish regulations were implemented there were 15 to 18 draggers and many of the vessels that now go lobstering were hook boats. Recently two big, offshore draggers were bought by one individual. Although they tie-up at the pier, to the chagrin of some of the fishermen who consider these boats too large for Scituate, they fish offshore and are not considered truly a part of the Scituate fleet.

Marshfield has 75 to 100 including 15 charterboats. All are small boats, less than 45 feet long, as the channel into Green Harbor is very narrow. The boats are primarily tuna, lobster, or combination boats (lobstering, scalloping, dragging depending on the season. Dogfish was a staple for awhile, but recent regulations have ruined that fishery.

##### *Processing structure*

There is no processing in Scituate, though one market sometimes cuts groundfish for the local restaurant trade.

##### *Support Services*

Scituate dock sits on the landward side of two protected coves, and has little remaining fishing infrastructure. There is no fish processor, ice house, bait house, fish auction, boat builder, net maker, or seafood broker in Scituate. The pier is state-owned with space for 15 boats (\$1000 annual tie-up fee). One section of the moorings is for commercial boats at \$3/foot annually. Commercial docking facilities account for less than 5% of all docking space.

Nevertheless, Diesel fuel is available on the pier and via trucks. There are no bait houses left for hook fishermen but there is competition now among suppliers of bait for the lobster fishery.<sup>24</sup> There is a boat welder, a couple of people who do minor boat repairs, fish retailers, and five fishing associations (two for lobster fishing, and the other three for

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<sup>24</sup> Channel Fish used to send one truck, now a variety of trucks show up each morning and try to sell their bait.

finfishing) to which fishermen from Scituate belong. Though there is no marine railway in Scituate, there is a public ramp adjacent to property which boat owners are permitted to use to work on their boats.

Scituate ranks 28<sup>th</sup> on the fishing infrastructure scale, while nearby Hingham ranks 25<sup>th</sup>. For Scituate, fishermen's supplies are available in the small neighboring town of Marshfield or in Hingham, and there are two local trucking operations that take fish to Boston. The local icehouse closed just two years ago, and the presence of two fishing monuments speaks to a fishing past greater than the present.

#### *Employment*

Key respondents estimated 300 fishermen live in the area. However, there are fewer crewmembers than there were before since some of the fishermen fish alone or with one crewmember whereas two or three was the norm prior to the regulatory changes. At least another 100 households are indirectly dependent on the commercial fishing industry.

#### *Species, Seasonality*

Groundfish: cod, a little flounder now (used to have huge quantities of blackback and yellowtail in the spring), pollock, grey sole and hake (used to have a lot, now handfuls due to the closures). Monkfish gained momentum in the 1980s (summer).

No small mesh species or pelagics are landed.

Crustaceans: lobster and crab (when the market demands)

HMS: swordfish is no longer landed; though there used to be 3 sword boats out of Scituate. Just a few tuna are landed here and trucked to Marshfield. In contrast, Marshfield is a center for tuna landings. They have the entire infrastructure, including trucks prepared to transport the tuna to Logan airport.

Two niche fisheries were tried for awhile, that is, slime eels (hagfish) and live sea ravens. Neither is currently active. The dogfish fishery was also active for a time.

Before regulations changed the fishing patterns, flounders were typically caught February through April, and then January became a good month as well. Yellowtail flounders provided the most revenue. Flounder is generally sold in New Bedford where there is enough competition to insure a decent price. After markets for dogfish developed, they were caught June through November.

#### *Revenue*

In the SIA for Amendment 7, the landings in Scituate were said to be valued at approximately \$260,000. Key respondents said that that the landings of one boat alone could easily be valued at \$260,000. Clearly, economic research needs to be done.

#### *Form of ownership (e.g., owner/operator; corporation)*

Most are owner-operated.

#### Recreational fishing and employment

There are two or three charter boats and seasonal party boat operations. One of the charter boats goes clamming when there are no charters. There are several marinas including a town marina in Scituate. South River, Brant Rock and Marshfield also have marinas.

### Cultural role of fishing

#### *History and museums*

There is a small museum with maritime artifacts in Scituate.

#### *Ethnicity in the fisheries*

The majority is classified as “Yankee” fishermen.

#### *Kinship & family*

While there are a few second-generation fishermen, Scituate is not like Gloucester or Chatham where fishing has been the occupation chosen by multiple generations.

#### *Where fishermen go for beer*

T.K. O’Malley’s

### Fishing related organizations and their roles in the community and fishery

#### *Commercial fishing associations*

South Shore Lobster Fishermen’s Association  
 Massachusetts Lobstermen’s Association  
 Mass Bay Inshore Commercial Groundfishermen Association  
 Massachusetts Commercial Fishermen  
 Marshfield Commercial Fishermen’s Association

## **Perceptions of the Fishing Community<sup>25</sup>**

### **Importance of fishing to the community**

A Selectman in neighboring Marshfield (Green Harbor) pointed out that fishing is the leading industry in Marshfield. Scituate, however, does not clearly recognize the importance of fishing to their community.

### **Boundaries**

Capital contacts can be divided up into those encompassing social capital (e.g., visit friends, go for recreation, go for vacation, visit relatives, socialize, go to church); economic (e.g., sell fish, offload fish, buy fishing gear, haul out for boat repairs, go to the bank, go shopping), and human (e.g., go to school, go for childcare, go for health care, go for retraining).

Sell Fish	New Bedford (monkfish, flats); Gloucester (groundfish)
Offload Fish	Scituate
Buy Fishing Gear	New Bedford; Gloucester (nets hung); Marshfield for some supplies
Buy Ice	Trucked in; some buyers supply
Buy Fuel/ Oil	Pier; trucks
Haul out Boat Repairs	New Bedford; local boat ramp; Plymouth; So. River; Gloucester (Rose Marine)
Bookkeeping	Scituate (self/spouses)
Banking	Scituate
Shopping	Scituate
Go to Church	Scituate
Got to School	Scituate
Go for Health Care	Weymouth

<sup>25</sup> Based on key informant interviews

Go for Childcare	Scituate
Visit Relatives	Scituate
Visit Friends	Scituate
Go for Vacation	Fishing or hunting; lobstermen may go to south, e.g., Belize
Go for Recreation	Anywhere
Socialize	Brant Rock, Scituate, Marshfield for bars Scituate has several coffeehouses open early

### **Communication Issues**

Asked how good communication was with local, state and federal fishery managers/representatives, one key respondent commented, "Oh, we can talk, whether they're doing something [in response to comments] is different."

### **Assessments**

Fishermen and scientists strongly disagree on assessments. One respondent noted that the proof of there being a discrepancy occurred when the NOAA vessel *Delaware* fished with their small mesh alongside a commercial gillnetter using 8 inch mesh (100 nets). The Delaware did not catch anything to speak of but the commercial boat landed 2000 pounds.

*"Market cod is now being caught in lobster pots and recreational fishermen are catching cod cast-fishing from the shore. One fisherman can catch his 400 pounds of cod with one tub of gear (hooks). You can walk on the dogfish."*

### **Local management practices**

Gulf of Maine Fishermen's Alliance agreed to reduce the number of nets (gillnetters), hooks, and restrict dragnets to 12-inch roller gear in a specific area to reduce impacts on the bottom. The Trawler Survival Fund, however, has sued to be allowed to use larger gear. "They could annihilate the area in a week." The small boats of Scituate and others agree that 1000 lbs/day and 7 inch mesh would save fish (eliminating discard while allowing boatowners to survive).

### **Economic Change**

Ten years ago, the economic condition of the fishing industry was rated as "excellent." "We were making a lot of money on dogfish, everyone had the freedom to fish and some of us chose to take the pressure off groundfish." Five years ago, the economic condition remained excellent. Today, due to the 6 month closures (blocks 124 and 125); the economic condition for the small boats out of Scituate is poor. A lot of the boats are gone; the industry has been devastated by the regulations and politics. Five years from now, anyone marginally involved will be gone; anyone who doesn't already own a boat will be gone, out of business. Even those with their own boats will have to pay attention.

### **Changes in fishing effort**

A lot of boats have gone out of business. Some have switched from finfishing to lobstering. Some would like to switch to skate, but the regulations are going to be too stringent. "They're going to regulate jellyfish next." Commenting on gear, one respondent noted that gillnetters are careful with their gear, they "can't afford to lose nets and they don't want to leave them out too long because the quality of fish is ruined and so is the price."

Some fishermen in small boats are trying to get more involved in research and/or experimental fisheries.

### **Effects of recent management**

The closures have had the most impact on Scituate fishermen. They were supposed to last 3 years, it is now the beginning of the fourth year (2001). The closure of Blocks 124 and 125 put Scituate boats at a disadvantage. A steam “around the corner” takes four and a half-hours. If a storm comes up, there’s no place to run. Chatham is too treacherous for anyone unfamiliar with the constantly shifting sandbar.

The effect is much more serious than simply economics. It is far-reaching—affects fishermen’s mental health. Family members argue more, fishermen argue with fishermen. Of course, a lot of people went out of business, as well.

The dogfish regulations do not make sense to some of the Scituate fishermen. You can’t maximize every species, so it would seem to be appropriate to fish down the predator fish to allow the comeback of cod and pollock, for example. Dogfish eat anything; they’ll even eat each other. They affect baitfish and recreational fish as well. Sheer numbers of dogfish force other fish to flee. One respondent noted that he could anticipate the arrival of the dogfish in June when their nets had a “great blast of pollock.” The gillnets would be solid with dogfish right afterwards.

The tendency for regulations to have a harsher impact on the small boat fishery is also counter to common sense. “Small boat fishing reduces the pressure on the stocks since they are weather dependent and they are inefficient but they provide fresh fish for the local markets.” There’s room for the large draggers offshore. But “money is power.”

### **Characteristics of local fishermen**

Most of the Scituate fishermen are locally born and bred. A good fisherman “loves working on the water, having the freedom of the last frontier. It’s in your blood.” Small groups of fishermen commonly share information.

#### *Job satisfaction*

Fishermen love to fish, they do not want the government supporting them with welfare payments, they just want to go on fishing and being productive.

### **Fishing families**

Some of the fishermen in Scituate are from fishing families, but not all. Spouses often took care of local errands, made lunches, phone calls, a few worked on the boats. Many spouses now work outside the home both because of “the times” and because many of the fishing families need the income and/or benefits. “Fishermen used to make adequate money to support their family.”

Not too many young people are looking at fishing. It’s tough to get decent help. Only those “going nowhere” are apt to try to find a site.

County Profiles  
Gloucester/North Shore Sub-region

## 5.6. Gloucester/North Shore Sub-region

### 5.6.1. Essex County

#### *Background<sup>1</sup>*

Essex County, created in 1643, is located on the Atlantic coast, in northeastern Massachusetts. Its neighboring counties are the Massachusetts counties of Suffolk to the south and Middlesex to the west, with the New Hampshire County of Rockingham at its northern boundary.

The county seat is Salem.

Cities, Towns & Communities include: Amesbury, Andover, Beverly, Boxford, Byfield, Danvers, Essex, Georgetown, Gloucester, Groveland, Hamilton, Haverhill, Ipswich, Lawrence, Lynn, Lynnfield, Manchester-by-the-Sea, Marblehead, Merrimac, Methuen, Middleton, Nahant, Newbury, Newburyport, North Andover, Peabody, Rockport, Rowley, Salem, Salisbury, Saugus, Swampscott, Topsfield, Wenham and West Newbury.

#### *Fishing Dependency*

Gloucester and the North Shore Sub-region is ranked, according to the employment indices used herein, eighth (out of eleven) for fisheries dependency. The reason for its low ranking compared to the other sub-regions is the availability of alternative employment in the area. This ranking is countered by the other indices we have been using in the study and confirms our intuition that employment indices tell only a portion of the story. Furthermore, the employment figures themselves are questionable. The 1990 Equal Employment Opportunity figures for Essex County, Massachusetts listed 81 fishing vessel captains and 645 "fishers" (19 Hispanic and 626 white), far greater numbers than indicated in the general U.S. 1990 Census data.<sup>2</sup>

Significantly, Gloucester itself ranks third (following New Bedford and Portland) in the index of fishing infrastructure differentiation. Furthermore, it is 21<sup>st</sup> (out of 36) on the gentrification scale. The profile of Gloucester describes a community that is committed to its fishing industry, whose cultural, human and economic capital are all linked to the industry.

Pure numbers of fish landed and the value of those landings also indicate the significance of the fishing industry to Gloucester. *Fisheries of the U.S., 1999*<sup>3</sup> reports that Gloucester landed 107.1 million pounds of fish in 1998 (11<sup>th</sup> of the 50 major U.S. ports) and 49.7 million pounds in 1999. Though the lower weight slid the port down to a ranking of 22, the value of the landings per pound doubled in 1999. In 1998, the landings were worth \$28.4 million whereas in 1999, the landings were worth \$25.9 million.

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<sup>1</sup> [http://home.att.net/~Local\\_History/MA-Essex-Co.htm](http://home.att.net/~Local_History/MA-Essex-Co.htm)

<sup>2</sup> <http://sasquatch.library.orst.edu/>

<sup>3</sup> *Fisheries of the United States*, 1999. U.S. Dept of Commerce, NOAA, NMFS. Prepared by Fisheries Statistics Division. Available at <http://www.st.nmfs.gov/st1/fus/fus99/index.html>

Community Profiles  
 Essex County, Massachusetts  
 Gloucester / North Shore sub-region

### 5.6.1.1. Gloucester

#### *Background*

Gloucester's beauty and bounty was described by the French explorer Samuel de Champlain in 1606. Later, Captain John Smith followed Champlain and filled his hold with cod which he sent to Spain for sale. Rumors of the ease of catching fish in what is now known as the Gulf of Maine began to spread.

Gloucester's history is inextricably tied up with commercial fishing. Indeed, it was founded in 1623 by competing fish companies from Dorchester and Gloucester, England who sent fishermen, salters and a ship's carpenter to exploit the rich cod resource off what was later called Cape Ann. It was during the 1800's that Gloucester became renown for its "uniquely beautiful two-masted schooners [that] sailed forth to the northwest Atlantic fishing grounds from Virginia to Greenland."<sup>4</sup> Fishing in the "glory days" was immortalized in books such as *Gloucestermen*, revealed in stories about legendary figures such as Howard Blackburn, and depicted in the oils of Fitz Hugh Lane, the film *Captains Courageous*, the statute of the Man at the Wheel and the Gloucester Fishermen's Wives Memorial.<sup>5</sup> The harsh reality of those years is memorialized by the plaque in Town Hall that lists the thousands of fishermen who never returned from their fishing trips. In 2000 the Cenotaph Memorial was erected beside the Man at the Wheel listing over 5000 names of Gloucester fishermen "who went down to the sea."

Cod and haddock fished from dories with hook and line was salted.<sup>6</sup> Mackerel fishermen jigged for their prey until seine nets became popular after the 1860's. Swordfish was harpooned when possible. Halibut, a flat fish that could weigh 600 pounds, was iced and sold fresh, before it was over-fished to commercial extinction before the turn of the 20<sup>th</sup> century. Gloucester was also noted for fish glue made from cooked skins in the late 1800's.<sup>7</sup>

Newfoundlanders, Danes, Swedes and Portuguese were prominent fishermen in Gloucester before the Civil War. Italian fishermen were fishing out of Gloucester by the early 1900's.<sup>8</sup> Later immigration waves from Sicily brought additional fishermen to the city. Finns first came to quarry granite later some turned to lobster fishing.

The famed New England shipbuilding industry developed as fishermen sought prey further offshore. The lush, nearby forests of the North Shore provided the timbers; planking and the faultless masts to help fishing vessels grow in size and numbers. By 1720, the small early boats had evolved to fore-and-aft rigged craft, later to be called schooners. At the same time the fishing vessels were enlarged, support services grew to provide the increased need for ice, salt, sails, and other requisite gear and provisions. Shoreside support services providing transportation, processing and marketing paralleled the growth of the vessels and increased catch.

<sup>4</sup> Joseph E. Garland. 1995. Gloucester on the Wind, American's Greatest Fishing Port in the Days of Sail. Dover, NH: Arcadia Publishing.

<sup>5</sup> James Brendan Connolly authored *Gloucestermen* as well as numerous other novels and stories depicting the Gloucester fishing industry. Sebastian Junger wrote *The Perfect Storm*. The Gloucester Fishermen's Wives Memorial is not yet installed, but the full-size model has been created and fund-raising is almost complete. The dedication is scheduled for August 2001.

<sup>6</sup> <http://www.downtosea.com/>

<sup>7</sup> Joseph E. Garland. 1995. Gloucester on the Wind, American's Greatest Fishing Port in the Days of Sail. Dover, NH: Arcadia Publishing.

<sup>8</sup> Joseph E. Garland. 1995. Gloucester on the Wind, American's Greatest Fishing Port in the Days of Sail. Dover, NH: Arcadia Publishing.

By the 1940's Gloucester fishermen were dragging for redfish as far away as the Grand Bank from eastern-rigged side trawlers.<sup>9</sup> When the price of fine-grain white oak soared after World War II, fishing vessels were most often constructed from steel. In the late '60's and early '70's, Gloucester boats were competing for fish with a huge array of distant water fleets. "In the '80's whale cod disappeared from inside."<sup>10</sup>

Slade Gorton started out in the textile business in Rockport, but a fire that destroyed the Annisquam Cotton Mill in 1833 eventually led him to fishing and preparing salt cod and mackerel for sale.<sup>11</sup> As his sons joined the business, the company started packing salt cod in wooden boxes and mackerel in kegs. In 1906 Slade Gorton & Company merged with John Pew & Son, David B. Smith & Co. and Reed & Gamage to form Gorton-Pew Fisheries Co. The new company had a fleet of 39 vessels, the largest fleet operated by any company on the Atlantic Coast. The company grew to 55 vessels with a thousand crewmembers, 15 wharves and 35 buildings with 6 other plants along the coast employing another 1000 ashore. In 1922, the Italian government purchased a million-dollar shipment of salt cod, but when Mussolini overthrew the government, the cod was confiscated and never paid for so Gorton's was forced into bankruptcy. The company survived however and in 1954 became Gorton's of Gloucester, then the Gorton Corporation in 1964.

Gloucester native, Clarence Birdseye developed techniques to freeze fish and vegetables for home storage and consumption. He founded General Seafood Company, predecessor to General Foods. As freezers became popular, Gorton's expanded its frozen fish business with Birdseye's help.<sup>12</sup> In 1995-96, Gorton's was purchased by General Mills, then sold to Unilever. Today, Gorton's is among the top ten seafood suppliers in North America according to WorldCatch News, with \$350 million in sales in 2000.

For many years, a portion of Gloucester's fleet landed pelagic species in great quantity. A rendering plant provided a place for the gurry and other waste products of fish processing. Eventually, Gloucester's fleet started focusing on the "cleaner" groundfish species for the fresh fish market, the processing plants started to use imported frozen fish blocks to produce their breaded products and the city began to diversify its economy. While Gloucester's fishing industry still contributes a significant portion to the city's economy, light manufacturing and tourism are considered growth industries for the city. With easy rail and highway access to Boston, Gloucester also serves as a bedroom community for many Boston workers.

In addition, artists have long been attracted to Gloucester's picturesque working waterfront. "Since the mid-nineteenth century, wind-weathered Rocky Neck, a small peninsula across the harbor on Cape Ann, has been one of America's oldest art colonies. Here, with the breathtaking views of the sea and town, famous painters like John Singer Sargeant, Fitz Hugh Lane, Edward Hooper and Winslow Homer came to work in the many buildings that date back to the Civil War. The dozens of galleries, studios and a traditional air of authenticity keep Rocky Neck a veritable working art colony."<sup>13</sup> "In addition, Cape Ann Symphony makes its home in Gloucester as does the critically acclaimed Gloucester Theatre Company, whose director and playwright, Israel Horovitz, is known on and off Broadway."<sup>14</sup>

## *Governance*

Mayor and City Council

<sup>9</sup> Peter K. Prybot. 1998. *White-Tipped Orange Masts, Gloucesters Fishing Dragger*. Gloucester, MA: The Curious Traveller Press.

<sup>10</sup> Key respondent interview.

<sup>11</sup> [http://www.gortons.com/lore/lore\\_gortonstory.html](http://www.gortons.com/lore/lore_gortonstory.html)

<sup>12</sup> Ibid.

<sup>13</sup> <http://www.northshorechamber.org/>

<sup>14</sup> <http://www.state.ma.us/dhcd/profile/107.HTM#DEMOGRAPHICS>



## *Demography*<sup>15</sup>

### Population

According to the 1990 census, there were 28,716 individuals in Gloucester, 13,827 male and 14,889 female. The population had grown to 29,267 by 1996.

### Age Structure

Under 5 comprised 6.6 percent of the population (1,888 persons), 5-14 years old comprised 11.8 percent (3,386), 15-44 years 45.5 percent (13,079), 45-64 years 20.7 percent (5,936) and 65 and over 15.4 percent (4,427).

### Education

There were 4,283 enrolled students in the 1991-92 school year. According to the 1990 Census, 75.1 percent had a high school diploma or higher. Nineteen percent had a Bachelor's degree or higher.

In addition to Gloucester high school, students could enroll in the North Shore Regional Vocational school or Essex County. Colleges nearby include: Salem State College, Salem; Merrimack College, Andover; North Shore Community College, Danvers; Essex Agricultural Institute; and Bradford College, Haverhill.

### Housing

There were 13,125 housing units with a median value of \$178,056. Owner occupied units were 57.8 percent of the housing.

### Racial and Ethnic Composition

The census indicates that 28,273 persons (98.52 percent of Gloucester's population) was white, 272 (1.04 percent) Hispanic, 65 Blacks, 25 American Indians and 73 Asians.

## *Economic Context*

### Income

Per capita Income in 1989 was \$16,044 and the median household income was \$32,690.

### Employment

According to DET data, there were 15,541 employed in 1987 out of a labor force of 16,734 (unemployment rate of 7.1 percent). Unemployment soared to 14.2 percent in 1992, then fell steadily to 4.4% in 1999 when 15,313 out of 16,011 were employed.

The largest employers paying unemployment compensation in 1992 were the City of Gloucester (950 employees); Gorton's, seafood processing (650 employees); Addison Gilbert Hospital (600 employees); Varian, computer chips manufacturer (450); and Gloucester Engineering (300).<sup>16</sup>

From the 1990 Census:<sup>17</sup>

#### INDUSTRY

Universe: Employed persons 16 years and over

<b>Agriculture, forestry, and fisheries (000-039)...</b>	<b>548</b>
Mining (040-059)...	11
Construction (060-099)...	790
Manufacturing, nondurable goods (100-229)...	1462
Manufacturing, durable goods (230-399)...	1742
Transportation (400-439)...	746
Communications and other public utilities (440-499)...	249
Wholesale trade (500-579)...	687

<sup>15</sup> <http://govinfo.library.orst.edu/cgi-bin/> and <http://state.ma.us/dhcd/iprofile/107.htm>

<sup>16</sup> <http://state.ma.us/dhcd/iprofile/107.htm>

<sup>17</sup> <http://venus.census.gov/cdrom/lookup/979329826>

Retail trade (580-699)...	2338
Finance, insurance, and real estate (700-720)...	751
Business and repair services (721-760)...	748
Personal services (761-799)...	446
Entertainment and recreation services (800-811)...	202
Professional and related services (812-899):	
Health services (812-840)...	1128
Educational services (842-860)...	917
Other professional and related services (841, 861-899)...	1197
Public administration (900-939)...	508

## OCCUPATION

Universe: Employed persons 16 years and over

Managerial and professional specialty occupations (000-202):	
Executive, administrative, and managerial occupations (000-042).	1967
Professional specialty occupations (043-202)...	1912
Technical, sales, and administrative support occupations (203-402):	
Technicians and related support occupations (203-242)...	479
Sales occupations (243-302)...1405	
Administrative support occupations, including clerical (303-402)...	2169
Service occupations (403-472):	
Private household occupations (403-412)...	32
Protective service occupations (413-432)...	207
Service occupations, except protective and household (433-472)...	1796
<b>Farming, forestry, and fishing occupations (473-502)...</b>	<b>406</b>
Precision production, craft, and repair occupations (503-702)...	1882
Operators, fabricators, and laborers (703-902):	
Machine operators, assemblers, and inspectors (703-802)...	934
Transportation and material moving occupations (803-863)...	538
Handlers, equipment cleaners, helpers, and laborers (864-902)...	743

By 1999, according to the Massachusetts Division of Employment and Training, the numbers employed in the category of "agriculture, forestry, fishing" has slipped to 238. The categories that showed increases in employees included: Transportation, Communication & Public Utilities, Finance, Insurance & Real Estate, and Services.

### *Transportation and Access*

Gloucester is the northeastern terminus of State route 128, the highway that circles the Boston metropolitan area. State routes 127 and 133 also serve the city. The closest international airport is in Boston, about 35 miles away, though nearby Beverly has a Municipal Airport.

Commuter rail service to Boston is available and a fixed route bus service runs between Gloucester and Rockport.

### *Hospitals, museums, libraries*

- Addison Gilbert Hospital
- The Sawyer Free Library maintains an excellent collection of fiction and nonfiction pertaining to the fishing industry.
- Cape Ann Historical Museum has a permanent exhibit devoted to the Gloucester fishing industry. In addition there is a library/research center with historic maps/charts of fishing grounds and a variety of out-of-print books on early fisheries-related research.
- North Shore Arts Association
- *Adventure*, 1926 Gloucester fishing schooner, is used for educational outreach. It is currently being renovated.

- The Man at the Wheel and the Fishermen's Memorial Cenotaph—The well-known Man at the Wheel statue now has a companion memorial, a series of granite and bronze plaques surrounding the statue that list 5,368 Gloucester fisherman lost at sea between the years 1623 and 2000.
- Gloucester Fishermen's Wives Memorial is an acknowledgement of the important roles women have traditionally played in the fishing industry. Though not yet erected on its base on the opposite side of the drawbridge from the Man at the Wheel statue, a full-size model of the statue has been constructed and fund raising is on target.<sup>18</sup>

### *Fisheries Profile*

#### Community

Gloucester fulfills the definition of a fishing community on the basis of central place theory. Fish are legally sold ex-vessel to a dealer, processor or the public; fishing support services are provided; there are public facilities providing dockage; fishing people satisfy their daily and weekly social and/or economic needs here, and some fishermen and their representatives participate in fisheries resource management.

Furthermore, "everyone in Gloucester knows a fisherman. That makes a tight-knit community. Everyone is devastated if someone is lost at sea. The fishermen's wives all know each other, share the same hardships and advise each other."

For many years, Gloucester's fishing community was divided by ethnic group and gear type. Gillnetters, predominantly "Yankee," and trawlers, who were predominantly Sicilian, had numerous gear conflicts. Each group blamed the other for the conflicts. Each claimed the other did not care about the resource or about anything except catching as much fish as they could. Gillnetters were said to be greedy for bottom, setting up nets to reserve their territory even when they could not possibly pull all the nets they set within a reasonable time frame. When there were reports and/or rumors about net liners, about tows through fixed gear, and other violations of regulations or etiquette, the offending trawlers were harshly criticized and the whole group was stigmatized. Negative stereotypes about the Gloucester fleet were voiced in ports all along the East Coast. By 1998, however, the stereotype had radically changed. "Some of the guys have turned around 100% in their attitude." Gloucester fishermen of both gear types and ethnic groups said that the majority of fishermen who remain in fishing are "real fishermen" who want long-term sustainability of the industry.

Whether or not Gloucester should be classified as "fisheries-dependent" is not consistently answered in the affirmative. Several respondents noted that the city is sufficiently diversified to survive even if the fishing industry does not. However, the image of Gloucester as a fishing community remains very prominent. The fishing industry is also well represented in public policy debates so to-date those with opposing interests have not successfully changed zoning regulations and other restraints on property use that might affect maritime businesses. For example, a proposal for the development of a mall on waterfront property that had long been vacant was defeated, as was a proposal to create condominiums out of a waterfront former paint factory. Those who argue for opting out of the "designated port area" status say that the economy should dictate the best use of the waterfront, that with the diminishment of the fishing fleet, the whole harbor does not need to be saved for the fishing industry.

For a time, complaints were voiced that the mayor was too enthusiastically endorsing growth in the tourist trade and light industry while ignoring the importance of the fishing industry to Gloucester. One respondent noted that the mayor should have more consistently appeared at New England Fishery Management Council meetings, for example, to point out the impacts of regulations on the "infrastructure, oil businesses and groceries, all the things we subsidize and use." Another respondent noted that the mayor came very close to

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<sup>18</sup> The statue was unveiled and dedicated in August 2001.

losing his reelection campaign and was thereby reminded that the community values the fishing industry. He then realized that he had to be perceived as supportive of the industry if he wanted to continue serving as mayor. While the city is strengthened economically by its diversity, clearly the working waterfront remains a core value that might be underestimated by simple arithmetic.

One respondent expressed a fear that Gloucester will become a bedroom community for Boston where newcomers can buy a waterfront house, yet still be close enough to attend cultural events in the larger city.

### Commercial fishing and fisheries-related employment

#### *Harvesting structure*<sup>19</sup>

The federal permit files for 1997 list 226 vessels for Gloucester. Sixty to seventy groundfish boats remained in Gloucester in the summer of 1999, perhaps 15 percent of which lobster in the summer. Seventy-five to 80 lobster boats fish in federal waters, 50-60 in state water. A half-dozen urchin boats worked out of Gloucester for awhile, but have since left, presumably for other ports. The midwater fleet consists of 4 to 6 vessels that go herring fishing. "Longliners are pretty well out of business with the Jeffrey's closure."

"Some of the lobstermen are "heavy hitters," typically averaging 800 to 1000 pots and stocking a half million dollars annually." There are a couple of boats offshore crabbing.

Estimates of numbers of harvesters varied widely ranging from 250 to 300 for Gloucester, 400 to 800 for Cape Ann (including Gloucester, Beverly, and Essex).

#### *Processing structure*

Original home to the founder of frozen fish, it is fitting that Gloucester has retained a sizable presence in the frozen fish processing and marketing sector. The plants do not rely on fish landed in Gloucester, instead many import frozen blocks of fish primarily from Canada, Iceland, and Norway. The blocks are cut, breaded, and packed for sale as fish sticks and fish portions. These are sold locally and nationally to schools and other institutions, supermarkets and fast-food restaurants.

Some of the plants are partially owned by vertically integrated, international companies. One of these relies on its own vessels to provide individually quick frozen (IQF) pollock for some of their products. New Zealand whiting, cod and haddock are also used, purchased from dealers, not directly from fishing vessels. Typically, this company produces 40,000 pounds of fish sticks and another 10-30,000 pounds of other products per day. Products are sold to retail businesses (supermarkets) and to food service. The company also has co-pack arrangements with some larger companies.

When running at capacity, there are 125 employees per day, but only two percent of these are permanent, full-time. Only a few of the managers are from Gloucester. The line workers are usually recruited by an employment service in Chelsea. Nevertheless, a majority of the workers are loyal to the company and typically have been working there for seven years for minimum wage. All of the line workers are Hispanic, predominantly Guatemalan and Salvadoran. The gender mix of workers changes with the season. In the summer women are in the majority because many of the men work at construction, but men predominate in the winter. Few people in Gloucester are willing to work for minimum wage. Only Gorton's, that is unionized, pays significantly higher wages for fish packing and processing.

Quality is considered extremely important to this company. A HACCP plan is operative and key employees have been trained (using Spanish tapes as necessary). Workers are required to wear hairnets and uniforms, neither jewelry nor gum is allowed and there are daily inspections to assure compliance.

<sup>19</sup> From key respondent interviews

The challenge of the future as seen by this company is diversification. Consumption of seafood is down and the fish industry has not been as creative as the chicken and beef industries. Value-added seafood may resolve some of the problems, but given the lack of product globally, business success is likely to remain a struggle.

With a few exceptions, fresh fish processors now cut fish primarily for local customers, shipping the rest of their whole fish to Boston for processing.<sup>20</sup> One exception is a company with 18 employees that specializes in the highest quality fish for the high-end natural foods market. Herring is another exception since it is generally sold whole as bait to lobster fishermen.

When it looked like herring was going to make a “come-back” in Gloucester, several plants began to upgrade their facilities to comply with HACCP standards so that the herring could be sold as food for humans. One dilapidated plant was bought and renovations begun to service two herring vessels, one a 130-foot boat, rigged for pair trawling and converted to refrigerated seawater (RSW). Two foreign companies had expressed an interest in herring and the company also expected to sell to canneries and wholesale lobster bait dealers. Tote by tote sales of salted bait was not what was intended. Nevertheless, when Gloucester fractured over competing visions of what was the proper use of the Jodfrey State Fish Pier and how herring should be caught, handled and sold, and fishermen had difficulty locating the volumes of herring that had been anticipated, the company was forced to sell herring bit by bit.<sup>21</sup>

Herring processors were not the only companies affected by fishing regulations. One small company that was trying to expand its services to include groundfish processing paid \$80,000 to upgrade its facilities for HACCP certification just before the cod quotas were instituted.

*Wholesalers and other Support Services*  
Gloucester Display Auction

Opened in December 1997, Gloucester Seafood Display Auction was modeled on the Portland Fish Exchange. The higher prices generated for higher quality fish at the auction has helped sustain the Gloucester harvesting community despite regulatory pressures. Fish sold through the auction is bought for distribution nation-wide. “Now we are getting the prices our fish deserve!” “The scales are accurate and you pay 5 cents per pound for the amount of fish you take out, regardless of what price you obtain for the fish. It didn’t used to work that way. The more expensive the fish was, the more it cost you to take it out.”<sup>22</sup>

However, some disgruntled wharf owners complain that they cannot compete with government subsidized services such as the State Fish Pier and the auction. One respondent noted that the auction was undercutting not only the wharf owners, but also the ice company and trucking companies as well. Others however had an opposing view. Space in the newly constructed “Stalls Building” on the State Fish Pier is intended for small, start-up businesses. This is supposed to serve as an incubator to help seafood companies and others so that the local companies reap the benefit of value-added processing, for example. Unfortunately, rents in the Stalls Building are high, so some small companies are not willing to risk moving into the building.

<sup>20</sup> Daniel Georgianna. 2000. *The Massachusetts Marine Economy*. Dartmouth, MA: University of Massachusetts.

<sup>21</sup> Fuller description of the Gloucester Herring Corporation’s rise and fall can be found in these articles in *Commercial Fisheries News* by Hall-Arber: “Gloucester Display Auction Now in Business,” January 1998; “Herring, Mackerel-What’s the Opportunity,” December 1997; “Visions of the Future Clash over Gloucester Herring Proposal, Factory Trawlers,” June 1997; “Gloucester Herring Plant Proposal Draws Fire,” May 1997; “Herring and Gloucester: Hope for the Future,” October 1996; “Gloucester Pursues Fish Auction Development,” October 1996

<sup>22</sup> The price has since gone up to 7 cents per pound.

In June 2000, Global Food Exchange bought the Gloucester auction. "It is the largest daily auction of fresh seafood in North America with annual volume in excess of 20 million pounds (and current annual gross transaction value in excess of \$20 million.<sup>23</sup> According to one respondent, fishermen (in 2001) are starting to complain that buyers are not paying fair prices and some have stopped going to the auction.<sup>24</sup>

Americold is a cold storage facility that handles frozen fish products for local, regional and national companies.

Oil companies that specialized in fuel for fishing vessels for as long as 40 years have had to diversify since the fleet contracted and DAS restrictions limit fuel use of the remaining vessels. Fifty percent of the business of at least one of these companies is now provision of home heating oil.

Dealers who once exclusively handled finfish are now buying and selling lobsters. Shellfish is also handled, bought, shucked and packed. HACCP must be routinely followed, as well as state and interstate sanitation and tracking guidelines. Shellfish commonly handled include surf clams, steamers, propellers, little necks, cherrystones, oysters, scallops, razors and sea urchins.

### Trucking

Each of the dealers owns or leases a truck or two for product distribution.

### *Infrastructure*

Gloucester's inner harbor is a "designated port area" and thus is legally bound to maintain marine-dependent use. The Jodfrey State Fish Pier also insures that the fishing industry will continue to have at least some access to waterfront amenable to loading and landing, etc. Nevertheless, fishing industry participants express concern about the condition of the city's piers and wharves. Many are quite old and suffer from a lack of maintenance. The wooden piers cost as much as \$60,000 annually to repair.

Some owners complain that the display auction has attracted the majority of the vessels so that the wharf owners are no longer able to charge 10-14 cents a pound landing fees (the auction currently charges 7 cents). Since there are fewer vessels and limits on fishing days, the fuel sales are down, as are all the other support services. Consequently, the wharf owners are unable to earn sufficient profit to pay for upkeep on the wharves with only marine-related business. These owners are lobbying for the right to diversify their property, selling or leasing to non-marine-dependent users. The harvesting sector fears that such diversification will lead to gentrification and will price fishing-dependent use out of business. Once the access to the waterfront is lost, when the fish stocks rebound, there will be nowhere for the fleet to go.

Privately owned wharves typically provided free dockage, storage facilities for gear and trash removal. Some are now charging for dockage, though at least one respondent noted that he could not charge to tie-up to his poorly maintained pier.

### *Employment (year-around and seasonal)*

Estimates of employment and earnings in seafood processing and wholesaling in Gloucester in 1997 were 1,581 employees earning \$53 million.<sup>25</sup> These numbers could be low since some workers are self-employed and therefore not included in DET (Massachusetts Division of Employment and Training) data and because the plant workers are often supplied by contracts with employment services.

DET lists 281 employees in the category "agriculture, forestry, fishing" in 1997, a marked

<sup>23</sup> <http://www.fishfacts.com/sfdpriv/news1/20000614GAGA.html>

<sup>24</sup> Key respondent interview

<sup>25</sup> Ibid.

contrast to the 532 noted for 1989, the year of the Census. The data for 1999 shows only 238 employees in this category. Again, these numbers are not strictly reliable for estimating the numbers of fishermen, both because the category includes agriculture and forestry and because many, if not most, fishermen are self-employed.

Respondents estimated that there were 700-800 households directly dependent on fishing (including lobstering) and 1000 to 1200 indirectly dependent.

Most of fishermen are full-time though with the restrictions some supplement their income with such work as automotive mechanics, snowplowing, and construction. A few have been retrained for computer work or truck driving. Some still work in the fishing industry, in sectors other than harvesting. Rowe's Machine Shop and the cab company employ a number of former fishermen. Another former fisherman opened dry-cleaners and one a restaurant.

Nevertheless, fishing has proved to be an honorable occupation for a wide array of individuals. Furthermore, some of those who were unable to pursue a formal education have become excellent fishermen. Certain respondents also pointed out that the small boat inshore fishery should be encouraged both because it usually is a smaller-scale fishery (less damaging to habitat and the stocks) and because the individuals involved are often family-oriented.

#### *Species, Seasonality*

Niche fisheries include hagfish (slime eels), shrimp, whiting, and herring. Urchins and dogfish were targeted but availability and regulations (respectively) have eliminated the option to do so. Some of the lobstermen have tried bringing in crab as well, but the infrastructure doesn't exist. In Maine, spouses developed a cottage-industry picking crab for lobstermen, but this has not happened in Gloucester. Some do hire recent immigrants (often Asian or Hispanic) to pick the crab.

Hooking is a winter fishery because dogfish are here in the summer. At \$.15 per pound, dogfish aren't worth the bait and hooks. Furthermore, dogfish has been closed to fishing, except for a limited bycatch, in an effort to increase its biomass.

The majority of fishermen are full-time groundfish fishermen or lobstermen. A handful of lobster fishermen are civil servants or teachers who lobster part time or only in the summer. Others snowplow in the winter.

As the regulations became stricter, some fishermen went scalloping for 3 to 8 weeks, just to stay busy. The problem is that all the little fisheries that used to be used to make a year's pay are gone, either because the stocks have moved off, been fished out or the regulations have made them inaccessible.

Nevertheless, among the day boats, there is still quite a bit of gear and target species switching. One vessel, for example, will fish for whiting for a time, switch to groundfishing, then back to whiting. Another boat will drag from January to May, then go lobstering, another switches day-to-day, dragging one day, pulling lobster pots the next.

Whiting is labor intensive and the returns are poor. Typically the price is as little as 15 to 20 cents a pound, with an occasional spike up to 65 or 70 cents per pound. "It takes a lot out of the boat and engine, because it's the constant 'go.' It's a hard way to make \$300 to \$400 a week."

Landed species include:

Groundfish: cod, dabs, winter flounder, yellowtail, haddock, pollock, hake, halibut, Grey sole

Small mesh: whiting, squid, shrimp

Pelagics: herring, mackerel

Crustaceans: crab (as bycatch), lobster

HMS: bluefin tuna, swordfish

Others: striped bass, dogfish, skate, sea urchins (few), monkfish, bluefish, slime eels, sea cucumbers, menhaden (when around).

Other shellfish: conch/whelks (few), soft-shell clam, mahogany clams (not money-makers), quahogs, periwinkles (not commercially), mussels (small quantities), razors, oysters

Seaweeds are being harvested by a few, but “they’re keeping it real quiet.”

*Form of ownership (e.g., owner/operator; corporation)*

Trawlers tend to be owner-operated or family-owned and operated. Two herring vessels are run by hired captains.

Recreational fishing and employment

Recreational fishing has increased along with marinas and leisure craft. In addition, whale watching is an active business. Head and charter boats are allowed to fish in some areas that are closed to commercial fishermen. This engenders considerable resentment, especially among the small boat commercial fleet that has no alternative fishing ground that is feasible to reach.

There are quite a few well-to-do people who come up from Long Island and elsewhere to chase tuna.

Cultural role of fishing

*History and museums*

Cape Ann Historical Society has a permanent exhibit that focuses on the history of fishing out of Gloucester. In addition, there is a small library in the building for research.

*Ethnicity in the fisheries*

Gloucester’s fisheries have always reflected waves of immigration. Initially, the fleet was English. Later, immigrants from Norway, Ireland, Newfoundland became fishermen. Evidence of the Portuguese legacy remains in some of the city’s place names and in both the name of one of the Catholic churches, Our Lady of the Good Voyage and in its prominent statue that depicts Our Lady holding a fishing vessel. The trawler fleet of Gloucester is now predominantly Sicilian. Gillnetters and hook fishermen tend to be mixed “Yankee” stock.

Respondents estimated that ninety percent of the fleet was born in the area, 60 percent have fishing backgrounds.

*Religion*

Among the Sicilian population, the Roman Catholic Church is extremely important. Annual events such as Saint Peter’s Fiesta and the Blessing of the fleet are city-wide celebrations that extend beyond the boundaries of Catholicism, but publicly declare the association of fishing with the earliest founders of the religion. Less public, but nevertheless significant for their role in the flow of social capital, are the annual Novenas practiced by various fishermen’s wives. Friends and relatives participate in nine days of prayer and singing to favored patron saints. The culmination of the Novena is a feast for which participants contribute food and share in eating.

*Kinship & family*

Since its founding, Gloucester has been a fishing community. Several generations of each ethnic group who moved through the fishing industry continued the tradition. Some of the members of the fishing community in Gloucester can count eight generations of forebearers who were in the industry, here and in Sicily.

As in other communities, the children of fishermen today are obtaining more education and most are opting for careers other than fishing. There are a few examples of individuals who have gone on to obtain college degrees, but have been drawn back to the way of life they



grew up with. Nevertheless, the regulations, the public's negative image of fishermen coupled with the expense and uncertainty associated with fishing constrains growth in the harvesting sector. A common lament among those who worked hard to build up their business for their children is that they have had to face extreme hardship due to restrictive regulations only to confront a corresponding lack of enthusiasm for continuing the business among their offspring.

*Where fishermen go for coffee*

The Dory Café  
Dunkin Donuts

*Where fishermen go for beer*

St. Peter's Club is popular among the Sicilian fleet members. The Crow's Nest gained renown as the gathering place for swordfish boats' crews when Sebastian Junger published his book *The Perfect Storm*. Now many tourists go there.

Fishing related organizations and their roles in the community and fishery

*Commercial fishing associations*

**Massachusetts Fishermen's Partnership** (State-wide membership)

The Partnership takes on issues that fishermen of different ports, gear and target species can support. One of their first tasks was to respond to the identified need of health care for fishermen and their families. The Fishing Partnership Health Plan was developed with some federal and state aid and the support of Caritas Christi, the Roman Catholic health organization. Fishermen and their families on the plan are served by Tufts Medical.

While remaining actively involved in maintaining the health plan, the Partnership continues to seek cross-cutting issues. Encouraging collaborative research between fishermen and scientists and facilitating discussions among fishermen and other stakeholders about the reauthorization of the Magnuson-Stevens Act are just two of the tasks they have undertaken lately.

Cape Ann Lobstermen's Association

Cape Ann Vessel Association

Gloucester Fishermen's Association

Gloucester Inshore Fishermen's Association

Gulf of Maine Fishermen's Alliance (was Cape Ann Gillnetter's Association)

*Fishermen's Wives associations*

Gloucester Fishermen's Wives Association, founded in 1969, lobbies for the interests of the fishing industry (e.g., against oil-drilling on Georges Bank and ocean dumping, as well as for regulations that protect fishing communities) and promotes innovation in the industry (e.g., value-added seafood, cookbook). Schlesinger Library at the Radcliffe Institute of Harvard University maintains the records of the GFWA as part of its permanent collection.

*Other*

**Gloucester Fisheries Commission** was established by the City Council in 1956 to support the fishing industry. The Mayor, a City Councilor, 4 at-large community members and 7 members of the fishing community are named Commissioners.

**Massachusetts Fisheries Recovery Commission** created by Gloucester State Senator Bruce Tarr, Representative Anthony Verga and New Bedford State Senator Mark Montigny—promotes collaborative research

**Gloucester Initiatives** is a grassroots organization comprised of fishing industry members, local activists, and concerned citizens that was formed initially to investigate the pros and cons of allowing the 300+ foot factory trawler *Atlantic Star* to be based in Gloucester and the building of a foreign-owned plant on the State Fish Pier.

*Unions*

Gorton's is unionized.<sup>26</sup>

Fishing-related programs and services*Other NGOs*

**Gloucester Fishermen and Families Assistance Center** is overseen by Commonwealth Corporation (formerly the Corporation for Business, Work and Learning), a semi-private, workforce and economic development agency. The Assistance Center began when emergency funds were allocated to help fishermen and their families affected by groundfish regulations in 1994. Then, as now, the Center directs fishing families to various services including retraining programs, GED tutoring and English as a second language classes.

**Greenpeace** maintains an office in Gloucester specifically to focus on fisheries issues.

**Cape Ann Commercial Fishermen's Loans** provides money to qualified fishermen who have been refused by two commercial lending institutions.<sup>27</sup>

*Extension programs*

**Massachusetts Coastal Zone Management Program** maintains an office on the Fish Pier. The program most frequently interacts with the fishing industry during the harbor planning process.

*Training institutes*

**Gloucester Fishing Families Assistance Center** helps fishing family members obtain training for alternative employment.

*Coast Guard*

Gloucester's **Coast Guard** station is part of the U.S. Coast Guard's First District and the Coast Guard Group Boston.

## Perceptions of the Fishing Community<sup>28</sup>

Importance of fishing to the community

Opinions ranged from "slightly" to "very important." Most acknowledged that the city would "go on" even if fishing disappeared, but most of the key respondents noted the city's long history of fishing as well as considering fishing important to the community's image and, consequently, to its attraction as a picturesque destination for tourists, summer residents and artists. (See discussion under "community" above for a fuller discussion.)

Boundaries

The people of Gloucester tend to maintain most of their contacts within Gloucester. Exceptions include the fishermen's representatives who attend Council meetings and NEFMC Committee meetings all over the region and members of the Gloucester Fishermen's Wives Association who travel the region and beyond to speak on behalf of the industry and/or to offer cooking demonstrations. Some young people joke about not being able to get anyone from their parent's generation to "go over the bridge." There is also a sense of community in both Rockport and Pigeon Cove. But Gloucester is the market and supplier for the industry in the area.

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<sup>26</sup> One respondent recalled being paid \$3/hour for packing fish sticks when the minimum wage was \$1.50. Her mother and aunts also worked in the plant. Middle-aged to older women dominated the fish-packing jobs.

<sup>27</sup> Fishermen, bankers and businessmen are on the Board. Loans carry a 4 percent interest rate, with boats and homes used as collateral. \$2.5 million was loaned out for five years; there have been no delinquencies in repayment.

<sup>28</sup> Based on key informant interviews

Capital contacts can be divided up into those encompassing social capital (e.g., visit friends, go for recreation, go for vacation, visit relatives, socialize, go to church); economic (e.g., sell fish, offload fish, buy fishing gear, haul out for boat repairs, go to the bank, go shopping), and human (e.g., go to school, go for childcare, go for health care, go for retraining).

Selected capital contacts typical of Gloucester harvesters are charted below:

Sell Fish	Gloucester
Offload Fish	Gloucester
Buy Fishing Gear	Gloucester, occasionally Boston
Buy Ice	Gloucester
Buy Fuel/ Oil	Gloucester
Haul out Boat Repairs	Gloucester/Pigeon Cove
Book Keeping	Gloucester
Banking	Gloucester/Rockport
Shopping	Gloucester
Go to Church	Gloucester/Rockport
Got to School	Gloucester/Rockport
Go for Health Care	Gloucester
Go for Childcare	Gloucester/Rockport
Go for Retraining	Gloucester
Visit Relatives	Gloucester/Rockport/Italy
Visit Friends	Gloucester/Rockport
Go for Vacation	Worldwide/Florida
Go for Recreation	All New England
Socialize	Gloucester

Contacts between buyers and sellers of lobsters are usually reciprocal. Harvesters generally buy bait and sometimes fuel and other supplies from the company that buys their lobsters.

Marketing of product by independent dealers and/or the auction may be local, regional, national and international. Live product, sea urchins and tuna are often sold to Japanese buyers. Shellfish may be sold to domestic shippers out of Boston, New York or Philadelphia. Ethnic markets are also significant purchasers of shellfish and species less favored by the average supermarket such as mackerel, squid and codfish roe.

Employees of shoreside seafood companies come from as close as Gloucester, Salem or Lynn or as far as Boston.

### **Communication Issues**

Communication with both local officials and federal managers/representatives was said to be "poor" to "fair" or, in one case, "nonexistent." One respondent, however, ranked communication with state managers/representatives, as "good" or "very good". Others ranked it as "fair." "They 'yes' you to death!"

Respondents often blamed the Council for poor management. While most agree that regulations are necessary, they often feel cheated by the system. For example, "they use the agenda to their own benefit. They'll deal with namby-pamby issues and they'll wait till everybody is just about dead and ready to go home and then they zing you . . . Fishermen have no confidence in them and they have no confidence in us. Communication is so poor."

Communication with friends and fellow fishermen is maintained at sea for safety's sake. Information about one's catch or favored grounds is commonly shared only with one or two close friends or relatives. Some fishermen, however, do make friends with party boat captains and they might share information.

### **Assessments**

All respondents said that fishermen and scientists "strongly disagree" on fish assessments, particularly with respect to groundfish. "The groundfish stock is cyclical. One year there are a lot of flounders, the next couple of years, the cod are back because the sand eels are back."

### **Local management practices**

Long before Amendment 5 to the groundfish plan was implemented, fishermen of Gloucester made suggestions about incremental changes that would have begun to protect the groundfish stocks. NMFS would not do anything, though, until the whole plan was completed, a process that took years.

The Massachusetts Fishermen's Partnership and the Gulf of Maine Fishermen's Alliance have designed a variety of regulations that they proposed to NMFS. "They have not been listened to." Even before the Alliance, there was a "Gloucester Plan" that had been hashed out and refined over a couple of years. It was "very far-reaching and revolutionary because it addressed habitat, stewardship of bottom, and area stakeholders. It got hacked to pieces."

### **Economic Change**

Ten years ago, respondents said that the economic condition of the industry was "average" to "excellent." "There were fish and high prices, everything to look forward to!" In the 1980's it was easier to see the effects of the good economic condition, fishermen were "showier, buying fancy cars and houses." Even for those whose economic condition was self-reported as "average," the small boat exemption to many of the regulations was a benefit.

Five years ago, it was still "excellent" to "fair."

Today, for those not constrained by the closed areas (i.e., the larger vessels), the economics are "average" to "good," but the small boats are suffering. "The auction is giving premium prices, we're finally getting paid what the fish is worth." Fewer men are being carried as crew, and fewer fish are being landed, so the prices are higher. Many vessels no longer carry insurance, either because they have obtained financing outside the usual banking channels or because they've already paid off their boat. So, for the few big boats going, the fishermen are likely to make a good living. Especially since they are able to fish far enough out to avoid the closed areas. The small vessels, though, see the situation only as "worse and worse."

Five years from now, economic conditions for the big boats will still be good, but as now, the condition is "poor" for the small boats. "There's no future for the small boats." One respondent commented that they had faith that the cod would reproduce and that the economic condition would be "average."

One respondent commented that "if a fisherman is allowed to work at all, he can earn a living."

For other sides of the business, dealers and processors, for example, the industry is considered a "frontier business with a boom or bust mentality." "There are always risks, always change, never wholly predictable, you have to be able to adapt."

### **Changes in fishing effort**

Estimates of change in effort depend principally on the individual respondent's point of view, sense of success or failure, and impact of regulations on their personal fishing

operation. Those who are severely restricted see effort in the operations that circumvent the closures as having increased. Those who used to fish in groups of 8 or 10 on distant grounds see a fall in effort that leaves only one or two vessels within hailing distance.

One respondent suggested that effort has probably doubled. "Gillnetters used to get by with 60 nets, now they need 100." Hook fishermen used to fish principally for haddock, cod, and cusk. "Cusk are residential, but they are gone now. The change started 10 years ago (around 1987)."

The most significant changes in the industry, according to some respondents, are the regulations and the increased costs of a fishing operation. The closures and changes in technology that allow "anyone" to fish top the list of changes for other respondents. However, the numbers of fishermen and vessels have severely diminished in the last decade.

### **Effects of recent management**

Pigeon Cove Fishermen's Cooperative closed their retail business as a result of the cod regulations and closed areas, though it was re-opened under independent management. Year around closures affect gillnetters and longliners. "You need hard bottom for successful hooking." The closures have eliminated access to the hard bottom for small boats. Those small boats that have tried to fish outside (further offshore) are compromising their safety.

Limiting entry has had the most impact on the fisheries for the Gloucester fleet, according to some respondents. "Mesh regulations and scaling back of the fleet have done a lot of help to the stocks. The frustration is that it never seems to stop. It's like the Russians, they throw in a 5-year plan and it fails in 2, so they throw in another one. They never put anything in and let it stay long enough to see the results."

Quotas and closures have had equally negative impact on finfishing, according to some. "Throwing away millions of pounds of cod is a mortal sin. You can't regulate the catch as though the fishermen were farming!"

Some report an increase in drinking among fishermen, less patience and a sense of frustration at not being able to provide for their families' basic needs. Fishermen become depressed when they can't fish.

### **Characteristics of local fishermen**

"A good fishermen works hard, doesn't forget his mistakes, and knows where he is going tomorrow," (i.e., he has a business plan.) A good fisherman is "intelligent, knows about fishing, is concerned about the environment and aware."

#### *Safety*

Life rafts, survival suits, Loran, GPS and EPIRG all help make fishing safer. However, as some respondents pointed out, though the gear is safer, "opportunity dictates when you go out. You don't look at the weather, you have to go when you can go (due to the regulations)."

#### *Job satisfaction*

One common view was expressed as, "Absolutely, fishermen are satisfied with their work. Anyone who is fishing today is doing it because he wants to." "Anyone that's left now is left because they love the life...it's been so difficult in recent years and financial rewards have gone down so fast that people who are going to get out have gotten out."

An opposing view, also frequently expressed was, "None are satisfied because of the regulations. They are being regulated to death...and the paperwork!"

**Fishing families**

Spouses of fishermen are working outside the home even if they have children. This is a sign of the times as much as it is an effect of the insecurity of fishing today. However, the fact that many women do have full-time jobs with benefits has allowed fishermen to survive... "Enabled them to still be doing this." "The wives have become a very big part of this, a buttress." It is also a sign of the high cost of health insurance. One aspect that seems to be different is that women who were working part-time feel compelled to work fulltime or seek a second part-time job.

One negative side of their working fulltime is that women no longer have as much time to devote to helping their spouses with fishing-related tasks (bookkeeping, arranging for replacement parts, shopping for groceries, etc.). Gloucester Fishermen's Wives Association (GFWA) used to have afternoon meetings. Now they must meet at night or on weekends and fewer members have time to volunteer. Consequently, GFWA is far less visible now at New England Fishery Management Council meetings.

At least one of the key respondents mentioned that he and his wife did not have children because of the instability of the fishing industry, "we couldn't afford them." Another fisherman who retrained as a mechanic said, "now, I can afford to get married."

Children of families involved in fishing-related businesses are not as likely to go into the business as they once were. They no longer want to work on the docks, for example, for \$10/hour when they can find cleaner, easier work for equal or even higher wages.

Community Profiles  
 Essex County, Massachusetts  
 Gloucester / North Shore sub-region

### 5.6.1.2. Rockport

#### *Background*

Reminisces of Captain Sylvanus Smith recorded in April 1913 related what he knew about Rockport: "'Sandy Bay' was a prosperous fishing center, in fact, one of the most important centers for this industry in New England. Our records of the early fisheries of old Sandy Bay are woefully incomplete. . .

History tells us that in the year 1695 John Babson received a grant of land at Straitsmouth Point to set up a fish house and an old cellar still marks the site this house was located" . . . "The point of land called Bear Skin Neck, tradition tells us, received its name from the fact that Babson killed a bear there, drying the skin upon the rocks; his weapon, it is related, was an old fish knife and it was a common expression when I was a boy, if one had an old knife, to remark, 'this is the knife with which Babson killed the bear.' (It is quite probable that this tradition is founded upon some actual happening, for there were families living upon the Neck at that time and without doubt bears often came down from the woods attracted by the smell of fish.)"

"Without doubt the fisheries were conducted or carried on from Long Cove and small boats were used which were easily pulled up on the shore out of danger from the sea."<sup>29</sup>

"In the early 1800's fishing was the mainstay of the small town of Rockport. It is said that parents would suspend a cod-line from an attic window and attached to this would be a dried codfish and here the small boys had their first lessons in hauling in fish. Many of the families had in the yards an old dory and the children would play in this, throwing out the anchor or playing at rowing, but this pastime was soon left for the greater sport of fishing for cunners and pollock from the rocks about the shore. At the age of nine or ten these boys would be in the boats with the men, preparing their simple meals and while very young would often be numbered among the crew."<sup>30</sup> In 1816, the jig hook was invented by Mr. Abraham Lurvey of Pigeon Cove.<sup>31</sup>

"While in the early fisheries very small boats were employed, with the increase in the industry larger craft were built and as these later craft were too cumbersome to be easily hauled up on the beach or upon the shore, moorings were put down in Long Cove and the boats were thus anchored."<sup>32</sup>

"In 1836, the needs of greater protection for the large increase being apparent, the national government was induced to build a breakwater. At this time there were some 12 vessels engaged in carrying fish to New York, Boston, and other places, some going as far even as to southern ports and the West Indies."

"With the building of the breakwater the fleet largely increased both in size and numbers and there were some 80 craft kept at the moorings of the cove. When the breakwater was finished, long wharves were built and a new and better class of vessels, craft of 30 to 40 tons burden, took the place of the smaller craft."

"In 1840, after completion of the breakwater, the winter fishery was engaged in many of the craft taking their fish to Boston while fish landed at Sandy Bay was often hauled over the road to Gloucester in teams, and from there to Boston. This winter fishery became quite

<sup>29</sup> <http://www.downtosea.com/1901-1925/ssmith.htm>

<sup>30</sup> <http://www.downtosea.com/1901-1925/ssmith.htm>

<sup>31</sup> <http://www.downtosea.com/1876-1900/firsttrips.htm>

<sup>32</sup> <http://www.downtosea.com/1901-1925/ssmith.htm>

prosperous and many men were employed during the winter months who had previously to the beginning of this branch of the industry had found nothing to do this season, between fall and spring."<sup>33</sup>

Winter weather-enforced idleness led to prodigious drinking. In 1856, as the temperance and women's rights movements arose, the women of Rockport under the leadership of Hannah Jumper, raided the men's alcohol reserves. In the words of Ebenezer Pool, an eyewitness, "...On finding any keg, jug, or cask having spirituous liquor in it...with their hatchets broke or otherways destroyed it..."<sup>34</sup> Today, Rockport remains a dry town.

"By 1850, Pigeon Cove was a small village with a broadly-based economy. Fishing and granite quarrying were traditional mainstays, and tourism began to flourish as the Cape Ann coast became extremely fashionable and boasted numerous hotels and resorts. Several were in or near Pigeon Cove, and by 1876 steamers from New York regularly called there. Artists have also frequented the cove, capturing its beauty and spirit on canvas. Another local industry with a profound future impact was a small blacksmith shop that would eventually become the Cape Ann Tool company."<sup>35</sup>

"The granite that gave Rockport its name is no longer quarried but the 100 years of its history lives on in the Scandinavian communities that dot the hillsides above the coastline."<sup>36</sup>

Today, the "town of Rockport is known for its art galleries, fishing community, and picturesque views. Its population of 7,000 doubles in the summer as visitors flock to the town to stroll the shops on Bearskin Neck, scuba dive off the rocky shoreline, or enjoy some of the best seafood in New England."<sup>37</sup>

Rockport's proximity to Gloucester and its fishing industry infrastructure makes it easier for Rockport to maintain a viable, if modest, fleet. Furthermore, some traditional fishing paraphernalia have been maintained for its artistic appeal. Motif #1, a fishing shack in Rockport harbor, for example, has been the subject of countless painters. In early December, the holiday season is introduced with Santa's arrival by fishing boat.

A proliferation of gift shops and such attractions as sea kayaking, whale watching, Thacher's Island lighthouses, deep-sea fishing and special lobstering cruises make Rockport much more geared to the tourist industry than the fishing industry. Nevertheless, there is a core group of fishermen who make up Pigeon Cove Fishermen's Cooperative.

### *Governance*

Rockport has a 5-member Board of Selectmen that meets weekly and an Open Town Meeting.

### *Demography*

#### Population

The population of Rockport during the 1990 Census was 7,482 people, 3,382 male and 4,100 female. This population could swell to 20,000 in the summer.<sup>38</sup>

#### Age Structure

According to the 1990 Census, 432 persons were under 5 years, 782 were 5 to 14, 3,102

<sup>33</sup> Ibid.

<sup>34</sup> <http://www.rockportusa.com/aboutrockport/hannah/hannah2.html>

<sup>35</sup> Carl Masi, personal communication, 2001.

<sup>36</sup> <http://www.footprintsofrockport.com/>

<sup>37</sup> <http://www.rockportlobster.com/rockport.shtml>

<sup>38</sup> <http://www.state.ma.us/dhcd/iprofile/252.HTM> . The numbers at this site differ slightly from numbers generated by the U.S. Census site, but are the ones cited in public information, so I've used these unless otherwise indicated.



were 15 to 44, 1,527 were 45 to 64 and 1,639 were 65 and over.

### Education

According to the Census, 1499 had a Bachelor's degree or higher, 1019 graduated from high school, 1014 had some college, and 447 had no high school diploma. Massachusetts' profile gave the statistics as: high school graduate or higher 90 percent and Bachelor's Degree of higher 34.9 percent.

### Housing

There were a total of 2475 households in 1989 and 4,202 housing units.<sup>39</sup> Of these 3,354 were occupied, and 1,955 were occupied by owners. The median year the units were built was 1939 with a median value of \$222,000.

### Racial and Ethnic Composition

Most of the people of Rockport were white (7,392) in 1989, with 17 Blacks and 8 American Indians, 27 Asian, 35 Hispanic and 3 "other."

The majority was of English-Irish-Scottish ancestry. Italians, German, French and Scandinavian (Swedish, Finnish and Danish) number in the 3-400 range (each).

### *Economic Context*

#### Income

The median household income in 1989 was \$34,195 and the per capita income was \$19,882.

#### Employment

The largest employer in Rockport is the Town of Rockport with 200 employees.

From the 1990 Census:

#### INDUSTRY

Universe: Employed persons 16 years and over

Agriculture, forestry, and fisheries (000-039)...	50
Mining (040-059)...	0
Construction (060-099)...	139
Manufacturing, nondurable goods (100-229)...	197
Manufacturing, durable goods (230-399)...	323
Transportation (400-439)...	83
Communications and other public utilities (440-499)...	73
Wholesale trade (500-579)...	105
Retail trade (580-699)...	533
Finance, insurance, and real estate (700-720)...	111
Business and repair services (721-760)...	136
Personal services (761-799)...	67
Entertainment and recreation services (800-811)...	99
Professional and related services (812-899):	
Health services (812-840)...	233
Educational services (842-860)...	281
Other professional and related services (841, 861-899)...	179
Public administration (900-939)...	89

#### OCCUPATION

Universe: Employed persons 16 years and over

Managerial and professional specialty occupations (000-202):

Executive, administrative, and managerial occupations (000-042)...	382
Professional specialty occupations (043-202)...	637
Technical, sales, and administrative support occupations (203-402):	
Technicians and related support occupations (203-242)...	132

<sup>39</sup> <http://venus.census.gov/cdrom/lookup/979317288>

Sales occupations (243-302)...	406
Administrative support occupations, including clerical (303-402)...	441
Service occupations (403-472):	
Private household occupations (403-412)...	11
Protective service occupations (413-432)...	17
Service occupations, except protective and household (433-472)...	220
Farming, forestry, and fishing occupations (473-502)...	50
Precision production, craft, and repair occupations (503-702)...	230
Operators, fabricators, and laborers (703-902):	
Machine operators, assemblers, and inspectors (703-802)...	82
Transportation and material moving occupations (803-863)...	53
Handlers, equipment cleaners, helpers, and laborers (864-902)...	37

### *Transportation and Access*

Rockport is at the tip of Cape Ann, surrounded on three sides by the Atlantic Ocean and on the fourth by Gloucester. It is about 40 miles from Boston, accessible by Route 128 and 127. Rail service is available to Boston. Nearby Beverly has a municipal airport.

### *Hospitals, schools, libraries, museums*

There is one school that includes K-12, eight churches and a former school building is being renovated for a new library.<sup>40</sup> Museums include the Rockport Art Association and the Sandy Bay Historical Society and Museums.

There is no hospital but there is one long-term care facility.

### *Fisheries Profile*

#### Community

For many years, the town of Rockport leased Pigeon Cove wharf and breakwater from its owner, Pigeon Cove Land Corporation, and then subleased the wharf to commercial fishermen and recreational boat owners. Fishermen had shanties and coolers for storing catch, bait and gear on the premises. In 1993, the Land Corporation decided to lease to a new developer instead of allowing the town to renew its lease. The developer raised rents by 800 percent, effectively denying access to commercial fishermen. The developer erected barriers that also prevented townspeople from accessing the waterfront. Fishermen, recreational boaters and other townspeople joined forces in opposition to this effort. Eventually, the developer abandoned the lease and the Land Corporation agreed to sell the Pigeon Cove wharf and breakwater to the town of Rockport.

Pigeon Cove commercial fishermen and recreational boat owners established a non-profit corporation named The Pigeon Cove Boatowners Association Inc. that agreed to purchase the wharf, breakwater, and attached buildings and structures from the Land Corporation.

The association immediately leased the breakwater and wharf to the Town of Rockport, so that the Town could be in a position of controlling, insuring, and maintaining the property and thereby qualifying for public funding to repair previous storm damage. Repairs to the breakwater, funded by FEMA, were completed during 1995, the first major investment in the property since the Army Corps of Engineers dredged the harbor in the late 1980's, when it was designated a federal anchorage.

#### Commercial fishing and fisheries-related employment

##### *Harvesting*

The 1997 federal permit files listed 46 vessels for Rockport and Pigeon Cove.

<sup>40</sup> <http://www.state.ma.us/dhcd/iprofile/252.HTM>

*Support Services***Pigeon Cove Fishermen's Co-operative**

The coop ran a store from 1996 to July 1999. A poor shrimping season, slow business, federal regulations, and the demands of running a retail store while trying to carry on as full-time fishermen, led to the store's closure. "What happened was over the last year, as the fishing restrictions kept affecting the financial stability of the co-op, we decided to reduce our expenses and focus on our core business," said Carl Masi, one of the co-founders of the coop.<sup>41</sup> The store has since been reopened by entrepreneur Bill Linn and renamed Pigeon Cove Lobster Co. The coop is still the principal supplier for the store.

**Pigeon Cove Boatowners Association**

A non-profit corporation formed by commercial fishermen and recreational boaters to purchase the wharf and breakwater, buildings and structures of Pigeon Cove formerly owned by Pigeon Cove Land Corporation.

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<sup>41</sup> <http://www.rockportlobster.com/gdt.shtml>

Community Profiles  
Essex County, Massachusetts  
Gloucester / North Shore sub-region

### 5.6.1.3. Marblehead

"Marblehead was founded in 1629 by fishermen recruited from Southeast England and the Channel Islands who relished the idea of a piece of their own land, personal freedom and a bountiful sea. Joining them were a mixed bag of dissidents from the Pilgrims, Anglicans and Puritans and a sprinkling of university graduates and entrepreneurs.

Somehow overcoming the frontier difficulties of cold, loneliness, thick forests sheltering wild animals and perhaps Indians, the first 44 families made it, incorporating the town in 1649. Determined to stay independent, they created a town government that still runs Marblehead today: Town Meeting to vote the by-laws, a Board of Selectmen and officials (elected annually) to enforce the laws, conduct town affairs and set the tax rate.

With steady, yet spirited leadership and hard work (the whole family dried and packed fish for shipment abroad), Marblehead's fame and fortune grew, so that in 1660 a Royal Agent declared in London that Marblehead was the "the greatest Town for fishing in New England."

A successful first century ended in the gloom and doom of Salem's witchcraft trials (one Marblehead woman was hanged) and general economic depression. With characteristic resiliency and at the urging of the merchant-trained minister, Marblehead obtained fresh capital and newly designed ships with greater cargo space.

Marblehead's "Golden Age of Trade" carried its captains and crews to South America, West Indies, Spain, Portugal, France, and of course, England. Led by cocky skippers, who were ready to trade with the known world, local ships transported mostly dried fish whose high quality was widely recognized. In the returning cargo were wines, fruit, clothing, tools, gold and silver.

Special orders were filled for the wives of wealthy merchants who were building homes appropriate to their status. Jeremiah Lee, Robert Hooper, Azor Orne, Honatha, Jonathan Glover, Benjamin Watson and others were buying imported furniture, rugs, wallpaper, damasks and laces. Town craftsmen were also producing handsome pieces in gold, silver and wood.

Prosperity extended to sailors and fishermen whose houses were renovated or even moved. The taverns were doing a good business, for if the news wasn't of possible war with the French, the talk was of pirates. They had harassed the coast for decades, capturing valuable cargo and occasionally abducting (or persuading) young sailors. Larger, armed ships and regular hangings in Boston reduced that hazard.

Another not-so-rosy side of the period was a series of English-French battle for Canada. Each time the colonies supplied men and ships, and each time they won, the victory was bargained away. Disillusionment and distrust grew as England turned to crushing colonial independent unruliness.

Every repressive Act of England fanned the ire of Marblehead. Conservatives (Tories), fearing trade and business reprisals, tried to squelch an independence movement, but Town Meeting spoke for most residents of Marblehead: "...We desire to use these blessings of Liberty with Thoughtfulness and Prudence and to defend them with intrepidity and steadiness." Marblehead, which had been rocking the Cradle of Liberty for almost 150 years now, totally committed itself to winning independence. It played a major role in the war at great loss to the town in men, ships and fishing business.

It was at the Town House that the Declaration of Independence was read. It was signed by the town's representative, Elbridge Gerry. Then Gerry accepted the challenge of General Washington to commandeer ships to attack British supply ships. Marblehead patriots quickly renamed and armed their ships and sent them to seas as "...ye navy of the United Colonies", thus laying claim to the 'Birthplace of the U.S. Navy.'

Marbleheaders' nautical prowess twice rescued Washington's campaign: first at Long Island where, using every kind of craft, the mariners during the night and fog moved the entire army to mainland safely; later, on that famous Christmas night, when Washington needed a victory so badly, Marblehead mariners carried the Commander and his unit across the Delaware River to win the surprise battle at Trenton. Throughout the America Revolution, General John Glover and his men fought for liberty. No wonder President Washington came to Marblehead to thank the soldiers, sailors and townspeople for their decisive support. He promised to help rebuild the fisheries.

The fishing and shipping industries tried to recover, but lost out to larger ports, the War of 1812 and, finally, to the devastating 1846 hurricanes that caught the fleet on the Grand Banks.<sup>42</sup> Thirteen vessels with 65 men were lost in September. With a population of only 7,000, fishing virtually died out and the town turned to shoemaking.

Marblehead, today is one of the East Coast's premier sailing centers. The Old Town remains picturesque with the 18th- and 19th-century homes of fishermen, merchants, and artisans. There is so much wealth in the town, though, that it is difficult to live here on a modest income.

### *Governance*

Town meeting, Board of Selectmen

### *Demography*

#### Population

In 1989 the population was 19,971 including 9,407 males and 10,564 females.

#### Age Structure

There were 4491 children (below age 21), 2990 seniors and 12,490 adults (21 to 65 years) counted in the 1990 Census.

#### Education

The population of Marblehead is well educated: 7,843 have a college degree or higher. Another 6,120 have at least a high school diploma. Only 639 had not completed high school.

#### Housing

There were 8,736 housing units in 1989, 8225 of these were occupied. Owners occupied 5,908 and renters 2317. The median age of the housing units was 1942 and the median value of the owner occupied housing was \$254,700.

#### Racial and Ethnic Composition

The majority of the population in 1989 was white (19,749) with 104 Blacks, 93 Asian and 25 "other." English and Irish ancestry predominates with German, Russian and Italian numbering over 1000 individuals each.

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<sup>42</sup> <http://www.marblehead.com/commun/history/>

## *Economic Context*

### Income

The 8,227 households had a median income of 53,333 in 1989. Per capita income was 30,615.

### Employment

From the 1990 Census:

#### INDUSTRY

Universe: Employed persons 16 years and over

Agriculture, forestry, and fisheries (000-039)...	188
Mining (040-059)...	23
Construction (060-099)...	510
Manufacturing, nondurable goods (100-229)...	598
Manufacturing, durable goods (230-399)...	893
Transportation (400-439)...	556
Communications and other public utilities (440-499)...	216
Wholesale trade (500-579)...	490
Retail trade (580-699)...	1495
Finance, insurance, and real estate (700-720)...	1335
Business and repair services (721-760)...	588
Personal services (761-799)...	355
Entertainment and recreation services (800-811)...	264
Professional and related services (812-899):	
Health services (812-840)...	1172
Educational services (842-860)...	859
Other professional and related services (841, 861-899)...	1402
Public administration (900-939)...	375

#### OCCUPATION

Universe: Employed persons 16 years and over

Managerial and professional specialty occupations (000-202):

Executive, administrative, and managerial occupations (000-042)....	2619
Professional specialty occupations (043-202)...	2765
Technical, sales, and administrative support occupations (203-402):	
Technicians and related support occupations (203-242)...	386
Sales occupations (243-302)...	1928
Administrative support occupations, including clerical (303-402)...	1282
Service occupations (403-472):	
Private household occupations (403-412)...	64
Protective service occupations (413-432)...	154
Service occupations, except protective and household (433-472)...	894
Farming, forestry, and fishing occupations (473-502)...	189
Precision production, craft, and repair occupations (503-702)...	647
Operators, fabricators, and laborers (703-902):	
Machine operators, assemblers, and inspectors (703-802)...	145
Transportation and material moving occupations (803-863)...	129
Handlers, equipment cleaners, helpers, and laborers (864-902)...	117

### *Transportation and Access*

Principal highways are State Routes 114 and 129. Rail service to Boston is available from Salem or Swampscott Stations.

### *Hospitals, schools, libraries*

Five elementary schools (only 3 are K-5), a middle school and high school. North Shore Regional Vocational School and Essex Agricultural and Technical Institute also serve the town.

Abbot Public Library  
Marblehead Historical Society

No hospitals, but two long-term care facilities.

### *Fisheries Profile*

#### Community

Marblehead is no longer a fishing-dependent community. While there are a few fishermen who live here, the pool is small and it is difficult for the remaining fishermen to find local crew. Fortunately, Gloucester is nearby and has a wealth of services available.

#### Commercial fishing and fisheries-related employment

##### *Harvesting structure*

There are about 28 fishermen in Marblehead both according to individual respondents' estimates and the 1997 federal permit file. These include one hooker, 4 or 5 gillnetters, 22 lobstermen who fish out of Marblehead. There is some urchining in season. One trap is set on Cat Island by a fisherman from Manchester. Fifteen years ago there were 20 percent more.

##### *Processing structure*

There is no processing currently.

##### *Support Services*

There are two marine railways, though these specialize in sailing yachts.

##### *Species, Seasonality*

Groundfishing, lobstering, sea urchining, some diving for scallops.

Landed species include:

Groundfish: cod, cusk, dabs, winter flounder, yellowtail flounder, pollock, hake, halibut and grey sole.

Crustaceans: lobster

HMS: tuna

Other: striped bass, dogfish, sea urchin, monkfish, bluefish, scallops, slime eels, sometimes menhaden.

##### *Form of ownership (e.g., owner/operator; corporation)*

Most of the vessels are owner-operated.

#### Recreational fishing and employment

There is quite a bit of recreational fishing, though the open harbor has prevented the development of marinas. (Vessels use moorings.)

## **Perceptions of the Fishing Community<sup>43</sup>**

### **Importance of fishing to the community**

Fishing is not really important to the community of Marblehead because money is derived from so many other sources, though residents are curious about the industry. Industry members are proud of what they do and proud of their fishing heritage. The 1/4 million pounds of lobsters landed in Marblehead annually is a benefit to the town, which also benefits from the purchase of fuel, repairs (at the boat yards) and clothes, as well as the availability of fresh product for consumers.

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<sup>43</sup> Based on key informant interviews

**Boundaries**

Capital contacts can be divided up into those encompassing social capital (e.g., visit friends, go for recreation, go for vacation, visit relatives, socialize, go to church); economic (e.g., sell fish, offload fish, buy fishing gear, haul out for boat repairs, go to the bank, go shopping), and human (e.g., go to school, go for childcare, go for health care, go for retraining).

The fishing industry of Marblehead has the most contact with Gloucester.

Sell Fish	Gloucester
Offload Fish	Gloucester/Marblehead
Buy Fishing Gear	Gloucester
Buy Ice	Gloucester
Buy Fuel/ Oil	Gloucester/Marblehead
Haul out Boat Repairs	Marblehead
Book Keeping	Self
Banking	Marblehead
Shopping	Marblehead
Go to Church	Marblehead
Got to School	Marblehead
Go for Health Care	Marblehead/Salem
Go for Childcare	Marblehead/Salem
Go for Retraining	Gloucester
Visit Relatives	All over U.S.
Visit Friends	Northshore
Go for Vacation	All over
Go for Recreation	Northshore
Socialize	Marblehead

A truck comes from Salem on a regular basis to buy lobsters.

Technology is affecting the patterns of contact. With computers and the Internet, as well as cell phones, fishing industry participants are less isolated, even while working.

**Communication Issues**

Communication with local and state fishery managers or representatives was rated as “excellent.” Communication with federal managers or representatives, however, was rated as “poor” or below.

**Assessments**

Fishermen and scientists strongly disagree on assessments. “Scientists are not always getting good information.”

**Local management practices**

Local fishermen are adamant about not taking “shorts” or v-notched lobsters. They also express considerable concern about the effects of chlorine and pollution on productivity. “Maybe the water is too clean?”

**Economic Change**

Ten years ago haddock were declining, so prices increased and fishermen made more money. They became resilient, had to work harder but did well. The economic condition of the industry was rated as “good.”

Five years ago it was also considered “good.” Today (1999) the Gulf of Maine closures are affecting the day boats where most groundfishermen were, so it is worse for them (rated “poor” to “average”), but lobstering is “good.”



Five years from now, respondents hoped things would be better, but expressed some distrust of the federal government. If the closed areas remain closed, the economic condition of the finfish fishery will not improve.

#### **Changes in fishing effort**

Most fishermen have switched to lobstering the majority of the year. When groundfishing, fishermen have to avoid certain species. However, the fact that haddock, which almost disappeared 10 years ago, are now plentiful shows that regulations work, according to one key respondent.

Technology worldwide has affected the industry. Radar in the 1960's, now fish finders, synthetic nets have all affected fishing.

#### **Effects of recent management**

The closures killed the hook fishermen. One respondent noted that the hook fishermen should have been encouraged, as their gear is the least destructive.

“Government is in your face.”

#### **Characteristics of local fishermen**

A good fisherman has to work hard, have a positive outlook, not letting weather bother them, willing to persevere, not get discouraged.

#### *Safety*

The safety regulations have made fishing safer.

#### *Job satisfaction*

The fishermen who remain in Marblehead stay in fishing because they like it, they like the excitement.

#### **Fishing families**

Spouses work, though this is not entirely due to changes in the industry. The children of fishermen are more frequently being college educated and choosing other industries for their careers.

Sub-region Profile  
Rockingham County

## 5.7. New Hampshire Seacoast

### 5.7.1. Rockingham County

Along with the Connecticut Seacoast and Boston/South Shore, the New Hampshire Sub-Region is grouped among the lowest fishing dependent regions. New Hampshire Seacoast ranks ninth out of eleven for the three dependency ratios (below). The low overall economic dependency on fishing of the region is due to its intense coastal development and diversified economic activity. New Hampshire presents another case of significant fishing enclaves that have been surrounded by developing areas of gentrification. In terms of gentrification, Portsmouth ranks with the most highly gentrified communities of Kennebunkport and Plymouth, Massachusetts.

Over the last twenty years, the dramatically scenic character of the coast and beaches has attracted considerable tourist and recreational development. Portsmouth is also rich in historical infrastructure, celebrated in dockside monuments, historical buildings, and waterfront hotels and restaurants. To the south, summer homes mix with scenic beaches, shoreside restaurants and hotels, with a major concentration behind the Hampton beach and sea wall. Contributing to the move towards gentrification is New Hampshire seacoast's reputation as an income tax shelter.<sup>1</sup> Very high-end condominiums and homes along the coast are the legal residences of wealthy individuals who do not necessarily work in New Hampshire. Portsmouth, with its wide and deep harbor, is the primary coastal outlet for the state, where cargo vessels are offloaded in exchange for woodland products from the inland forests of New Hampshire and Vermont. Another major component of the port's total capital is the Portsmouth Naval Shipyard.

Because of the rich diversity in tourism, both historical and contemporary, and port economic activities and industry, fishing is just one component in the mix. The persistence of the fishing culture, and the support afforded the fishing industry through a state fishing pier in Portsmouth and the resources contributed by the Seabrook Nuclear facility to the fishing pier and cooperative in Hampton/Seabrook, allows the total capital of the industry to persist despite development of significant alternative total capital components.

The persistence of the industry is also a tribute to the self-selection of those dedicated to the fishing lifestyle. At the dock in Hampton, a key respondent confirmed the replication of the human capital of fishing, stating that most locals were "*born here and born into fishing*". He also expounded on all of the characteristics of the fishing value-set, a value set that is predicated on the self-selection process and indicators of dedication to the fishing lifestyle, mixed with a sense of conservation because of the declines and restrictions on fish stocks and allowable catch effort:

*"I am part of a younger generation with attitudes towards conservation. We younger generation are not opposed to conservation. We're not like the older generation - they just wanted to catch everything. What we earn today with our hands is a good honest living, but we don't want to over fish it all— it's hard to find anyone who is not for restrictions on catch.... For me, fishing allows me to be independent and set my own hours... you're going to make as much money as the work you put into it...however, these days we are working harder but earning less money. This makes it tough on families—I know of only one guy here out of about 70 guys on the docks whose wife can afford to stay home and take care of the kids. There didn't used to be any childcare centers in Hampton, but now there are three and a new one is about to open.... To be successful at it (fishing), you can't mind spending a lot of time away from home ... For me, limits on landings (of groundfish) means I must spend five months a year down in North Carolina dogfish fishing on someone else's boat to make it through the year...this doesn't make sense, because we are*

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<sup>1</sup> Key respondent interview.

*catching more cod now than has been seen around here in over ten years—you just can't get away from them—they are everywhere."*

### *Fisheries Dependency*

According to our dependency indicators, the New Hampshire coast is among the least dependent (rank of nine out of eleven) regions. Yet, upon examination of the ports of Portsmouth and Hampton/Seabrook, we find there is a vibrant commercial fishing presence, bolstered by capital flow connections of the smaller regional ports (e.g. Rye, Hampton/Seabrook) with Portsmouth. Portsmouth, in turn, is linked to the larger regional network of fish brokers and fish auctions from New York City to Portland, Maine. Both Portsmouth and Hampton/Seabrook have experienced a development surge in the "beach culture" along with the rest of the New Hampshire coast. As a consequence, the percentage of their contribution to the overall total capital flows in the region has diminished. This has not, however, drastically affected their productivity as fishing enclaves. Their linkages with regional networks have compensated for the diminished economic status in their own particular spaces and places. Moreover, they continue to fill the critical role of providing fresh seafood to meet the increasing demand of local restaurants and regional markets for quality products.

Shafmaster<sup>2</sup> Fleet Services maintains facilities at Little Bay in Newington. Little Bay Fish and Lobster Company advertises 20 years' experience in air shipping high quality live lobsters.<sup>3</sup> Seven vessels of 75 feet each make week long trips (departing Sunday, returning Saturday) to fish for lobster for the company. Besides the tanks for lobsters and crabs, their facility has freezer space and manufactures its own electricity.<sup>4</sup> In March 1999, at the urging of New Hampshire's legislative delegation (John Sununu and Judd Gregg), a bill was introduced to the U.S. Congress that would waive maritime licensing regulations in order to allow Shafmaster to buy and operate three Canadian-built stern trawlers for use in the herring and mackerel fisheries. It was anticipated that repairs to the vessels would generate \$1.5 million for U.S. shipyards, that 20 to 25 new jobs would be created with a payroll of \$1 million and that processing the harvest would result in another \$500,000 to the local economy.<sup>5</sup>

In the 1850's a quarter of Rye's population was dependent upon fishing, but in the latter part of the 19<sup>th</sup> century, its economy gradually became increasingly reliant on the tourist industry.<sup>6</sup> By the 1960's there was little finishing effort, most fishermen were engaged in lobstering. There was a surge of interest in fishing after the passage of the Magnuson Act (1976) when some of the lobster fishermen turned to gillnetting, but restrictions have diminished their numbers. Today, Rye has 24 or more boats, 8-10 groundfish and over 12 lobster boats that use the commercial pier. Their catches (including shrimp) are usually unloaded and trucked to the co-op in Portsmouth. Rye's significance as a fishing port is heightened due to its proximity to fertile fishing grounds. It has the "shortest run to significant fishing grounds" compared to other ports in the region. New Hampshire Commercial Fishermen's Association is also based in Rye.

All the New Hampshire ports benefit from access to rich grounds. The Massachusetts Bay-Casco Bay area is a unique and very productive ecosystem. Late winter and spring spawning activities aggregate fish sequentially along the coast. The New Hampshire vessels tend to be moderate in size, accustomed to day trips and the use of long soaking gillnets. It was the New Hampshire fishermen who encouraged experimental work on "pingers" to scare away harbor porpoise so that they could continue to fish using gillnets.

<sup>2</sup> Shafmaster also owns the leather company Leather Loft.

<sup>3</sup> <http://bizbb.com/OpenBB/offer/4930/>

<sup>4</sup> Key respondent interview.

<sup>5</sup> <http://seacoastonline/999news/>

<sup>6</sup> Contas et. al 1980.

Community Profiles  
Rockingham County  
New Hampshire Seacoast sub-region

### 5.7.1.1. Hampton and Seabrook

#### *Background*

“Hampton mirrors Rockingham County (New Hampshire’s second most populated and second fastest growing county) in terms of its growth and development. The majority of residential development in town is located just north of the Hampton marshes, approximately 1.5 miles inland from the coast. At the southern town boundary is the Hampton Harbor, an inlet formed by the confluence of the Hampton and Blackwater Rivers.”

Hampton Beach and Seabrook are located just north of the Massachusetts border on route 1A, near Salisbury, Massachusetts. Although Hampton and Seabrook are separated by a bridge, and about a mile apart, they are functionally one community, and will be treated as a unit for this case description. The boundary area between the towns is small, consisting of a single bridge over an inlet connecting Hampton Harbor with the Gulf of Maine. Hampton Harbor lies inside a three-mile long lagoon. It provides anchorage for both recreational and commercial fishing boats. The harbor is bordered by a thin spit of beach, and has a shallow entrance much like Chatham Harbor, with shifting sandbars and silting. As in Chatham, the narrow and shallow harbor entrance has kept size of vessels down.

New Hampshire’s coast is one the most picturesque in all of New England, and coastal tourism has historically been a major economic component of these seaside communities. Today, as a “summer vacation community, Hampton attracts regional, national and international guests. The year-round population of over 13,100 expands to an estimated 150,00 individuals during the summer months – ‘on a sunny weekend’.”<sup>7</sup> Hampton presents a solid seaside front of restaurants, upscale gift shops, hotels, clubs and bars, and seaside condominiums. It also exhibits “world-class” traffic jams. This “beach culture” (Acheson 1978) extends uninterrupted south into Massachusetts, and is replaced north of Hampton by upscale seaside homes bordering rocky inlets and gravel beaches. Although some shops and restaurants can be found in the adjoining blocks off the seaside, the main attraction is the seaside strip. Hampton is also a permanent residence to many that work in Boston and elsewhere.

Acheson et. al (1978) note the incursion of gentrification and development as an engulfing process around the long-standing fishing operations in the area. However, tourist development in nearby Hampton has increased tremendously over the last twenty years. During the summer peak, fishermen and their families are lost in a swarm of thousands of daily visitors taking advantage of the nearby diversions including beach facilities, restaurants, hotels, bars, and nightclubs. Thus, the overall percent contribution of the fishing sector to local total capital flows has declined dramatically over twenty years, but the scale of fishing has remained essentially constant, although it is seriously threatened by recent restrictions on catch effort. Moreover, even though the contribution of fishing to the local economy has declined, and no one could describe tourist-driven Hampton as a “fishing dependent community”, the infrastructure and social yield of fishing has been sustained.

#### *Governance*

Hampton has a Board of Selectmen (5 individuals) and a town manager.

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<sup>7</sup> [http://www.fema.gov/impact/cities/im\\_nh06.htm](http://www.fema.gov/impact/cities/im_nh06.htm)

## *Demography*

### Population

According to the 1990 Census, Hampton had a population of 7989; 3,812 were male and 4177 female.<sup>8</sup> The Hampton School District had a population of 12,273.<sup>9</sup>

### Age Structure

Of the population of 7989 in Hampton, children 11 and under with 1118 individuals and seniors (65 and older) with 1132 individuals are about equal in size. There were about 621 teenagers 12-17 years old, and 5118 individuals who were 18-64 years old.

### Education

Of individuals 25 years and older, 573 had less than a high school diploma. High school diplomas were attained by 1491. Fifteen hundred, ninety had some college (including Associate's Degree). Bachelor's degrees were attained by 1299 and a Graduate degree by 536.

Most of the fishermen have at least a high school degree and a handful are college graduates.<sup>10</sup>

### Housing

There were 8,602 housing units in the school district; 3587 in Hampton. Of the 3587, 3132 were occupied, 455 vacant. Median housing value in 1989 was \$161,233 in the school district; 159,300 in Hampton. The median year the structures were built was 1966.

### Racial and Ethnic Composition

In the school district, 97.61 percent of the population was white in 1989, 2.04 percent was black, and 3.7 percent Hispanic.

## *Economic Context*

### Income

Median household income was \$40,929 in the Hampton School District, \$44,620 in Hampton. Per capita income was \$18,371 in the school district, \$18,881 in Hampton.

### Employment

The largest employers in Hampton include Foss Manufacturing, Unitil, and Wheelabrator Technologies. At the time of the 1990 Census, 2929 individuals worked in New Hampshire, while 1268 (43 percent) worked outside the state.

The University of New Hampshire has a campus in nearby Durham.

The Census counted 37 individuals in the industry category of agriculture, forestry and fisheries, and 26 in farming, forestry, and fishing occupations. On the other hand, the Equal Employment Opportunity Data for Rockingham County (that includes Portsmouth) counted 24 fishing captains and 130 fishermen (including 13 females) in 1989.<sup>11</sup>

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<sup>8</sup> <http://venus.census.gov/cdrom/lookup/973470235>

<sup>9</sup> <http://govinfo.kerr.orst.edu/>

<sup>10</sup> Based on key informant interviews

<sup>11</sup> <http://sasquatch.library.orst.edu/>

**INDUSTRY<sup>12</sup>**

Universe: Employed persons 16 years and over	
<b>Agriculture, forestry, and fisheries (000-039)</b>	<b>37</b>
Mining (040-059).	9
Construction (060-099).	284
Manufacturing, nondurable goods (100-229)....	271
Manufacturing, durable goods (230-399)..	488
Transportation (400-439)	213
Communications and other public utilities (440-499)	142
Wholesale trade (500-579)	111
Retail trade (580-699)	754
Finance, insurance, and real estate (700-720)	410
Business and repair services (721-760)	
Personal services (761-799)	197
Entertainment and recreation services (800-811)	45
Professional and related services (812-899):	
Health services (812-840)	261
Educational services (842-860)	412
Other professional and related services (841, 861-899)	334
Public administration (900-939)	137

**OCCUPATION**

Universe: Employed persons 16 years and over	
Managerial and professional specialty occupations (000-202):	
Executive, administrative, and managerial occupations (000-042)	768
Professional specialty occupations (043-202)	700
Technical, sales, and administrative support occupations (203-402):	
Technicians and related support occupations (203-242)	126
Sales occupations (243-302)	683
Administrative support occupations, including clerical (303-402)	640
Service occupations (403-472):	
Private household occupations (403-412)	0
Protective service occupations (413-432)	63
Service occupations, except protective and household (433-472)	478
<b>Farming, forestry, and fishing occupations (473-502)</b>	<b>26</b>
Precision production, craft, and repair occupations (503-702)	341
Operators, fabricators, and laborers (703-902):	
Machine operators, assemblers, and inspectors (703-802)	243
Transportation and material moving occupations (803-863)	105
Handlers, equipment cleaners, helpers, and laborers (864-902)	88

*Transportation and Access*

Hampton is 10 miles south of Portsmouth on Interstate 95. Hampton Beach is a couple of miles east of Hampton on state route 101.

*Fisheries Profile*Community

Despite its reputation as a tourist destination, Hampton Beach fulfills the definition of a fishing community on the basis of central place theory. Fish are legally sold ex-vessel to a dealer, processor or the public; fishing support services are provided; there are public facilities providing dockage; fishing people satisfy their daily and weekly social and/or economic needs here, and

<sup>12</sup> <http://venus.census.gov/cdrom/lookup/973470235>

some fishermen and their representatives participate in fisheries resource management.

### Commercial fishing and fisheries-related employment

#### *Harvesting structure*

In 1978, there were 35 lobster boats working out of Hampton Harbor, from 16 to 21 feet in length, and a dozen vessels devoted to a mix of gillnetting, bottom trawling, and two modified for herring fishing with mid-water purse seines or with dredges to drag for sea urchins. Twenty years later, the number of vessels has remained essentially unchanged, although 6 out of 10 draggers are inactive because of closures and other restrictions on catch. Overall, fifty commercial fishing vessels, both the operative and idle, still grace the port facility near Seabrook. These include 36 lobster boats, 4 gillnetters, and the ten draggers. Other changes include declines in regular (full time, experienced) crew and crew size per vessel, with many fishermen going it alone, forced to migrate seasonally to other areas to fish species such as monkfish and dogfish.

#### *Processing/marketing structure*

Vital regional facilities can become vulnerable when inadequate product is available from the production sector. For example, Yankee Fishermen's Cooperative is the landing site and central wholesaling facility for the small local fleet. Since the cooperative's income is based on fees tied to pounds landed, when cod landings were restricted to 30 pounds per day per vessel (about three or four fish) the facility suffered. However, the rise in daily allowable catch from 30 to 100 pounds and then to 400 pounds has made a critical difference in the ability of the co-op to maintain sufficient product flow and for fishermen to make a modest profit.

As with the small fleet it serves, the coop's ability to diversify has kept it in business. For example, in 1999, a decent shrimp season was helpful, though not entirely satisfactory since the fuel prices jumped from 83 cents to \$1.83. The booming lobster business was the saving grace of the year. In other years, tuna provides the key to the year's profitability. During tuna season, the Coop holds a daily auction that is attended by 6 to 10 buyers, including several supplying the Japanese market.

An interesting article on the global tuna market mentions Seabrook and comments on the effect of "cultural capital" on the price of tuna. "Japanese cultural control of sushi remains unquestioned. Japanese buyers and 'tuna techs' sent from Tsukiji to work seasonally on the docks of New England laboriously instruct foreign fishermen on the proper techniques for catching, handling, and packing tuna for export. A bluefin tuna must approximate the appropriate *kata*, or "ideal form," of color, texture, fat content, body shape, and so forth, all prescribed by Japanese specifications."<sup>13</sup>

Three years ago (1997), the Newburyport Co-op merged with Yankee. Yankee Fishermen's Coop now has 59 members, but only two full-time managers. They must rely on help from members when the vessels are active to get the boats unloaded, the catch sorted into totes, weighed, and fish packed with ice or lobsters placed in tanks. Herring, supplied by a distributor out of Kittery, is sold as bait for lobstering.

As for the future, "like everyone else, the Co-op is looking at the potential for handling live fin fish and the potential for aquaculture."

#### *Support Services*

Besides the local fishing co-op, Hampton Harbor Boat Yard and Boat Works allow fishermen to handle minor repairs locally. Other local facilities include ice supply, diesel and oil from the co-op,

<sup>13</sup> Theodore C. Bestor. 2000. "How Sushi went Global" in *Foreign Policy*, November 2000. See [http://www.foreignpolicy.com/issue\\_novdec\\_2000/essay-bestor.html](http://www.foreignpolicy.com/issue_novdec_2000/essay-bestor.html)

eight slips at the main dock for commercial use with other vessels moored in the small harbor. Six lobster retailers cater to weekend tourists and local restaurants. There are two local bait houses, and two retailers of finfish. A local netmaker repairs groundfish gillnets, but for fishing gear and supplies, fishermen travel to nearby Portsmouth.

*Employment (year-around and seasonal)*<sup>14</sup>

An estimate of the number of local commercial fishermen is 70. When there were severe restrictions on groundfish, fishermen are forced to work elsewhere to survive, and mostly did so from late November to early May. Of the fifty to sixty households identified as directly dependent on the fishery, more than 20 (about 40%) sought seasonal work outside of the community. As some of the restrictions eased slightly and alternative species became available, many of the fishermen returned home to work full-time. The difference, however, from the past is that many men now work alone whereas, prior to the restrictions, almost everyone had at least one crewmember.

Indirect reliance on the fishing industry is difficult to estimate, but the suppliers of gear (chandlery), fuel, and food do feel the impacts when fishing is constrained.

*Sales/revenue*

Most of the product of the Coop is sold regionally to buyers in Boston, Gloucester and Saugus.

*Species, Seasonality*

The groundfish and lobster commercial season stretches from May through early November. The winter fishery is shrimp and some lobstering. One phenomenon encountered elsewhere in the fishery is a constant switching of effort. Before recent restrictions, draggers targeting groundfish might switch to dogfish, and gillnetters would also do lobstering. As one respondent described it, “people have had to diversify to make ends meet, and will target the peaks of each fishery—do a little bit of everything to optimize cash flow.”

Landed species include:

Groundfish: cod, blackback flounder, fluke, weakfish, pollock, haddock, grey sole

Small mesh: whiting, shrimp, squid

Pelagics: herring

Crustaceans: crab, lobster

Highly migratory species: tuna

Others: striped bass, dogfish, monkfish, bluefish, scallops, slime eels.

*Form of ownership (e.g., owner/operator; corporation)*

Most of the vessels are owner-operated.

Recreational fishing and tourist-related employment

Although recreational fishing is not a dominant activity, there is one marina—a boat club—upriver from the commercial docks, and there are three bait and tackle dealers for recreational fishing enthusiasts. Six bars and seven seaside hotels and resorts cater to weekend tourists of all interests, including beachcombers, those partaking of local whale watching or eating at the numerous seafood restaurants. Tourists can also go out on one of eleven charter boats, for either tuna fish or codfish on nearby Jeffrey’s Ledge.

Both Rye and Hampton’s party boats serve a valuable function for the commercial harvesting sector. Perhaps as many as 10 to 15 percent of the commercial vessel owner-operators got their start on party boats. In addition to the 3 or 4 party boats in Rye, there are also a number of small charter boats termed “6 packs.”

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<sup>14</sup> Based on key informant interviews



Cultural role of fishing

There are no museums or traditional cultural events in the area. The closest approximation is an annual seafood festival, but there are no fishermen involved in the festival.

*Ethnicity in the fisheries*

According to the Equal Employment Opportunity data for Rockingham County, all fishermen are white. The ancestry of individuals in Hampton is predominately English, Italian, German and French. An informant noted that there are also a few Greeks in the harvesting sector.

*Socializing*

Everyone has a favorite coffee shop, but the usual informal meeting place is the Coop.

Fishing related organizations and their roles in the community and fishery*Commercial fishing associations*

- Yankee Fishermen's Cooperative
- New Hampshire Commercial Fishermen's Association—"Monitors, participates and contributes to concerns and issues regarding the commercial fishing industry of New Hampshire. Disseminates information amongst its members and acts in a proactive manner on behalf of the commercial fishing industry. Conducts an annual beach clean up of lobster gear. Assists in transition of fishing industry due to changing regulatory action."<sup>15</sup>

*International Trade*

Japanese buyers often bid on the tuna that comes into the Coop.

Fishing-related programs and services*Extension programs*

The Maine/New Hampshire Sea Grant Program has offices in Durham and in Rockingham County. University of New Hampshire has various projects from time to time that relate to the fishing industry. Right now someone from the university is collecting mussels, another is considering an aquaculture start-up.

*Retraining*

Those who could diversify, "stuck it [fishing] out." Others stayed fishing because that is all they know how to do or they couldn't imagine doing anything else. Others who thought they might be able to switch out did seek retraining. About a half dozen of the fishermen ranging in age from mid-20 to 50 years old who could prove "hardship" took advantage of the training programs to improve skills in welding, mechanic, etc. Most, however, returned to fishing after having tried shoreside jobs.

*Coast Guard*

The closest Coast Guard presence is on the Merrimack River in Newburyport. Another station is in Portsmouth.

## **Perceptions of the Fishing Community<sup>16</sup>**

Importance of fishing to the community

Despite the low number of commercial fishermen compared to the overall populace, key respondents ranked the importance of fishing to the community as "important" (4<sup>th</sup> out of 5), with the rationale linked to the importance of fresh seafood to local restaurants. However, after being landed in the co-op, much of the seafood is brokered out to other markets such as Boston, Gloucester and Saugus, there to be processed or shipped regionally, nationally, and internationally.

<sup>15</sup> <http://www.state.nh.us/coastal/activity/g8.htm>

<sup>16</sup> Based on key informant interviews

The town is somewhat supportive of the fishing industry. The town owns the land the Coop is on.

### **Boundaries**

Outside of Hampton/Seabrook, fishermen and their families have the most contact with Portsmouth. Their local community is the nexus of their social, cultural, and economic lives, and virtually all of their local needs and activities are just that – local: *“There is a real sense of community here... Even though there are thousands of outsiders here in the summer, we mostly stick together and do things with the people we know and work with.”*

The only exceptions to contacts and activities are for vacations, which are taken in the White Mountains, and buying fishing gear, which is done in nearby Portsmouth.

### **For Hampton/Seabrook, where do people go to do the following things?**

Sell Fish	Yankee Co-Op
Offload Fish	Yankee Co-Op
Buy Fishing Gear	Portsmouth
Buy Ice	Yankee Co-Op
Buy Fuel/ Oil	Yankee Co-Op
Haul out Boat Repairs	Hampton Harbor Marina
Book Keeping	Hampton
Banking	Hampton
Shopping	Hampton
Go to church	Hampton
Got to school	Hampton
Go for Health Care	Hampton
Go for Childcare	Hampton
Visit Relatives	Hampton
Visit Friends	Hampton
Go for Vacation	White Mountains, NH; Florida
Go for Recreation	Hampton
Socialize	Hampton

### **Communication Issues**

As with many areas lacking regular contact with management, Hampton/Seabrook fishermen feel under-represented in the management process, and chaff at regulations they see as unfair when they do not reflect the perceived fishing conditions they encounter in trips to the grounds. When asked, on a one to five scale, “how good is communication with fishery managers?” local management received a “good,” state managers a “good,” but federal management a “poor.”

### **Assessments**

The perception is that federal managers are poorly informed about the seasonal fluctuations of fish populations in the area, and that catch regulations such as Area I closures and quotas are based on poor and untimely counts. Nevertheless, local fishermen suggest that conservation limits are good because they preserve the fishery year-to-year, but they believe that regulations must better reflect the environmental realities encountered by fishermen. *“The best scientists are the fishermen, because they are always making observations.”*

### **Local management practices**

The New Hampshire Commercial Fishermen’s Association was active in the effort to design rolling closures.

### **Economic Change**

The general perception on the economic condition of the fishery over time is seen as driven by (1) the perceived health of commercial fishery stocks and (2) the severity of fishery regulations. Ten years ago, the perception was that the economic conditions were "good," with plenty of fish to catch and few restrictions on landings. Five years ago, the rating dropped to "fair," with seasonal work targeting monkfish and dogfish to the south. Today, fishing is rated as "good," with plenty of fish around, and a consensus that they're increasing dramatically, but with the caveat that regulations are too restrictive and need to catch up with the actual availability of mature fish.

For example, there are codfish now in areas where they never before were, and many thousands of pounds of fish are reportedly dumped overboard when catches regularly exceed daily quotas. This wasteful practice is hailed with the sentiment: *"let us keep what we catch,"* meaning if a catch quota is exceeded on any one haul, then fishing for the day should stop and the catch landed "as is" without any discard. Moreover, fishermen see an improvement to "excellent" in five years as the perceived abundance of fish cohorts translates into an even larger harvestable biomass.

### **Changes in fishing effort**

There is much less groundfishing currently, increase in shrimping to the extent allowed and a boom in lobstering.

### **Effects of recent management**

"You get a couple of steps ahead and then get cut back!"

### **Characteristics of local fishermen**

Common sense and a drive to work when others can't or won't are characteristics of a good fisherman. Some fishermen simply have a "nose for fish." It is also considered essential that fishermen take care of their equipment. If they don't, no matter how hard they fish, they won't do well.

#### *Safety*

Fishing is more dangerous right now than in the past because of the economic necessity of limiting or eliminating crews.

#### *Job satisfaction*

"We'd all like to be Donald Trump!" But, most of the fishermen are "good guys earning their living." Like any business, there are always a few bad apples. Most people fishing, however, are "doing what they want to do," it's hard work, but satisfying.

### **Fishing families**

Costs have skyrocketed; so more spouses are working than in the past. This is due partially to the change in the economics of fishing, but also partially due to "the times."

Many of the fishermen out of Hampton/Seabrook have or had brothers, uncles, fathers or other relatives in some aspect of the business. No one today, however, encourages his or her children to go into the business because of the economic uncertainty.

Community Profiles  
New Hampshire sub-region  
Rockingham County

### 5.7.1.2. Portsmouth

#### *Background*

Portsmouth, NH, a city of 23,000, sits near the mouth of the Piscataqua River, a short, wide river that divides New Hampshire and Maine. The city also is at the hub of a metropolitan region that includes several small cities and many towns.

The Portsmouth Harbor, about three nautical miles from the deep water of the Atlantic Ocean, is accessible year round via the Piscataqua River channel. The river channel is a minimum of 35 feet deep at mean low water and 400 feet wide. A Coast Guard station is located at New Castle near the harbor entrance.<sup>17</sup>

“Captain Walter Neal and a small following of Englishmen, sailing up the Piscataqua River in 1630, were impressed by the thick growth of wild berries along the west bank, some two miles from the river's mouth. They chose this site for settlement and named it Strawberry Banke. Here, just above a small cove, they erected a large communal structure, called a Great House, to serve as a combination storehouse, trading post and living quarters. The site was destined to become, in another century, an important colonial commercial center. In the twentieth century the part of the site nearest to the cove would become an outdoor history museum, also called Strawberry Banke. But for Captain Neal and the others this riverbank was simply a suitable place for planting and trade.

Two later settlers were John and Richard Cutt, brothers who emigrated from Bristol, England, to New England in the 1640s. They went first to the Isles of Shoals, just off Portsmouth Harbor, where they invested in the fishing trade. Later they moved to Portsmouth, received large land grants, and set up a sawmill. They began exporting lumber, which was to become the single most important commodity of Piscataqua trade for the next century and a half.

New Hampshire was taken away from Massachusetts in 1679 and made a royal colony. John Cutt, appropriately, was named the first president, and for the first time, New Hampshire was to have its own legislature. Because of Portsmouth's growth and economic prosperity, it became the capitol of the new colonial government. Thus, by the end of the seventeenth century this northern colonial seaport on the Piscataqua River had established itself as the economic and political center of an independent royal province.

By the close of the century Portsmouth's economy was tied to several distinct patterns of trade: a coastal trade in basic commodities that reached from Newfoundland to Virginia, but was particularly tied to Boston; a timber trade with the West Indian Islands and more distant Atlantic destinations such as Spain and Portugal, and the mast trade with England. These were the developments that most benefited Portsmouth's second generation such as Captain John Sherburne.

Portsmouth's trade matured in the early 1700s. Local merchants developed a wide range of lumber products from masts, boards, house frames, and furniture, to oars, wagon spokes, barrel parts, and small boats and found new markets for them. Trade reached to all points of the Atlantic world.

Society ranged from common to polite, but there was no social segregation, no suburbs to lure the wealthy and prominent to another part of town. Every Portsmouth neighborhood, including the

<sup>17</sup> [http://www.fas.org/nuke/guide/usa/facility/portsmouth\\_nh.htm](http://www.fas.org/nuke/guide/usa/facility/portsmouth_nh.htm)

one that grew up around the cove near the Great House, included the homes of laborers and artisans, fishermen and sea captains, traders and merchants. Men of all classes lived and worked alongside one another. This social integration is reflected in the juxtaposition of the eighteenth century houses that have survived from the simple home of blacksmith Joshua Jones to the elegant home of merchant Stephen Chase.<sup>18</sup>

In the 1820s, there were approximately 500 men on 150 to 200 fishing vessels out of Portsmouth.<sup>19</sup> Commercial shipbuilding also created jobs for Portsmouth artisans. In the late 1840s and 1850s, when the China trade and discovery of gold in California created a demand for faster sea transportation, Piscataqua shipyards became famous for their long and slender clippers.<sup>20</sup>

"In the second half of the 19th century Portsmouth turned increasingly to industry to help replace the prosperity that was lost with the shipping trade. Of products made here during that time, beer became one of the most important. By the late 1800s Portsmouth boasted three breweries, including one of the largest on the East Coast. Frank Jones began making malt beverages in the 1860s. Within twenty years his huge plant encompassed the largest ale and porter cellars in the world. By 1896, Jones, "king of the eastern brewers" was producing 250,000 barrels of ale a year.<sup>21</sup>

The character of Portsmouth changed dramatically over the 19th century. In 1800 it was a thriving seaport, barely removed from its days of colonial grandeur. By 1900, except for a few fishermen and sporadic work at the Navy Yard, there was little maritime activity left. Nevertheless, fishing retained a place in the economy for the next century and beyond. In addition, aquaculture has a tenuous hold (Great Bay Aquafarms, Portsmouth) and processing of imported fish product (National Sea Products) provides some diversity in the fish-related economy.

As the major port in New Hampshire, Portsmouth is the nodal exchange between the commerce of the state coming in by road, rail, and the Piscataqua River and the commercial fish produce and world commerce coming in from the Atlantic Ocean.

### *Fishing Dependency in Portsmouth*

Portsmouth is the site of the primary fishing fleet of New Hampshire, which is supported by a state pier and adjoining fish co-op. The pier lies adjacent to historic buildings, restaurants, and museums touting the past and celebrating the present total capital flows of this industrious port city. The support of the fishing industry by the city reflects the view that the commercial fishing industry is an important component in both the diversification of the local economy and provision of cultural color that makes the waterfront attractive. While visiting Portsmouth, we witnessed tourists and schoolchildren strolling down the commercial dock and enjoying the sites of the various fishing vessels and their working accoutrements. A state plaque commemorated the construction of the pier, and the co-op bustled with activity of boats arriving, unloading, and departing for the fishing grounds.

Portsmouth is equally one of the most gentrified and the most fishing infrastructure complete of the New England ports. Ranking 6 on fishing infrastructure (factor score of 1.000), it possesses virtually all the necessary items for the maintenance of a modest fleet and for the marketing of its catch, though not on the scale of the larger ports such as Portland and New Bedford. Because of the concentrated nature of the infrastructure, with most everything tied into the state pier and co-op, it is structurally most similar to Stonington, Connecticut, which follows it at rank 7 (factor score of .789) in fishing infrastructure differentiation.

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<sup>18</sup> Ibid.

<sup>19</sup> Contas et al, 1980.

<sup>20</sup> <http://www.strawberybanke.org/museum/history/history.html>

<sup>21</sup> <http://www.strawberybanke.org/museum/history/history.html>

Rank/Scale	City	Factor score
6 (Fishing Infrastructure)	Portsmouth, NH	1.000
2 (Gentrification Scale)	Portsmouth, NH	.959

Infrastructure components that give Portsmouth its rank include four lobster bait houses, two boat builders, two boat yards, five fish retailers, two fish processors, a harbormaster station, fishing monument, and seafood wholesaling, and fuel, oil, and ice supplied out of the co-op. Other features include two marine contractors; two haul-out facilities, a netmaker, and three marine supply outlets, and two marine surveyors.

Portsmouth ties with Kennebunkport, ME and Plymouth, MA according to the gentrification infrastructure. Dockside components contributing to gentrification include three marinas, five bars/clubs dockside, eight charter boat operations, three whale watch tours, and two dockside hotels/inns. Other monuments, living museums, and stately old buildings give the waterfront complex a sophisticated charm of authenticity and history. Informants noted that the area's fishing industry has survived gentrification because the fishermen are so tenacious and because the area has the benefit of having one of the richest fishing grounds in the Gulf of Maine "in sight of their homes."

The co-op, built in 1978, is the nerve center of most fishing activity, with the exception of the local lobster fleet. No lobsters are landed at the state pier, but are landed at a smaller pier to the south, and in several other areas, by more than 50 full time lobster fishermen. The co-op has members as far away as York, Maine. In fact, one respondent suggested that York County is more closely related to Portsmouth than it is to Portland (Maine).

Most of the product landed at the co-op is finfish, as well as some scallops, sea urchins and conch. Shrimp from boats in Rye is trucked to the Portsmouth Co-op. Lots of fish brought into the co-op ends up on the auction in New Bedford, Portland or Gloucester. Some also is sold directly to brokers such as North Shore Seafood in Boston. There are also three trucking brokers working out of Fultons' market in New York, and the co-op sells to them "*practically every night*".

The Portsmouth Naval Shipyard is located about 50 miles north of Boston, Massachusetts, at the southernmost tip of Maine. The shipyard is on an island in Kittery, Maine, across from Portsmouth, New Hampshire, near the mouth of the Piscataqua River. The construction of naval vessels along the banks of New England's Piscataqua River dates from the year 1690 when the HMS Falkland was built for the British Royal Navy. Naval shipbuilding and repair activities increased in following years, and warships built or fitted out by private shipyards located on the Piscataqua, such as John Paul Jones' USS Ranger, figured prominently in American naval history. However, it was not until 1800 that a permanent shipyard devoted exclusively to the construction and repair of vessels for the United States Navy was established at the mouth of the Piscataqua.<sup>22</sup>

## Governance

Portsmouth has functioned as a City Council/City Manager form of government since 1947. The City Council is the governing body of the City of Portsmouth and as such is the policy-making entity of the City, except where otherwise expressed in the City Charter. The City Council consists of nine (9) councilors elected at large for terms of two (2) years.

The candidate for City Council who receives the largest number of votes at any election becomes Mayor. The City Councilor who receives the next largest number of votes becomes Assistant

<sup>22</sup> [http://www.fas.org/nuke/guide/usa/facility/portsmouth\\_nh.htm](http://www.fas.org/nuke/guide/usa/facility/portsmouth_nh.htm)

Mayor. A candidate for City Council must be a duly qualified voter and resident of Portsmouth for at least two years immediately prior to election.

The City Manager is appointed by a two-thirds majority of the City Council to function as the Chief Executive and Administrative Officer of the City, responsible for the proper administration of all the departments of City government. The City Manager serves at the pleasure of the City Council.<sup>23</sup>

## *Demography*

### Population

Portsmouth had a population of 25,925 in 1989, 12,757 male and 13,168 female.

### Age Structure

The population of children under eleven years was 4366 in 1989. Teenagers (12 to 20) were 2390 in number; adults (21-64) were 16,016 and seniors (65 and over) were 3153.

### Education

Persons 25 and over with no high school degree numbered 1905 in 1989. There were 5278 high school graduates and 5308 with some college or an Associate's degree. Thirty-one hundred, sixty-two had a Bachelor's degree and 1354 had graduate or professional degrees.

### Housing

Of the 11,369 housing units in 1989, 10,329 were occupied, (4,326 by owners) and 1040 were vacant. The median value of owner-occupied housing was \$137,800 and the median year (of all housing units) the structure was built was 1950.

### Racial and Ethnic Composition

The majority of Portsmouth is white of English, French or French Canadian, German, Hispanic or Italian ancestry.

## *Economic Context*

### Income

Median household income in 1989 was 30,591 and per capita income was 15,557.

### Employment

Of the workers 16 and over, 12, 005 worked in New Hampshire and 2205 worked outside the state. The local economy is currently very strong. Unemployment is very low, housing costs are high, and the vacancy rate is very low. Many computer-related businesses have sprung up locally, and the redevelopment of Pease Air Force Base is generating new job opportunities.<sup>24</sup>

### **Largest Employers and # of Employees**

Liberty Mutual	1,245
HCA Portsmouth Hospital & Pavilion	1,000
Home Depot	380
Erie Scientific/Sybron Lab Products	340
Shaw's Supermarkets, Inc.	320
Newmarket Software	290
National Sea Products	250
Bottomline Technology	250
Walmart	235
P&P Foods (Market Basket)	210
Edgewood Center	200

<sup>23</sup> <http://www.cityofportsmouth.com/CityManager/index.htm>

<sup>24</sup> <http://www.portsmouthnh.com/visitors/index.html>

Yoken's Restaurant & Conference Center	195
Lonza Biologics	190
US Dept of State, National Passport Center	188
Sheraton Hotel & Conference Center	175
US Dept of State, National Visa Center	169

The civilian work force population at Portsmouth Naval Ship Yard is approximately 4,100 (permanent employees). Retail trade boasted the highest numbers of employees, manufacturing of durable goods and the category of finance, insurance and real estate followed. In the industry category of agriculture, forestry and fisheries, the Census counted 78 individuals and in the occupation category of farming, forestry and fishing there were 114.

#### INDUSTRY

Universe: Employed persons 16 years and over	
<b>Agriculture, forestry, and fisheries (000-039)</b>	<b>78</b>
Mining (040-059).	0
Construction (060-099)	603
Manufacturing, nondurable goods (100-229)	541
Manufacturing, durable goods (230-399)	1307
Transportation (400-439)	538
Communications and other public utilities (440-499).	257
Wholesale trade (500-579).	407
Retail trade (580-699).	2792
Finance, insurance, and real estate (700-720).	1028
Business and repair services (721-760).	639
Personal services (761-799).	508
Entertainment and recreation services (800-811).	206
Professional and related services (812-899):	
Health services (812-840)	847
Educational services (842-860).	984
Other professional and related services (841, 861-899)	889
Public administration (900-939)...	777

#### OCCUPATION

Universe: Employed persons 16 years and over	
Managerial and professional specialty occupations (000-202):	
Executive, administrative, and managerial occupations (000-042).	1880
Professional specialty occupations (043-202).	2002
Technical, sales, and administrative support occupations (203-402):	
Technicians and related support occupations (203-242)	505
Sales occupations (243-302)	1982
Administrative support occupations, including clerical (303-402).	1821
Service occupations (403-472):	
Private household occupations (403-412)..	32
Protective service occupations (413-432).	226
Service occupations, except protective and household (433-472)	1595
<b>Farming, forestry, and fishing occupations (473-502).</b>	<b>114</b>
Precision production, craft, and repair occupations (503-702).	1052
Operators, fabricators, and laborers (703-902):	
Machine operators, assemblers, and inspectors (703-802).	530
Transportation and material moving occupations (803-863)..	331
Handlers, equipment cleaners, helpers, and laborers (864-902).	331



### *Transportation and Access*

Portsmouth is accessible via Interstate 95. It lies midway between Portland, ME and Boston, MA (50 miles from each).

### *Hospitals, schools, libraries*

- Three elementary schools with an enrollment of 1252, a middle school with 588 children, one high school with 1061 students; three private or Parochial schools with 525 students. Nearby Stratham has a technical college; also nearby are University of New Hampshire and McIntosh.
- Portsmouth Public Library
- Portsmouth Regional Hospital

### *Fisheries Profile*

#### Community

Fish are legally sold ex-vessel to a dealer, processor or the public; fishing support services are provided; there are public facilities providing dockage; fishing people satisfy their daily and weekly social and/or economic needs here, and some fishermen and their representatives participate in fisheries resource management.

#### Commercial fishing and fisheries-related employment

##### *Harvesting structure*

About 26 finfish vessels and 50 lobster boats fish out of Portsmouth. The fishing fleet varies in size from 22 to 60 feet, with most vessels being in the 45' range. Of these, 32 are made of fiberglass, 6 of wood and only 2 of steel.

##### *Processing structure*

National Sea Products, a Canadian company, has a plant in Portsmouth. Frozen blocks of fish are imported and processed into breaded product for the wholesale and retail markets for portions.

##### *Support Services*

There are 26 members of the coop, with their vessel names listed on a monitoring board in the office telling the status and general whereabouts of each vessel. When a vessel is coming in to land, they are on the phone to the broker, who will be given information on the catch size and composition, which is then passed on for bids to buyers in Boston, Portland, Gloucester, and New Bedford. When a vessel offloads, they already have a buyer and price for their product. As with all fisheries, certain vessels which are more successful than others, bring back a higher quality product, and do so for better prices.

Lots of fish brought into the coop end up on auction in New Bedford, Portland or Gloucester, or as direct sale to brokers such as North Coast Seafoods in Boston or Sea Trade. There are also three trucking brokers working out of Fultons' market in New York, and the co-op sells to them "practically every night".

Three hundred households indirectly depend on commercial fisheries. These are the truckers, marine and fishing gear suppliers, seafood brokers, seafood restaurants, welders, and various other secondary stakeholders in the total capital flow system.

##### *Employment (year-around and seasonal)*

Two hundred households are thought to be directly dependent on commercial fishing.

GreatBay Aquafarms, Inc. and Public Service Company of New Hampshire/Northeast Utilities

(PSNH) have collaborated on an aquaculture project that focuses on raising fluke (summer flounder). Since early fall of 1995, GreatBay Aquafarms, Inc. has hatched summer flounder and sold them to grow-out operations that raise them to maturity and then sell the high-end fish at market. Since its launching, the hatchery has expanded to a second building and is now piloting its own grow-out program. GreatBay employs about a half dozen full-time and half dozen part-time workers, one of whom is a commercial fisherman.<sup>25</sup>

*Species, Seasonality*

Species brought into the co-op include the following:

Groundfish: cod, dabs, winter flounder, yellowtail flounder, haddock, weakfish, pollock, red hake, halibut, gray sole

Small Mesh: whiting, shrimp, squid

Pelagics: herring, mackerel

Crustaceans: crab, lobster

Highly Migratory Species: bluefin tuna

Others: striped bass; dogfish; skate; sea urchin; monkfish; tilefish; bluefish; conch, scallops, scup, slime eels

*Form of ownership (e.g., owner/operator; corporation)*

The majority of fishing vessels are owner-operated.

Cultural role of fishing

*History and museums*

Strawberry Banke

Port of Portsmouth Maritime Museum & Albacore Park

Seacoast Science Center (Rye)

*Ethnicity in the fisheries*

The fishermen are white, "Yankees."

*Religion*

There are 27 Protestant churches in Portsmouth, one Synagogue and 3 Catholic churches.

*Kinship & family*

The young people do not seem to be following their father's path to the sea.

*Where fishermen go for coffee*

Portsmouth Coop

*Where fishermen go for beer*

They used to go to the Elks Club.

Fishing related organizations and their roles in the community and fishery

*Commercial fishing associations*

New Hampshire Commercial Fishermen's Association

Portsmouth Fishermen's Cooperative

*Angler's associations*

Coastal Cooperative Association

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<sup>25</sup> *Gulf of Maine Times* Spring, 1998

### Fishing-related programs and services

#### Extension programs

New Hampshire Sea Grant has a marine extension agent who was a commercial fisherman and who continues to work closely with the industry developing more selective gear and resolving conflicts. The Sea Grant program also helped the fishermen form their cooperative.

#### Coast Guard

There is a Coast Guard station in Portsmouth. (When George Bush was president, it was a very active station.)

## **Perceptions of the Fishing Community<sup>26</sup>**

### Importance of fishing to the community

Given the complexity and diversity of the local economy, key respondents rate the commercial fishing industry on a one to five scale as "somewhat important." However, both the town and state strongly support the industry.

### Boundaries

Outside of Portsmouth, the community people have the most contact with is Boston. As with Hampton, most needs and activities are carried out or met in Portsmouth. Fishing gear can be bought in Gloucester and Portland, and some go to Nova Scotia for the building and repair of boats.

### **Where do people go to do the following things?**

Sell Fish	Portsmouth Coop
Offload Fish	Portsmouth Coop
Buy Fishing Gear	Portland, Portsmouth, Gloucester
Buy Ice	Portsmouth Coop
Buy Fuel/ Oil	Portsmouth Coop
Haul out Boat Repairs	Portsmouth, Nova Scotia, CA
Book Keeping	Portsmouth
Banking	Portsmouth
Shopping	Portsmouth
Go to church	Portsmouth
Got to school	Portsmouth
Go for Health Care	Portsmouth
Go for Childcare	Portsmouth
Visit Relatives	Portsmouth
Visit Friends	Portsmouth
Go for Vacation	White Mountains, NH; Florida
Go for Recreation	Portsmouth
Socialize	Portsmouth, Boston

### Communication Issues

*"A lot of fishermen have good ideas, but they (fishery managers) don't listen to them. Some of their ideas are eventually taken up, but then they don't get credit for them ... Local fishermen here are the ones that came up with the idea to deter porpoises from getting caught in nets by using pingers."*

### Assessments

For Portsmouth, key respondents indicated that fishermen and scientists "strongly disagreed" on

<sup>26</sup> Based on key informant interviews

the assessment of stock conditions. As with other sites, they contend that the groundfish fishery is in much better condition than is claimed by managers, and the drastic closures that put small family fishermen at risk or out of business are too harsh. Further, there is the perception that fishermen have a lot to say and a lot of knowledge to share, but are being ignored by management.

### **Economic Change**

The economic condition of the fishery is perceived to have worsened over time, and this is attributed just as much to stock declines as to poor management through over regulation. Ten years ago the fishery rated an 'excellent.' Stocks were abundant and regulations made a large harvest possible. Five years ago, it was considered "average" since there was a partial decline in the local stocks, and regulations came into place that were working to improve the stocks (Amendment 5). However, it is felt that these regulations were not given time to work before more severe ones were put into place, creating an economic crisis in the fishery. Today the economic condition of the fishery is rated as poor, with the perception that there are more fish to be caught, since they are having to waste many hundreds of pounds of cod by throwing them back in (since this survey, the daily catch limit has been raised from 100 lbs. to 400 lbs.).

For "five years from now", the prognosis is "excellent", with the condition that management will allow people to fish by opening up closed areas and increasing allowable Days at Sea. A mitigating factor is the increased price on landed fish, in part due to the increasing use of the fish auction system that emphasizes quality of product over quantity. Fish species caught are highly varied, and the fish broker makes it a policy to buy everything that comes in, even if he has no immediate market for it. That insures that the fishermen are able to at least break even, even though it may dampen the eventual profit collected by the co-op broker.

### **Changes in fishing effort**

Besides the catch limits imposed on the cod fishery, a recent issue plaguing this fleet is the closure of inshore areas in the Gulf of Maine and other waters to inshore fishing. This has meant that smaller vessels of the 22' - 45' range, have been at times forced to take long trips to offshore areas in deeper and more dangerous waters. These vessels are usually what are termed 'day boats' meaning their expected fishing range will take them in and out in a day. This puts them in more immediate proximity to assistance should something happen, and if bad weather does develop, allows them to get back quickly before being caught in a storm. A recent USA Today article chronicles the increase risk begin taken by these smaller vessels as their inshore areas are closed to them by regulations. In one case, a single-manned 25-foot trawler was caught in a deadly storm. He was forced to stuff a mattress into the wheelhouse to prevent himself from being battered to death because of the severity of the storm surge.

### **Effects of recent management**

"Groundfish regulations and marine mammal protection has had a harsh effect on local fishermen."

### **Characteristics of local fishermen**

#### *Job satisfaction*

Nobody likes the regulations.

### **Fishing families**

Among the fishermen, there are a few female crewmembers. Wives serve the "shore captain" role, but there is not a strong sentiment that fishing should be continued as part of a family tradition.

Rockingham County  
New Hampshire Seacoast

### 5.7.1.3. Isles of Shoals<sup>27</sup>

#### *Background*

The nine islands and rocky ledges making up the Isles of Shoals were divided between the provinces, now states of New Hampshire (NH) and Maine (ME) during the mid 1600s by their British owners Frederick Gorges and John Mason. "The first documented English landing goes to Christopher Levett, whose crew of about 300 fishermen in six ships found the Shoals a barren camp site in 1623. Eventually a number of famous Seacoast families, including founder David Thompson, used the Shoals as a stepping stone to successful businesses on the mainland. The Cutts brothers (1645) and William Pepperrell (1676) founded successful New England shipping and fishing dynasties by starting nine miles at sea on the Isles. After building Fort Star as early protection against Native Americans, the Isles industry thrived, rivaling other early ports like Boston for sheer volume of exported goods.

Poet Celia Thaxter was just a child when her father Thomas Loughton left a busy life in Portsmouth and accepted the two-year government post of lighthouse keeper at White Island in 1839. Her memories in books like *Among the Isles of Shoals* (1873) made her one of a handful of female writers known throughout the country.

Celia's father and his friend Levi Thaxter had the ingenious notion of building a grand hotel on Appledore. By the time her first poem was published, the two men had turned their unlikely \$2,000 investment into a successful. Loughton was so taken by life away from the mainland, that he never returned there. Celia's literary fame and Boston connections provided the ideal public relations tool, drawing the cream of big city society to the isolated hotel. Among the best known visitors were writers Harriet Beecher Stowe, Richard Henry Dana, Nathaniel Hawthorne and John Greenleaf Whittier, painter Childe Hassam and NH-born President Franklin Pierce.

Their success brought competition. In 1873 the Oceanic, a rival hotel, was built nearby on Star Island, burned and was rebuilt. With the two major islands adapted to tourism, the town of Gosport held its last town meeting and one of America's longest surviving fishing communities faded from history. That same year, Smuttynose, the thin island between Star and Appledore attracted media attention when two young women were brutally murdered there with an ax. The pastoral blend of Celia's island garden and poetry with tales of murder, ghosts, shipwrecks and Blackbeard's lost pirate treasure have assured that the Isles of Shoals will remain a tourist haven.

#### The Isles Today

Except for a few summerhouses and homes of lobstering families, the Isles remains populated mostly by a host of sea birds and marine life. Overnight visitors must be enrolled in a conference or educational class and tourists who arrive daily on the "Thomas Loughton" must return the same day. Although the mainland is easily visible on clear days and nights, arriving visitors instantly feel a sense of separateness. Now divided between the towns of Kittery, Maine and Rye, New Hampshire, the Isles of Shoals still stands, as it always has, like a place separate and wholly its own.<sup>28</sup>

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<sup>27</sup> Shoals refers to "schools of fish" not shallow areas in this case.

<sup>28</sup> <http://www.seacoastnh.com/shoals/history.html>

York County  
Southern Maine Sub-region

## 5.8 Southern Maine

### 5.8.1. York County

York County, incorporated in 1636, is the southern gateway to Maine and the state's oldest county. It is Maine's most highly industrialized county, but it also depends to a great degree upon seasonal tourism. Its many beaches and coastal resort communities attract a sizable summer population. The Biddeford–Saco area is the commercial and industrial center of York County.<sup>1</sup>

York County's 989 square miles held 164,587 people in 1990, with the 1998 estimate showing an increase to 175,165. Of the 164,587 individuals, 80,206 were male, 84,381 were female, most were white (162,307). About 54% of the population (88,542) are Mainers and only 6,121 (4%) were born outside the U.S.

Of the persons over 25 years old, 85,325 (52%) have a high school or better degree and 20,444 (12%) have a Bachelor's degree or higher. Only 1476 employed individuals over 16 identified themselves as working in "agriculture, forestry, and fisheries." One respondent indicated that York County has more in common with Portsmouth (New Hampshire) than it does with Portland (Maine). For example, many of the fishermen of the town on York unload their catch at the co-op in Portsmouth, another example of political boundaries not necessarily matching economic or social realities.

Median household income in 1989 was \$32,432; per capita income was \$14,131. Almost 49,000 households earned income, 16,000 receive social security and 10,000 had retirement income. The median value of owner-occupied housing was \$115,000 and the median year the structure was built was 1966.

The cities, Biddeford and Saco are the county's commercial and industrial center for textiles, shoes, and machinery. The county seat is in the town of Alfred. America's first chartered city was York, 1641.

Other towns include: Acton, Alfred, Arundel, Berwick, Buxton, Cornish, Dayton, Eliot, Hollis, Kennebunk, Kennebunkport, Kittery, Lebanon, Limington, Lyman, Newfield, North Berwick, Ogunquit, Old Orchard Beach, Parsonsfield, Sanford, Shapleigh, South Berwick, Waterboro, Wells, and York

#### *Fisheries Dependency*

Southern Maine ranks 6<sup>th</sup> on the occupational fisheries dependency scale developed by this project. York ranks 21<sup>st</sup> on the infrastructure differentiation and Kennebunkport ranks 15<sup>th</sup>. On the other hand, Kennebunkport is first on the gentrification scale, tying with Plymouth, MA and Portsmouth, NH. York is ranked 17<sup>th</sup>.

Apart from the state level fishermen's organizations (e.g., Maine Lobstermen's Association), the only local fishermen's organization in Southern Maine is the Biddeford Pool Fishermen's Association.

An organization that crosscuts the usual categorizations of individuals associated with the fishing industry is the Northwest Atlantic Marine Alliance (NAMA) whose office is in Saco.<sup>2</sup> NAMA is a non-profit organization currently working to create partnerships among commercial fishermen,

<sup>1</sup> <http://www.supt.sad37.k12.me.us/Maine/Counties/York.htm>

<sup>2</sup> <http://www.namanet.org/>

scientists, universities, and the private sector on research and technology issues in fisheries. It is dedicated to reviving the Northwest Atlantic ecosystem by improving fisheries management.

York County  
Southern Maine Sub-region

### **5.8.1.1. Kennebunkport and Cape Porpoise**

#### *Background*

The idyllic coastline of southern Maine has maintained within its fabric of harbored communities and coastal inlets a small but vibrant fishery grown from history and protected by enlightened community tradition. For example, the sites of Kennebunkport and Cape Porpoise support small fleets of lobster fishermen and draggers with protected docks and moorings as well as bait and gear storage houses. One reason these small fleets can coexist with highly gentrified, but adaptively conservative communities, is the respect the community collectively holds for those already there—for those who have an established space and place in the mythos of the coast. Such changes as the introduction of fast food restaurants to replace home-grown family eateries, or the razing of centuries old domiciles to make way for tourist hotels and condominiums, is resisted. The retention of traditional values by residents gives sense and meaning to the quality of life that shapes the unique character of this Natural Resource Region.

The respect for the legacy of pioneers, founders and their descendents in this most gentrified of our New England coastal regions is seen in a magnificent bronze statue celebrating the fruits of the earth. The bronze, situated in Kennebunkport on a quaint grassy knoll near the water's edge, portrays a man and a woman bearing the natural resources – fish and the abundant harvest —of land and sea. By contrast, choice harbor spots nearby are filled with the modern day recreational vessels and their mooring paraphernalia. Nevertheless, as the casual visitor moves towards the mouth of the tidal inlet that shapes the land-water interface of Kennebunkport, gentrified shops, homes, and the recreational fishing world make way for a sturdy commercial dock space, a diesel station, and a lobster bait house filled with totes of herring.

#### *Demography*

##### Population

As a subdivision of York County, the 1990 census counted 3,406 residents, 1595 male and 1811 female.

##### Age Structure

According to the 1990 census, 623 were children (to 18 years), 146 were 18 to 21, 1880 were adults to 65 years and 757 (22 percent) were 65 or older.

##### Education

Of the 2558 persons 25 years and older in 1989, 154 had not graduated from high school, 673 had high school diplomas, 702 had some college, 587 had a Bachelor's degree and 442 had a graduate or professional degree.

##### Housing

In 1989 there were 1508 households and 2244 housing units. The median year the structures were built was 1959 and their median value was \$162,500. Of the 1419 occupied housing units, 1209 were owner-occupied and 210 were rented.

##### Racial and Ethnic Composition

The vast majority of residents in 1989 were white, 14 were American Indian/Eskimo/Aleut and 21 were "other."

#### *Economic Context*

##### Income

The median household income was \$34,837 and the per capita income was \$22,347.



Employment**INDUSTRY in Kennebunkport (County subdivision)<sup>3</sup>**

Universe: Employed persons 16 years and over

<b>Agriculture, forestry, and fisheries (000-039).</b>	<b>30</b>
Mining (040-059)...	0
Construction (060-099)...	102
Manufacturing, nondurable goods (100-229)...	17
Manufacturing, durable goods (230-399)...	159
Transportation (400-439)...	52
Communications and other public utilities (440-499)...	38
Wholesale trade (500-579)...	59
Retail trade (580-699)...	388
Finance, insurance, and real estate (700-720)...	66
Business and repair services (721-760)...	28
Personal services (761-799)...	66
Entertainment and recreation services (800-811)...	38
Professional and related services (812-899):	
Health services (812-840)...	133
Educational services (842-860)...	259
Other professional and related services (841, 861-899)...	156
Public administration (900-939)...	39

**OCCUPATION**

Universe: Employed persons 16 years and over

Managerial and professional specialty occupations (000-202):	
Executive, administrative, and managerial occupations (000-042).	215
Professional specialty occupations (043-202)...	357
Technical, sales, and administrative support occupations (203-402):	
Technicians and related support occupations (203-242)...	65
Sales occupations (243-302)...	206
Administrative support occupations, including clerical (303-402)...	205
Service occupations (403-472):	
Private household occupations (403-412)...	7
Protective service occupations (413-432)...	42
Service occupations, except protective and household (433-472).	203
<b>Farming, forestry, and fishing occupations (473-502)...</b>	<b>30</b>
Precision production, craft, and repair occupations (503-702)...	133
Operators, fabricators, and laborers (703-902):	
Machine operators, assemblers, and inspectors (703-802)...	21
Transportation and material moving occupations (803-863)...	68
Handlers, equipment cleaners, helpers, and laborers (864-902)...	78

*Transportation and Access*

Kennebunkport is about 4 miles along Route 9A/35 from the town of Kennebunk that is on State Route 1. Kennebunk is also two miles from the Maine Turnpike (Route 95), approximately 27 miles south of Portland.

<sup>3</sup> <http://venus.census.gov/cdrom/lookup/980446471>

## *Fisheries Profile*

### Community

Kennebunkport fulfills the definition of a fishing community on the basis of central place theory. Fish are legally sold ex-vessel to a dealer, processor or the public; fishing support services are provided; there are public facilities providing dockage; fishing people satisfy their daily and weekly social and/or economic needs here, and some fishermen and their representatives participate in fisheries resource management.

### Commercial fishing and fisheries-related employment

#### *Harvesting structure*

Spread here and there in the mouth of the inlet are moored some thirty (30) lobster vessels, two urchin dive boats, and two stern draggers – the totality of the Kennebunkport fleet. These vessels are operated by approximately forty (40) fishermen, most of who are “satisfied with their work”, and only a few of whom are “from away.” When not lobstering full time (in late fall and winter), local lobster fishermen apply their skills to the preservation of historic homes and businesses through carpentry, painting, and electrical work. These added occupational roles reaffirm their place and space in the community, and appreciation is reflected in the town upkeep of the commercial docking space.

Cape Porpoise, just north of Kennebunkport and around the corner from the most gentrified spot in New England – the house of former President George H.W. Bush, is cut by a long inlet, at the head of which a lobster and seafood market sits, and at the mouth a seafood restaurant. A fleet of 24 vessels is ensconced on a considerable dock area with a harbor master office, a storage and bait house, and diesel station. While fifty (50) households are estimated to be supported by fishing in Kennebunkport, Cape Porpoise is believed to have at least double the number of houses (100) supported by fishing.

A key respondent estimated that besides the 150 households directly dependent on fishing, there are at least another 300 households in the area that are indirectly dependent, ranging from owners of retail businesses to those who buy seafood for the dinner table.

#### *Marketing structure*

Local fishermen thrive on an abundance of lobsters and a good market. The whole lobster catch is often absorbed by one lobster/seafood dealer whose operation sits near the mouth of the inlet and directly across the road from the commercial dock and bait house. This fish and seafood dealer has been around over fifty years. To meet the demands of an expanding regional and international market, the dealer networks up and down the Maine coast and south into Massachusetts and Rhode Island. It is a family-run operation, employing six individuals full-time and another six part-time during the busy summer season. Although they buy from almost all lobster boats, they have ten regular boats that are their primary suppliers.

Overall, there are two marketers in Kennebunkport, four in nearby Kennebunk, and one in Cape Porpoise. The competition is described as “friendly,” though competition over the “boat price” and product (described as a ‘bidding war’) can be especially intense in the summer months. There are four wholesale trucks that deliver regionally. In addition, product is shipped out of Portland or Boston by FedEx.

There’s a seemingly insatiable local demand for summer lobsters for the tourist trade. In addition, there are markets for boxed lobsters in France and restaurant across the US through chains such as Red Lobster.

When the local supply of lobsters cannot meet the demand, phone calls are made to a network of “friends” (other retailers) to fill the demand. Seafood networking – utilizing social, human and economic capital to fill the demand for biophysical capital (the lobster) — is a significant marker to define the regional character of contemporary New England fisheries. This networking defines fisheries in New England as regional, rather than community, phenomena, and as stated

elsewhere in this report, we propose that understanding networks of regional support and interaction via total capital flows is critical to successful management of the fisheries and their interfaced fishing populations.

#### *Species, Seasonality*

The height of the lobster season is in April to June but full-time fishing continues until about November 1<sup>st</sup>.

While few locals catch groundfish in southern Maine, two draggers still ply nearby waters out of Kennebunkport, but have suffered losses from restrictive inshore regulations and a general decline in local fish stocks. Earlier years saw a dozen gillnetters from Kennebunkport and Cape Porpoise catching a variety of fish. Fish caught, past and present, include cod, herring, flounder, haddock, yellowtail, dabs, mackerel, whiting, pollock, hake and shrimp. Others include dogfish, skate, sea urchin, monkfish, bluefish, and tuna.

Cape Porpoise is home to highliner tuna fishermen. They've been renowned in the tuna fleet for a long time. Some people switch to rod and reel to fish other local species after lobstering. There are two boats that also fish for sea urchins.

## Perceptions of the Fishing Community<sup>4</sup>

### **Importance of fishing to the community**

Despite the significance of tourism and the gentrified lifestyle (with Kennebunkport scoring at the top of the gentrification scale), key respondents in the fisheries perceived fishing as being "very important":

*"This has always been a fishing village...people could get seafood from other places, but fishing is a part of the culture here, and so they get their seafood here"*

### **Boundaries**

Community contacts are linked to the patterns of fishing, and to the closed nature of the fishing enclaves that make up the coast. Kennebunk was noted as the community that people had the most contact with. Other community contacts were as follows:

Activity	Location
Sell Fish	Draggers in Portland, others to dealers in town
Offload Fish	Locally
Buy Fishing Gear	Portland or Portsmouth
Buy Ice	Locally
Buy Fuel/ Oil	Locally
Haul out Boat Repairs	Locally
Book Keeping	Locally
Banking	Locally
Shopping	Biddeford/Kennebunk
Go to Church	Locally
Got to School	K-6 locally; 7-12 Kennebunk
Go for Health Care	Out of town
Go for Childcare	Locally
Go for Retraining	Out of town
Visit Relatives	Out of town
Visit Friends	In town

<sup>4</sup> Based on key informant interviews

Go for Vacation	Florida, Arizona, White Mountains
Go for Recreation	To beach
Socialize	In town

### **Communication Issues**

No specific regulations were noted by key respondents as having had a significant impact on recent fishing conditions. There is optimism with improving groundfish catches that local stocks are on the rebound, and that communication with management is overall a success. On a one to five scale, communication with local fishery managers was rated as “good” (3), with state managers as “very good” (4), and with regional federal managers as “good” (3). The overall mood is one of optimism that the fishery will sustain itself, and that management has done an overall good job in allowing the fishery of this region to continue to thrive.

### **Assessments**

There is clearly a disagreement with the assessment of stock conditions between fishermen and scientists. Key respondents indicated that the groups “strongly disagree” on the conditions of stocks, and that fishermen see the ecosystem and supported fisheries as in good shape. In contrast, the scientists are too rigid in interpreting conditions as being in a state of collapse through overfishing. Part of the optimism comes from fishermen who see diversity as the key to survival. However some are concerned about the potential impact of regulations on the entry of young people into the industry:

*“One option is to diversify, and NMFS has proposed putting in hand line regulations for fishing. We do need regulations – limiting licenses and closing areas - but keeping things diverse is necessary...we must put regulations in place in such as way that younger people will have a chance to get into it.”*

### **Economic Change**

Ten years ago the economic condition of the industry was considered “average” (3 out of 5), and five year ago “average” (3), but today is rated as “good” (4), with a mark of “excellent” (5) given to the fishery five years from now—riding on the caveat of better management through limitations on traps and licenses.

Today, increased prices for quality fishery products has meant more money coming in, and improved the standard of living of those in the local fishery.

The population of fishermen is stable, although small, and the perception of several key respondents is that the fisheries here have been and will continue to be successful.

### **Fishing families**

Although spouses of fishermen are working outside the home today, this is not significantly different from conditions five years ago.



## Sub-region Profile

Counties: Lincoln, Sagadahoc and Cumberland

## 5.9 Lower Midcoast Maine

Midcoast is defined in the local Chamber of Commerce's literature as the "reach of two mighty rivers—the Kennebec and Androscoggin—and their joining at the luminous expanse of Merrymeeting Bay."<sup>1</sup> The region's Chamber of Commerce notes that Bath, Brunswick and Topsham are the region's core commercial communities, with Arrowsic/Georgetown, Bowdoinham, Harpswell, Phippsburg, West Bath, Westport/Woolwich and Wiscasset also considered significant.

None of the profiles drawn by various "Midcoast Maine" publications includes Portland even though the city is in Cumberland County, not far from Harpswell that *is* considered part of the midcoast region. The communities explicitly included in the midcoast descriptions are said to be primarily "small with annual town meetings, a sense of community, 'Yankee independence,' and rural lifestyles." Nevertheless, for this fisheries-related sketch, Portland is included. As explained in the introductory section, this project is loosely linked to an economics project developing IMPLAN for fisheries specific data. In an effort to make the results of this project parallel those of the economics project, counties are specified for each of the sub-regions. Cumberland, Sagadahoc and Lincoln are the three counties considered "lower mid-coast." The profiles of individual communities portray very different economic and social features within the counties and sub-region and thus illustrate the constraints imposed by such arbitrary boundaries as "county" or sub-region.

### *Historical sketch*

Samuel de Champlain is believed to have mapped the lower portion of the Kennebec River in 1605, but a stone with runic markings of the date 1018 suggest his explorations may have been preceded by Norse Vikings. Native Americans of the Abnaki tribe, including the Pejepscots, the Sagadahocs and the Sheepscots, were the earliest known settlers of the region.

Predating Plymouth by 13 years, Popham Colony was settled in 1607 by a branch of the Virginia Company, which had also founded Jamestown. "Led by George Popham, an aging but well-connected nobleman, and Raleigh Gilbert, a rake of 25, the Popham colonists chose to found their colony, Fort St. George, at a wind-whipped spot on Atkins Bay that was described, with typical 17th-century incoherence, as 'almost an island of good bigness.'"<sup>2</sup> After reports of "wanton cruelty by the settlers and counterattacks by the Indians," a bitterly cold and snowy winter, and the death of George Popham, the colonists built the *Virginia* and in September of 1608 sailed back to England. There they reported that America was "over cold, and in respect of that not habitable by our nation."

Later English settlers associated with the Plymouth and Pejepscot Proprietorships attempted to compete with the French by establishing a fur trade with the Native Americans. By 1640 the fur trade languished and the English turned to farming and logging. The competition with the French, however, was not resolved and a series of "French and Indian" wars began in 1675. For over 50 years, the settlements constantly suffered burning over the course of six wars. Skirmishes with the Indians continued until the middle of the 18<sup>th</sup> century.

While Brunswick endorsed the Declaration of Independence in May of 1776, it wasn't until 1820 that Maine joined the union as a state separate from Massachusetts. During the revolutionary war, the British held the coast of Maine. The War of 1812 was also difficult for Maine since some of territory was occupied and the British again patrolled the coast.

<sup>1</sup> Description found at the Chamber of Commerce web site URL:  
<http://www.midcoastmaine.com/cbbr/midcoast/region.html>

<sup>2</sup> [http://www.weeklywire.com/ww/10-27-97/boston\\_feature\\_4.htm](http://www.weeklywire.com/ww/10-27-97/boston_feature_4.htm)

During the harsh economic periods, Maine's commerce relied on the bartering of lumber, logs, and ship masts.

### *Modern Economy*

The lower midcoast region is a study in contrasts. Some of the largest employers in the state are located here offering industrial, military and service employment. However, because of the rural and coastal nature of the region, this fails to project the whole economic picture. Four major peninsulas jut into the ocean, yielding many miles of seacoast. Summer visitors flock into the region, renting cottages, hiring boats and taking day trips. The town of Phippsburg noted in its 1990 annual report that more than 50% of its property taxes are paid by non-residents, reflecting the annual economic impact that tourism and summer visitors have on the area.<sup>3</sup>

Furthermore, many of the permanent residents along the seacoast make their living from fishing and marine activities. They also depend on a "cottage" economy, running small family businesses such as tree farms, or selling handmade goods and produce on a seasonal basis.

### *Fishing Dependency*

According to the analysis of the first set of indices that are based on employment ratios, Lower midcoast Maine ranks fourth in its level of fishing dependency following Cape Cod (3), Upper midcoast Maine (2) and Downeast Maine (1). This ranking reflects the fact that this sub-region is more economically diverse than those higher on the dependency scale. It also, however, depicts a sub-region still highly dependent on its natural resources.

In considering fisheries infrastructure, Portland clearly must be categorized as a "primary" port and an "essential provider." It ties with New Bedford, Massachusetts as the most highly differentiated fishing port in the New England Natural Resource Region. Virtually every aspect of the fishing industry has a presence in Portland. In addition, the availability of support services attracts the business of others in the fishing industry from smaller or less differentiated ports both in the sub-region and elsewhere. Because the statistics upon which the dependency index is based reflect the harvesting sector more consistently than other fishing-related employment (e.g., marketing or processing), Portland's dependency may actually be higher than indicated. Research in the city identified a considerable processing sector, including the largest shrimp processor in the state of Maine. Portland is also the site of the first display auction in New England, a very significant institution in the marketing of fish.

Gentrification is virtually inevitable in a modern urban setting and Portland is no exception. Nevertheless, Portland has zoning safeguards that protect water-dependent use. The city has demonstrated the value it attaches to the fishing industry by supporting such facilities as the fish pier and the auction and by hiring a fisheries program manager.

If Harpswell were located farther away from Portland, it would probably have remained unquestionably fisheries-dependent. The area still values its fishing industry, particularly lobstering, and a variety of services are still locally available. But the list of contacts spreads out towards Brunswick and Portland, showing a total capital flow that surges well beyond the boundaries of the peninsula. Perhaps the most telling observations are these: One of the last groundfish fishermen in the area is selling his boat because he is no longer able to attract acceptable crew. He plans to go lobstering since he can do so on his own or with a sternman. Fishing families report that their children are not attracted to the industry not only because of the inherent hardships and regulatory headaches, but also because of the greater appeal of high tech jobs.

Respondents for Boothbay, Boothbay Harbor and Southport indicated that gentrification is well underway in their community. Though the peninsula as whole still derives a healthy

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<sup>3</sup> <http://www.cityofbath.com/>

income from reliance on natural resources, especially lobsters, the waterfront has largely shifted to non-water-dependent uses in the community centers.



Lower Mid-Coast Maine  
County Statistics

### 5.9.1. Lincoln County<sup>4</sup>

Incorporated in 1760, Lincoln County is one of the oldest counties in Maine. It was named for Thomas Pownal, an early governor of Massachusetts whose home was Lincoln, England. The county has 457 square miles and had a population of 30,357 in 1990 (1998 estimate was 31,815) living in 11,889 households.<sup>5</sup> The gender division was 14,751 males to 15,606 females.

British Isles (English, Irish, Scotch and Welsh) ancestry is claimed by 46% of the residents. Scandinavian and Hispanic ancestry is attributed to over 1000 individuals each. Eight hundred and twenty individuals were born outside of the US. Only 236 nonwhites were resident in the county in 1990.

Elementary and high school enrollment in the county was 4992 in 1990. Also at that time, among persons 25 and older, 16,834 (67%) individuals had a high school diploma or higher. Bachelors, graduate or professional degrees were identified for 4593 individuals (18%).

“Agriculture, forestry and fisheries” category of occupation was claimed by 741 employed individuals over 16 years old. The median household income in 1989 was \$28,373 with a per capita income of 13,479. Social security was received by 3769 households, retirement income by 2301.

Of the county’s 11,968 occupied housing units, 9955 were owner occupied, 2013 were rented. The median age the housing unit was built was 1959 and the median value of owner-occupied housing was \$102,000.

Towns include: Alna, Boothbay, Boothbay Harbor, Bremen, Bristol, Damariscotta, Dresden, Edgecomb, Jefferson, Newcastle, Nobleboro, Somerville, South Bristol, Southport, Waldoboro, Westport, Whitefield, and Wiscasset. Plantations: Monhegan.

Wiscasset, on the Sheepscot River, is the county seat for Lincoln County. Eighteenth and 19<sup>th</sup> century buildings from its maritime past now house restaurants, inns, shops and offices. One of the offices housed is that of Coastal Enterprises, Inc. (CEI), a non-profit corporation that provides financial and technical assistance for the development of small businesses, social services and affordable housing. CEI has a fisheries program that targets fishing industry participants for a variety of services. Wiscasset is connected by bridge to Westport Island.

The Boothbay Harbor region is a popular summer resort. Lobster fishing retains a strong role in the county. After acrimonious debate with fishermen from Friendship, Maine, Monhegan fishermen were allowed to retain exclusive rights set lobster pots in Monhegan’s fishing grounds.

Southeast of Damariscotta, located in the small town of Walpole, the Darling Marine Center is the site of world-renowned marine research bordering the Damariscotta River estuary. DMC faculty belongs to the University of Maine’s School of Marine Sciences. The DMC fosters national and international collaboration among marine scientists and invites visiting investigators to use the state-of-the-art equipment in their biogeochemistry, microbiology, histology, electron microscopy, and flowing seawater laboratories.<sup>6</sup>

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<sup>4</sup> <http://www.supt.sad37.k12.me.us/Maine/Counties/Lincoln.htm>

<sup>5</sup> 1990 US Census Data. Database:C90STF3A. Found at <http://venus.census.gov/cdrom/lookup/953847061>

<sup>6</sup> <http://server.dmc.maine.edu/>

The Darling Center is also noteworthy for its seminal role in Maine's aquaculture industry. In 1972 the "first aquaculture hatchery was built at the Darling Center as the foundation for a Sea Grant funded project, the Culture of Resources in a Cold Water Marine Environment. This was the first facility to raise soft-shell clams on a large scale and to produce triploid shellfish of four species—Eastern oysters, soft-shell clams, bay scallops and hard-shell clams."<sup>7</sup>

Vessels providing Lincoln County addresses for their vessels include Boothbay (19 boats), Boothbay Harbor (25 boats), Bremen (13 boats), Bristol (19 boats), Damariscotta (3 boats), Edgecomb (4 boats), Jefferson (1 boat) Newcastle and Nobleboro (3 each), South Bristol (8 boats), Southport (6 boats), Waldoboro (5 boats), Westport (2 boats) and Wiscasset (2 boats). In addition, 14 boats gave a Monhegan address.

A key respondent reported that the significant fishing towns, including those whose fishermen rely primarily on state permits, are Boothbay Harbor, Bremen, Bristol, Monhegan, South Bristol, Southport, and Westport. Waldoboro is also considered significant in the clamming sector of the industry.

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<sup>7</sup> <http://www.maineaquaculture.org/history/milestone.htm>

Community Profile  
Lincoln County  
Lower Mid-Coast Maine

### 5.9.1.1. South Bristol

#### *Background*

South Bristol has an active, well-maintained commercial fishing waterfront. Few recreational vessels are in evidence. There is a large warehouse on the shore and a couple of wharves. Two restaurants double as convenience stores.

Since 1994, collaboration between the Maine Maritime Museum and the South Bristol Elementary School brings the eighth grade to the Museum in Bath once a week. Over the course of the year, depending on the size of the class, students build one or two traditional skiffs. The students thus learn teamwork, how to follow directions, proper tool handling techniques, and woodworking skills that involve hands-on math applications.<sup>8</sup>

#### *Demography*

##### Population

According to the 1990 census, 825 persons live in South Bristol year round, 402 are male and 423 female.<sup>9</sup> The summer population is about 2000.<sup>10</sup>

##### Age Structure

In 1989, there were 147 children (3-19 years).<sup>11</sup>

##### Education

For persons 20 and over, 214 were high school graduates, 149 had some college and 191 had a Bachelor's or better.

In 1989, there were 118 students enrolled in school. South Bristol Elementary School had 70 students in grades K-8 in 1999.

##### Housing

Median housing value in 1989 was \$108,871. Of the 790 housing units, 299 were owner occupied, 55 rented. The remaining 436 were vacant, presumably some of these are vacation or recreational units.

##### Racial and Ethnic Composition

In 1989, all but 3 residents were white.

#### *Economic Context*

##### Income

Median household income in 1989 was \$27,188 and per capita income was \$18,772.

##### Employment

In 1989, the employment level was 358, by May of 2000 it was 600.<sup>12</sup>

#### *Transportation and Access*

South Bristol is at the end of a peninsula, accessible by Maine Route 129 off U.S. Route 1.

<sup>8</sup> [http://LCNews.Maine.Com/2000-04-06/maine\\_maritime\\_museum.html](http://LCNews.Maine.Com/2000-04-06/maine_maritime_museum.html)

<sup>9</sup> <http://govinfo.kerr.orst.edu/sddb-stateis.html>

<sup>10</sup> South Bristol Volunteer Fire Department's web page at <http://lincoln.midcoast.com/~sbvfd/index.html>

<sup>11</sup> <http://govinfo.kerr.orst.edu/sddb-stateis.html>

<sup>12</sup> <http://www.economagic.com/em-cqi/data.exe/blsla/laume23030305>

Wiscasset, the county seat, is about 20 miles away (estimated 45-minute drive).

### *Fisheries Profile*

#### Community

South Bristol fulfills the definition of a fishing community on the basis of central place theory. Fish are legally sold ex-vessel to a dealer, processor or the public; fishing support services are provided; there are public facilities providing dockage; fishing people satisfy their daily and weekly social and/or economic needs here, and some fishermen and their representatives participate in fisheries resource management.

Among the features present in South Bristol are: air fill station for divers, available bait, boat builders, boat yards, yacht dealer, docking facilities, a lobster coop, a shrimp, tuna and crab processor, fish retailers, harbormaster, ice house, marine contractors, marine railways, marine supplies, marine museum, one aquaculture facility, oceanographers, cold storage warehouse, trucking and oil/diesel fuel. The fishermen usually do welding themselves. Oceanographers are at the Darling Center.

#### Commercial fishing and fisheries-related employment

##### *Harvesting structure*

There are up to 68 boats in South Bristol (an estimated 20 wooden, 8 steel and 40 fiberglass) ranging in age from one to fifty, and in size from skiffs to 90 foot vessels. About a dozen stern trawlers, a couple of eastern-rigged boats, a few urchin boats, and about 50 lobster boats.

The majority lobster in summer, shrimp in winter, groundfish in summer, and one vessel fishes year-round for red crab.

##### *Processing structure*

One processor handles shrimp, crab and groundfish.

##### *Support Services*

There are three boat builders and four boat yards; diesel fuel is locally available; there are one or 2 docking facilities, a lobster coop, a bait house, one processor, a couple of fish & seafood retailers, a harbormaster, grocers, ice house, a marine contractor, marine railway, some marine supplies are available, two trucking companies, marine museum, marinas, and motel.

##### *Employment (year-around and seasonal)*

About 100 fishermen live in the area, 40 to 50 in South Bristol and Walpole. At least 175 households are directly dependent on the fishing industry, another 100 indirectly.

Quite a few people go clamming, people run the wharves, work in the boatyards, work with the trap business and work at the Darling Center. In addition, there's carpentry, lawn care (including for the golf course), and tree care. There's always some slack time, so you work on what you can find.

Wharf work is year round between the landings and the maintenance.

##### *Sales/revenue*

The price of lobster slipped from \$2.50/lb to \$1.75/lb. as landings and sizes of individual lobsters increased.

##### *Species, Seasonality*

The number of months one can lobster varies year to year, depending on the weather. When not lobstering, many switch to shrimping (winter). April and May some go for elvers (eels). Hagfishing (slime eels) used to be year round. Striped bass are plentiful (not caught commercially). One red crab fishermen docks in South Bristol, fishes far offshore.

Landed species include:

Groundfish: cod, flounder, haddock, pollock, hake, halibut

Pelagics: herring, mackerel, pogies (in the past)

Crustaceans: lobster, crab

Shellfish: scallops, soft-shell clams, sea urchins

HMS: tuna

Other: dogfish, monkfish, hagfish, elvers (eels)

However, landings of groundfish have precipitously declined since the 1980s. South Bristol did have a concentration of groundfish and shrimp boats, but has had to diversify. Fears about the loss of access to groundfish, even after the stocks have recovered, have been raised.

*Form of ownership (e.g., owner/operator; corporation)*

Lobster boats are usually owner-operated, as are remaining groundfish vessels.

### Recreational fishing and employment

There's just a little recreational fishing and no charter boats in South Bristol. Sometimes people come in to catch mackerel, and then they go to Wiscasset to catch striped bass.

### Aquaculture

In 1975 the state's first aquaculture lease was granted to Abandoned Farms, Clarks Cove, South Bristol.

### Cultural role of fishing

#### *Museums and history*

Across the bay from South Bristol, Pemaquid Point was the scene of many shipwrecks through the centuries, including the 1635 wreck of the British ship *Angel Gabriel* in which five people died and all 100 on board lost their belongings. With marine trade, fishing and the shipping of lumber increasing in midcoast Maine, Congress appropriated \$4,000 for the building of a lighthouse at Pemaquid Point in 1826 to mark the entrance to Muscongus Bay and John Bay.<sup>13</sup>

In 1934, Pemaquid Point Light was the first to be automated. The surrounding property became Lighthouse Park and the keeper's house eventually was converted into the Fishermen's Museum. The museum opened in 1972 and has been operated since by volunteers from the town of Bristol. The museum houses exhibits on the history of the local fishing and lobstering industries as well as pictures of all the lighthouses on the Maine coast and a Fresnel lens from Baker Island.

The Pemaquid Group of Artists added an art gallery to Lighthouse Park in 1960. Pemaquid Point Light continues to serve as an active aid to navigation; the grounds are leased to the town of Bristol. In May 2000 the lighthouse was leased by the Coast Guard to the America Lighthouse Foundation.

#### *Ethnicity in the fisheries*

South Bristol's population is all white, "Maine Yankee."

#### *Kinship & family*

The majority of local fishermen were born in the town or nearby.

### **Fishing related organizations**

*Commercial fishing associations*

Maine Lobstermen's Association

### **Fishing related programs**

<sup>13</sup> <http://www.lighthouse.cc/pemaquid/history.html>

*Science institutions*

The Darling Marine Center

The marine laboratory of the University of Maine functions year round as a research and educational facility serving the marine interests of faculty, staff, students and visiting investigators from around the world.

## **Perceptions of the Fishing Community<sup>14</sup>**

### **Importance of fishing to the community**

Fishing is considered “very important” to South Bristol. If it weren’t for commercial fishing, the town would not be active year round; “they could put a gate up at the end of the year and shut it down.”

### **Boundaries**

Capital contacts can be divided up into those encompassing social capital (e.g., visit friends, go for recreation, go for vacation, visit relatives, socialize, go to church); economic (e.g., sell fish, offload fish, buy fishing gear, haul out for boat repairs, go to the bank, go shopping), and human (e.g., go to school, go for childcare, go for health care, go for retraining).

Damariscotta is the community people of South Bristol have the most contact with. The majority of the lobster fishing-related economic capital contacts of South Bristol are in South Bristol, with the exception of hauling out for boat repairs which is more likely to be done in Portland or East Boothbay. The exception for finfishermen is Portland to sell fish and buy gear. Bookkeeping, shopping, banking are usually conducted in Damariscotta. Some of the human capital contacts, such as health care and childcare, are also in Damariscotta. Retraining is available in Portland and Augusta.

Contacts between buyers and sellers of lobsters are usually reciprocal. Harvesters generally buy bait and sometimes fuel and other supplies from the company that buys their lobsters.

Technology is affecting the patterns of contact. With computers and the Internet, as well as cell phones, fishing industry participants are less isolated, even while working.

### **Communication Issues**

Communication between fishermen and local, state and federal representatives/managers was described as “poor.” However, one respondent made the point that “most of the time you hear about this stuff but whether it registers or not is a different story.”

Those in the lobster industry who are on the Zone Councils seem to consider communication better than those who are not. The local Zone Council has a representative who is on the Fishery Advisory Council for the state, so that helps communication.

Fishermen don’t share information, “lie like hell,” except to friends, with whom they may share. Those who “run at the mouth” risk attracting all the fishermen to their fertile location.

### **Assessments**

Fishermen and federal scientists “disagree” on assessments. “Bob Steneck from the Darling Center started working with fishermen 10 or 15 years ago. He’s starting to prove much of what the fishermen have been saying for years.”

### **Local management practices**

The Zone Councils have institutionalized local practices. In 2000 the local zone limited the numbers of traps to 600. “This has caused great strife.”

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<sup>14</sup> Based on key informant interviews

### **Economic Change**

Ten years ago, the economic condition of the finfishing industry was said to be “good.” South Bristol had “a lot of big pogie (menhaden) boats.” Five years ago, the economic condition was described as fair because the pogies “were just drying up.”<sup>15</sup> Today, because of the days at sea regulations, the economic condition remains “fair.” Five years from now, assuming regulations remain in place, the condition will also be “fair.”

Ten years ago, the economic condition of the lobster industry was “average.” But, ten years ago your dollar was worth more. Five years ago was “good.” Today, it is “fair.” Five years from now, it depends on regulations. “If they go with some of the things they’re looking at, we could all be out of business.” Also, if too many groundfishermen switch to lobstering, they many hurt the fishery.

The standard of living has not changed in the last five years, except there were more people working in the processing plant 5 years ago because sea urchin industry was pretty strong. The standard of living has changed over time, though. “It’s definitely more expensive...I mean you look back thirty years ago, my grandparents bought a house down on the water for \$4000 and that house is evaluated at \$180-190,000 today.” “There’s so much money being made out of state and brought in that it has a “real big influence in the area.”

### **Changes in fishing effort**

There is less effort on groundfish because of the regulations; increased effort on lobsters due to competition and shrimping effort has remained about the same. The greatest change in fisheries has been the change in technology. This includes changing from wood to wire traps and the great increase in engine horsepower.

Fishermen have been switching from dragging to lobstering. The lobstermen have been asking for license controls for years, not to create a monopoly, but to slow entry. The state was reluctant to do so. When they started putting in trap limits, trap numbers increased by as much as 25 percent in a lot of areas. “It’s the hog mentality, you know, if 10 traps are good, 30 would be better.” The local Zone Council’s trap limit is the most restrictive in the state with a limit of 600 traps (2000).

### **Effects of recent management**

Days at sea regulations and closures for multispecies have had the most impact of any regulations on finfishing. One effect is an increase in danger, since smaller vessels must go out farther off shore. The restricted season for shrimp probably have had the most significance for the lobster/shrimp fishermen. Trap limits also have had an effect on lobster fishing.

Increasing the measure on lobsters has had some negative consequences. When there were fewer pounds available, fishermen were paid \$.75 more per pound. The restaurants don’t want to pay for a pound-and-a-half lobster for their lobster dinner specials, so the price is reduced. “We’re better off staying with a smaller lobster and protecting the brood stock (via v-notching).”

As the groundfish stocks recuperate, lobster fishermen anticipate that the lobster stocks will suffer from the increased predation. However, then lobstermen may be able to diversify, doing some groundfishing as well.

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<sup>15</sup> Pogies were a unique niche fishery upon which a few people where able to build successful companies.

**Characteristics of local fishermen**

Most fishermen are satisfied with their jobs, though regulations make it difficult, especially because of the associated uncertainty. But “these guys don’t know anything else.”

“With the regulations that come down, they don’t know whether they’re gonna be able to go or not from one day to the next. In the next year you don’t know if you’re gonna be put out of business, whether you’re gonna be so regulated that you’re not gonna be able to make a living or what.”

A “good fisherman” must be a good businessman and a hard worker. “You work out on deck for years, then you get into the wheelhouse.” “A good fisherman has to be dedicated and pretty much brought up in it.”

**Fishing families**

Some women work with their husbands on their vessels, some work at the processing plant and some don’t work. Many wives do the boat’s bookkeeping, others have found clerical jobs or jobs in stores in Damariscotta.

Opinions varied about whether or not informant’s children should enter the industry. Some said “no,” others qualified a “yes” by saying that they should “get their education first.”



Community Profiles  
 Lincoln County  
 Lower Mid-Coast Maine

### 5.9.1.2. Boothbay, Boothbay Harbor and Southport

#### *Background*

The Wawenocks, an Abenaki tribe, were the first known inhabitants of Boothbay. Fishermen and traders from Europe appeared here in the early 1600's, with families following, but by 1689, the white settlers were driven out.<sup>16</sup> The region was resettled under the name Townsend in 1729 by a group of Scotch-Irish. The French-Indian wars, however, devastated the community and everyone left for a period of years. The returning settlers were farmers, but the rocky soil made agriculture a struggle. Woodcutting for the Boston market offered cash and eventually a strong fishing tradition developed. Everything from clam digging to whaling was tried, but it was the Banks fishermen who were most successful.

Saw and gristmills, brickmaking, and shipbuilding were being undertaken by the 1760's. Caleb Hodgdon's tidemill and shipbuilding drew some commerce to East Boothbay Village while the McCobb-Auld business in Boothbay Harbor attracted Banks fishermen. Boothbay incorporated as a town in 1764, dropping the name of Townsend.

Boothbay's economy focused on fishing in the 18<sup>th</sup> and 19<sup>th</sup> centuries. Shipyards built fishing vessels; at least half the men fished, large stores supplied the vessels and fish drying racks covered much of the shoreline. In 1826, 2125 vessels spent time in Boothbay Harbor. Later 400 fishing vessels at a time were anchored there. Pogie factories, marine railways, the ice industry and sardine canneries contributed to the economy.

Southport left Boothbay in 1842. Boothbay Harbor, with a year around population of 1500, incorporated in 1889. By that time, the region had already begun to attract summer visitors who arrived by steamer and several grand hotels were being built. Though the traditional fishing-related businesses continued, "they were outdistanced by the growth of the Harbor as a summer resort." Art schools and retired fishing skippers offering boating excursions were a couple of unusual attractions for the summer visitors. To date, tourism and summer residencies have continued to grow.

Two-masted fore and aft rigged schooners were commonly built in East Boothbay and Boothbay Harbor for coastal fishing and cargo shipment. The hundred-year period between 1820 and 1920 was the most active shipbuilding time, with yacht building beginning to supercede construction of commercial vessels by the 1890's. Five hundred vessels had been built by 1900.

Despite development pressures associated with its growth as a summer resort, Boothbay Harbor has maintained its commitment to the fishing industry, keeping its fish pier active. Lobster fishermen are the primary harvesters in the area and some of the old shipbuilding sites continue as repair facilities.

#### *Demography*

##### Population

In 1989, the population of Boothbay and Boothbay Harbor was 5,013, 2402 male and 2611 female.<sup>17</sup> Boothbay Harbor alone had a year round population of 1,267; 581 male, 686 female.

<sup>16</sup> Boothbay Harbor Region Chamber of Commerce web site:  
<http://www.boothbayharbor.com/New%20Pages/arts.html>

<sup>17</sup> <http://govinfo.library.orst.edu/cqi-bin/sddb-state?Maine>

### Age Structure

According to the 1990 Census there were 166 persons under 12 years (13%) and 130 teenagers (10%), 706 are 21 to 65 years (56%) and 265 (21%) are 65 or older. In Boothbay and Boothbay Harbor combined there were 1,007 children.

### Education

Of the residents in Boothbay and Boothbay Harbor who were 20 years or older, 1,267 had a high school diploma or better. Some college courses had been taken by 977 individuals and 829 had attained a college degree.

### Housing

There were 817 housing units in Boothbay Harbor, 354 are owner-occupied, and 230 are rented in 1989. The median value of owner-occupied housing was \$99,800.

In Boothbay and Boothbay Harbor there were 3,605 housing units, 2077 occupied, 1609 by owners and 468 by renters. The median value of housing was \$116,356.<sup>18</sup>

### Racial and Ethnic Composition

The vast majority of Boothbay Harbor is white (1254 persons) with 9 American Indians and 4 Asians counted in the 1990 Census. When considering Boothbay and Boothbay Harbor together, the 4,912 individuals are white and 101 are non-white.

### *Economic Context*

#### Income

Median household income for Boothbay and Boothbay Harbor was \$27,787. Per capita income in 1989 was \$14,248.

#### Employment

Apart from fishing, there's boatbuilding and boat yard work, including scraping and painting. Restaurant work and carpentry is available. Tourism-related jobs are also available. "There's plenty of work in the area."

### *Transportation and Access*

Balmy Day Cruises runs ferries to Monhegan Island and Squirrel Island.

### *Fisheries Profile*

#### Community

Boothbay, Boothbay Harbor and Southport together fulfill the definition of a fishing community on the basis of central place theory. Fish are legally sold ex-vessel to a dealer, processor or the public; fishing support services are provided; there are public facilities providing dockage; fishing people satisfy their daily and weekly social and/or economic needs here, and some fishermen and their representatives participate in fisheries resource management.

Fishing is considered "slightly important" to the community. The peninsula has an urchin processor and one who handles shrimp, there are docking facilities (2 commercial, one owned by the town), a fishing association, an air fill station, bait houses, five boat builders and six boat yards. There is a fishing monument, three harbor masters, an icehouse, marine railway and marine contractors, marine supplies, fish and lobster buyers and retailers, grocers, insurance companies, a trucking firm, cold warehouse, welders, and oil/diesel fuel. In addition, there are seafood restaurants, bars, recreational dock, hotels/inns, and five boat excursions.

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### Commercial fishing and fisheries-related employment

#### *Harvesting structure*

Boats that can be used for lobstering and shrimping predominate. There are about 50 lobster boats in Boothbay Harbor, through probably about 200 total on the peninsula and approximately 20 urchin dive boats. Boats' ages range from a year old to 40 years old and in size from 20 to 54 feet. Most are fiberglass, but there are 12 or so wooden boats in Boothbay Harbor.

One groundfish boat remains, the others are said to have gone to Portland because of the auction. This is a sharp decline from 20 years ago when Acheson et al. (1980) noted 10 groundfish boats. Teresa Johnson (2000) reports in the early 1980's there were 7-1- draggers and 3-6 gillnetting boats, plus 6-8 combination boats. In the mid-1980's, she said, there were 8-10 gillnetters, 7 draggers and 10 combination boats. The numbers declined in the '90's. Johnson, however, reports the numbers today as "4 draggers, 1-2 gillnetters, and 5 combination boats," significantly more than reported by our key informants.

#### *Processing structure*

One processor handles urchins and another shrimp.

#### *Support Services*

The boat builders and boat yards work on both commercial and recreational boats. Fuel is available from four dealers, bookkeepers, fishermen's supplies, an icehouse, and various marine contractors.

#### *Employment (year-around and seasonal)*

Estimates suggested about 100 fishermen work out of Boothbay. Another 100 households are probably indirectly dependent on the fishing industry. It was believed there are as many as 400 fishermen (total) on the peninsula.

#### *Species, Seasonality*

Typically, "you go lobstering through the spring and into the fall and then you go urchining or shrimping in the winter." Some lobstermen work their traps for six months and do odd jobs for the rest of the year. "Urchining is pretty big."

1997 Federal landings data confirms informants' observations of shrimp landings December-April. Urchins were landed January, February and November. Groundfish landings were noteworthy May through December. Landings in July through September showed Bluefin tuna.

Finfishermen fish year-around. Besides urchining as a "niche" fishery, elvers are sought, in season.

Landed species include:

Groundfish: cod, flounder, haddock, pollock, hake

Crustaceans: lobster, crab

Small mesh: shrimp

Pelagics: herring

Shellfish: sea urchins, periwinkles, mussels, soft-shell clams, scallops, conch

HMS: tuna, swordfish

Other: dogfish, skates, monkfish, bluefish (recreational), stripped bass (recreational), hagfish (soft market)

### Recreational fishing and employment

Seasonally, "head boats" take from six to 26 people to go tuna fishing or jigging for codfish. More than 15 excursion boats leave Boothbay Harbor daily.

### Cultural role of fishing

#### *Museums and history*

Maine Department of Marine Resources built the shell of an aquarium in 1993, then completed the interior by 1995 in West Boothbay Harbor. "The main gallery resembles the rocky coast of Maine. A collection of regional fish and invertebrates can be seen hidden within the granite-like cliffs. Interactive displays, including the numerous touch tanks, allows for discovery learning to take place."<sup>19</sup>

#### *Kinship & family*

The potential for children to go into fishing remains. Informants here seemed more optimistic about fishing as a career than in some other ports.

### **Fishing related organizations**

#### *Commercial fishing associations*

Lobster cooperative

#### *Fishermen's Wives associations*

The local fishermen's wives organization disbanded

### Fishing-related programs and services

Bigelow Laboratory has a community of scientists whose principal concern is the biology of the oceans. Many studies involve marine phytoplankton and zooplankton: microscopic plants and animals that are at the lowest levels of the ocean's food web and which sustain all life in the sea. In fact, the research lab maintains the largest collection of marine phytoplankton in the world.<sup>20</sup>

The Division of Marine Resources' new fisheries research station was built in 1993 on McKown Point in West Boothbay Harbor. This houses the Bureau of Resource Management, all the science capabilities of the department, and some of the Marine Patrol.

U.S. Coast Guard maintains a station in Boothbay Harbor as part of the Coast Guard Group, Portland Maine.<sup>21</sup>

## **Perceptions of the Fishing Community<sup>22</sup>**

### **Importance of fishing to the community**

Opinions ranged from "slightly important" to Boothbay to "very important" to the peninsula as a whole. Informants noted that fishermen no longer live on the waterfront. Most sold any waterfront property as soon as the real estate values escalated. Hotels, condos, private estates and summer estates now predominate. "Pretty much every hotel in Boothbay Harbor that's on the water used to be a fish dock at one time."

### **Boundaries**

Capital contacts can be divided up into those encompassing social capital (e.g., visit friends, go for recreation, go for vacation, visit relatives, socialize, go to church); economic (e.g., sell fish, offload fish, buy fishing gear, haul out for boat repairs, go to the bank, go shopping), and human (e.g., go to school, go for childcare, go for health care, go for retraining).

<sup>19</sup> <http://janus.state.me.us/dmr/rm/Aquarium/aquarium.html>

<sup>20</sup> [http://www.bigelow.org/sci\\_overview.html](http://www.bigelow.org/sci_overview.html)

<sup>21</sup> <http://www.uscg.mil/d1/newengland/d1units.html>

<sup>22</sup> Based on interviews with key informants conducted by Keith Bisson.

Boothbay, East Boothbay and Southport are all on the same peninsula. Most people's contacts are confined to the local area with the exception of a few fishermen's economic contacts. For example, fish (not including lobsters) are commonly offloaded and sold in Portland. Shrimp is sold locally, but shipped to Portland. While most shopping is done on the peninsula, it was pointed out that "when you do go out of town, you pick up stuff because you can save money." Most social capital is linked to the local area, though for a night out, one might go to Portland or Cook's Corner in Brunswick.

There's a fishermen's coop in Boothbay where members can buy fishing gear.

Technology is affecting the patterns of contact. With computers and the Internet, as well as cell phones, fishing industry participants are less isolated, even while working.

### **Communication Issues**

Communication with local managers and representatives is considered fair to good, but communication with state and federal managers and representatives is non-existent (zero). One informant noted, "all these guys are independent and they're not going to be led by anyone so therefore they're not going to ask any one any advice." Another informant commented, "Well, we all have good relationships, it's just we don't agree on how the government's doing it. You know, I'd say, they're listening, but they just don't pay any attention to us."

Vis a vis communication with other fishermen, informants commented that fishermen did not often share information with each other, but you learn a lot by watching what is landed and noticing where individuals fish. Cell phones allow fishermen to contact dealers privately to indicate arrival time and offer catch information.

### **Assessments**

Again opinions varied though active fishermen-informants said that fishermen "strongly disagree."

### **Local management practices**

"We've notched lobsters ever since I was lobstering. Always notched the females. And we always used our own spacers. And we built our own wooden traps. Years ago, before they ever even had this stuff."

Fishermen initiated putting conservation zones, smaller trawls, into place on Sheepscot River.

### **Economic Change**

The economic condition of the fishing industry ten years ago was "good" to "excellent" because the groundfish was not depleted. Five years ago, the conditions were "fair" to "average" for groundfishing (starting in 1994 when Amendment 5 was implemented). Today, it's "fair" to "poor" for groundfish, excellent for lobstering. Some informants blame the condition of the stocks that was attributed to a lack of regulation. "But when those groundfish went to hell, the lobster industry picked up because the predators were taken out of the loop." When the groundfish were plentiful, the lobsters were depleted because of the predation of monkfish and sculpins. Other informants suggested that the catch rate in groundfishing is the same as it was 10 years ago, so question whether such severe regulations are needed. The value of regulations on lobstering was acknowledged, for example, the vents and V-notching are "letting the small ones go and keeping the breeding stock."

Five years from now, it is anticipated that the economic condition will be back to "good," as long as the regulations are maintained, but one informant noted that "they could pass one regulation tomorrow that could put us all out of business." The general consensus was that groundfishing will get better and lobstering will continue.

Standards of living have gone up because of tourism, but life is also worse than it was five years ago...due to tourists, one informant laughed. For the fishermen, life is about the same as it was five years ago, with the possible exception of some improvement for lobster fishermen. Finfishermen, however, face "excessive regulation."

### **Changes in fishing effort**

Fishermen of Boothbay are not going for alternative species, at least in part because of a lack of access to markets. Those fishermen who pursue alternative species (e.g., hagfish and dogfish) tend to fish out of Portland.

Because of the lack of groundfish, more fishermen are lobstering. Lobstermen are always trying to get more traps, more gear.

The most significant changes in the industry have been the development of hydraulic haulers and wire traps. Another factor noted in groundfishing is the need to travel farther offshore for a catch (increasing costs).

### **Effects of recent management**

"Cod are coming back, getting pretty steady again." Amendments 5 and 7 affected groundfishing. Days-at-sea regulations had the greatest impact on the groundfishing industry and shrimp industry. Trap limits and vent size impact lobstering.

In addition to limited markets for alternative species, another factor that now limits fishermen's flexibility is attributed to the regulatory system. "Commercial fishing up and down the coast of Maine has always been a cyclical industry. It comes and goes, comes and goes. And whether it's groundfish stocks or pogies or herring or whatever it is, you'll have a few good years and then you'll have a few bad years. That's just the way it's always been for the last hundred years. And, years ago, guys could always shift from one fishery to another. But now, with the new regulations, you can't switch from one fishery to another unless you've got the permits and the licenses."

### **Characteristics of local fishermen**

A good fisherman is one with a work ethic, who pays attention and listens. Drive, determination and a wish to be independent were also mentioned as important.

Fishing is safer now with regulations requiring more safety equipment and improvements in weather reporting. "Everyone has VHF, lifejackets...before, you know, when we started, you didn't have to have a thing. You know, you jumped aboard and went."

### **Fishing families**

Women have always worked, it's not just the spouses of fishermen, "it's just today, you gotta have both of you working." Lobstermen's wives help with fishing-related tasks... they may do the bookkeeping, paint the pot buoys, go as "sternman" until having children.

When old enough, children may also go as "sternman." Some children are going to college now, but work in the industry in the summer.

### **Additional issues**

Informants commented that the Clean Waters Act was not being enforced as it should be. The paper mills and tanneries pump chemicals down the rivers that can't possibly be meeting water standards. Maine Yankee's been releasing two and three hundred gallons of water from the holding tank for nuclear rods every day. "You don't see the growth around the shore that you used to. You used to see sea anemones come up and grow on the piling and stuff. You just don't seem 'em anymore, not like you did when I was a kid."

“...You go to the grocery store and look down and you’ll see an entire aisle dedicated to nothing but chemicals...millions of households use all this stuff. Something like 50 percent of the population of the United States lives within 75 miles of the shoreline. Let’s face it, all that stuff is gonna end up in the ocean and I think it’s just getting to the saturation. Every year we keep chasing fish further offshore. They don’t come inshore anymore.”

Lower Mid-Coast Maine  
County Statistics

### 5.9.2. Sagadahoc County

Bath, the County Seat, has a centuries-old shipbuilding tradition. Nearly half the ships constructed in America between 1862 and 1902 were constructed in Bath. Continuing the tradition by building ships for the U.S. Navy, Bath Iron Works, with 8,500 employees is Maine's largest employer, and draws almost 50% of its work force from the Mid Coast region. Numerous sea captains' homes attest to the town's maritime history. Retail centers and a service sector are currently important components of the town's economic vitality. In addition, a cultural resource and tourist destination, the Maine Maritime Museum, preserves and interprets materials associated with Maine's maritime history.<sup>23</sup>

#### *Bath Iron Works*

Shipbuilding has been a way of life along the Kennebec River in Bath, Maine, since 1762 when the Earl of Bute was launched on the site of present day Bath. In the 19th century, Bath became one of the leading ports in the United States competing with New York, Boston, Philadelphia and Baltimore in the tonnage of vessels registered here.<sup>24</sup>

By the 1840's the people of Bath felt a change in the administration of the growing town was necessary, and Bath Iron Works began producing the finest steel hulled ships in the world. The year 1890 saw BIW winning contracts for two steel-hulled gunboats, initiating a fruitful relationship between BIW and the U.S. Navy, which continues to this day. Over the last century, BIW has provided battleships, frigates, cruisers, and destroyers for the Navy while also building yachts, fishing trawlers and a host of commercial vessels.

Since the 1950's, BIW has served as lead shipyard for 10 surface ship classes produced by the U.S. Navy, more than any other U.S. shipyard. In 1995, BIW was purchased by General Dynamics, further enhancing the company's technological expertise and capabilities through key investments and access to the complementary capabilities of other General Dynamics companies.<sup>25</sup> Today, BIW, the largest private employer in the State of Maine, builds AEGIS Destroyers - the most advanced and capable warships in the world.

As the 21st century begins, BIW is solidifying its industry leadership position by teaming with the City of Bath and the State of Maine in a long-term capital investment plan. When the modernization is complete in 2001, BIW will be building ships in a state-of-the-art facility. These improvements will enable the company to remain the "best value" shipyard in America, offering unprecedented productivity, quality and affordability to our customers.<sup>26</sup>

#### *Stinson Seafoods*

Also significant is Stinson Seafoods, the largest canner of sardines in the US, now owned by Connors Brothers, that has a major processing operation in Bath, Maine. Stinson is Bath's second largest employer after the Bath Iron Works Shipyard.

Stinson President, Dick Klingaman, anticipates adding about 125 jobs in Bath. Stinson also operates plants in Prospect Harbor and Belfast, Maine and a clam products cannery in Millville, NJ.

#### *Demography*

At 250 square miles, Sagadahoc County is Maine's smallest county. Incorporated in 1854, Sagadahoc County had a population of 33,535 in 1990, it's estimated to have grown to 35,779 by 1998. Merrymeeting Bay is one of the most popular duck hunting areas in the

<sup>23</sup> Maine Maritime Museum Homepage:

<http://www.bathmaine.com>

<sup>24</sup>

<sup>25</sup> <http://www.biw.com/menu/menu.htm>

<sup>26</sup> [http://www.biw.com/company\\_overview/history/default.htm](http://www.biw.com/company_overview/history/default.htm)



northeast.

“Sagadahoc County is a popular area for tourists, offering phenomenal coastline, a rich maritime heritage, quaint towns, antique shops, and much, much more . . . The name Sagadahoc is said to have come from the Sasanoa Indian Tribe and roughly translated means "mouth of big river," referring to the Kennebec River. Sagadahoc County was most likely named for the Sagadahoc expedition of the early 1600s, which included the Popham Colony at the point of what is now Phippsburg.

The towns of Bath, West Bath, Phippsburg, Arrowsic, and Woolwich were originally part of Georgetown,”<sup>27</sup>

In 1990 there were 16,552 males, 16,983 females and 32,766 (98%) whites. There were 305 Blacks, 279 Asians (47% Filipino), 107 American Indians, and 78 “other.” About 46% of the population (12,904) claimed British Isles ancestry; 16% French or French Canadian, 11% German and 4% Hispanic.

Sixty-one percent of the population (20,287) was born in Maine, 4% was born outside the U.S. (including 359 born of American parents).

Eighty-one percent of the population (17,497) of persons 25 or older achieved a high school diploma or better. Twenty-one percent (4,649) received a Bachelor’s and/or graduate degree.

Of employed persons over 16 years, 313 worked in “agriculture, forestry or fisheries.” Median household income in 1989 was \$31,948 and per capita income was \$13,668. Social Security income went to 2,838 households, and retirement income to 2,048.

“In 1997, Sagadahoc had a per capita personal income (PCPI) of \$21,595. This PCPI ranked 7th in the State, and was 98 percent of the State average, \$21,937, and 85 percent of the national average, \$25,288. In 1987, the PCPI of Sagadahoc was \$14,692 and ranked 4th in the State. The average annual growth rate of PCPI over the past 10 years was 3.9 percent. The average annual growth rate for the State was 4.3 percent and for the nation was 4.7 percent . . .

The largest industries in 1997 were durable goods manufacturing; services, 14.7 percent; and state and local government, 7.2 percent. In 1987, the largest industries were durable goods manufacturing, 58.2 percent of earnings; services, 11.5 percent; and construction, 7.4 percent.”<sup>28</sup>

Of the 14,633 housing units, 8,909 were owner occupied and 3,672 were renter occupied. The median value of owner-occupied housing was 95,600 and the median year housing units were build was 1961.

Towns (as differentiated from cities) include: Arrowsic, Bowdoin, Bowdoinham, Georgetown, Phippsburg, Richmond, Topsham, West Bath, and Woolwich.

West Bath, on the New Meadows River and Casco Bay, retains its coastal ambiance with its coves and salt marshes. Located between Bath and Brunswick, its residents may commute to either commercial center for work.

Bowdoinham was the center of Maine’s icecutting industry and its workers also built wooden sailing ships. Truck farms, recreational boating and general aviation are now the norm.

Topsham, a coastal town on Merrymeeting Bay, has become a suburban residential

<sup>27</sup> <http://www.geocities.com/Heartland/Plains/1208/towns.htm>

<sup>28</sup> REIS Bearfacts for Sagadahoc County [http://govinfo.kerr.orst.edu/cqi-bin/bfact?8\\_01-023.mec](http://govinfo.kerr.orst.edu/cqi-bin/bfact?8_01-023.mec)

community with active businesses not necessarily dependent on maritime pursuits. Construction companies, automobile dealerships, health-care agencies, engineering and legal firms and a retail mall top the list of economic activities in the town.

Across the Kennebec from Bath, Woolwich has retained both farming and shipbuilding traditions. Just east of Woolwich is the island of Westport.

### *Fishing Industry*

The fishing industry, especially lobstering, is important to both Georgetown and Phippsburg. Clamming is important in the town of West Bath. As noted above, sardine processing is also important to the county and the city of Bath. Stinson Seafoods announced in September (2000) that it will berth both the 112' fishing vessel *Providian* and the 366' freezer vessel *Atlantic Frost* at its Kennebec River plant in Bath. Mackerel and herring caught by the *Providian* in the Gulf of Maine will be transferred to the *Atlantic Frost* for processing. The *Atlantic Frost* will be in Bath for about six months of the year, according to the company. The company also anticipates adding about 125 jobs.<sup>29</sup>

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<sup>29</sup> <http://www.fishfacts.com/sfdpriv/news1/20000911SSWB.html>

Community Profiles  
Sagadahoc County  
Lower Mid-Coast Maine

### 5.9.2.1. Georgetown

#### *Background*

Arrowsic/Georgetown are islands bounded by the Kennebec and the Sasanoa, a setting that enabled shipbuilding and shipping industries to develop. Today, the Josephine Newman Wildlife Sanctuary and Reid State Park boast beaches, woods and salt marshes. The two islands are said to be sustained by lobstering, boatbuilding, fishing, and native crafts.

Georgetown is located in Lower Midcoast Maine near Bath. It was incorporated in 1716, and was the 10th corporate town in Maine. The population was 914 according to the 1990 census. With an area of 18.5 square miles, Georgetown has 82.77 miles of shoreline.<sup>30</sup>

“Georgetown, a.k.a. Parker's Island, along with Arrowsic Island and Phippsburg across the river, boasts a great deal of English colonial history dating back to 1607 when the Plymouth Company in England chose the Sagadahoc, the mouth of the Kennebec River in Maine, to begin colonizing America.<sup>31</sup> The colony located on Atkin's Bay, survived for only a year before abandoning the fort and returning to England. Their only success was a demonstration project, constructing and launching a small ocean-going vessel, the pinnacle *Virginia*, which went into service for the southern colony at Jamestown when the northern colony was abandoned.

One of the English crewmen who participated in constructing the northern colony's fort was first mate John Parker of Devon, christened in Shobrook on the 25 of September in 1568. John Parker eventually decided to spend the balance of his life in Georgetown, building a home on a small islet at the head of Sagadahoc Bay. Four generations of Parkers lived there, between Indian wars, and many of their descendants still live close by, over 350 years later. Georgetown was known as Parker's Island until 1714 when it became part of the town of 'Georgetown on Arrowsic' along with the present Woolwich (1714), Phippsburg (1721) and Bath (1721).

This first John Parker (there were 8 of them over the next 7 generations) is believed to have managed a chain of fishing stations along the Maine coast for Sir Ferdinando Gorges, the earliest at Monhegan (c.1618),<sup>32</sup> Damariscotta (c.1622) and Parker's Neck at Winter Harbor (c.1630). It is not known when Parker established the station at Georgetown but it was probably many years before he acquired a deed to it from the Indian Sagamore, Robin Hood, in 1648.

Today, Georgetown's Reid State Park is one of Maine's most popular saltwater parks. Its “766 acres include nearly a mile and a half of sand beaches, dunes, marshes, ledges, and ocean, plus a warm saltwater pond for swimming.”<sup>33</sup>

<sup>30</sup> <http://www.georgetown.u47.k12.me.us/history.html>

<sup>31</sup> <http://maineusa.com/georgetown/>

<sup>32</sup> Samoset was the first Indian to make contact with the Pilgrims. He was a member of an Algonquin tribe that resided at the time in southeast Maine. He was a Sagamore of his tribe, and was visiting chief Massasoit. He spoke in broken English that he had learned from the English fishermen that came to fish off Monhegan Island, from off the coast of southeast Maine. Samoset was described the Pilgrims in this way: "He was a man free in speech, so far as he could express his mind, and of a seemly carriage ... He was a tall straight man, the hair of his head black, long behind, only short before, none on his face at all." [http://pilgrims.net/native\\_americans/samoset.html](http://pilgrims.net/native_americans/samoset.html)

<sup>33</sup> <http://www.state.me.us/doc/prkslns/reid.htm>

## *Demography*<sup>34</sup>

### Population

According to the 1990 Census, Georgetown had a population of 913, 451 male and 462 female.

### Age Structure

There were 65 children under 5, 136 school age (5 to 18 years), 581 between 18 and 64, and 131 were 65 or older.

### Education

Of those 25 years and older, 136 had no high school diploma, 158 had graduated from high school, 160 had some college, 135 had a Bachelor's and 62, a graduate or professional degree.

### Housing

There were 401 households in Georgetown in 1989, 305 of which lived in owner-occupied units. Fewer than half the 803 housing units were occupied (393). The median year the housing units were built was 1965 and their median value was \$111,000.

### Racial and Ethnic Composition

In 1989, the vast majority was white with only 2 Blacks and 1 American Indian.

## *Economic Context*

### Income

The median household income in 1989 was \$28,967.

### Employment

The Census counted 27 in the *industry* category of "agriculture, forestry and fisheries." Twenty-nine were counted in the *occupation* category of "farming, forestry, and fishing." Despite the small difference in these numbers, the discrepancy suggests some confusion among those sampled for the Census, or as noted earlier in this report, reflects the imprecision of Census numbers.

The largest industry category in 1989 was "manufacturing, durable goods" with 123 employees. However, it should be noted that Georgetown is right across the bridge from Maine's largest manufacturing employer, Bath Iron Works. Professional (including educational and health) services had 95 employees. Retail trade with 74 employees was third and construction with 38 was fourth. Fishing, etc. was 27 and the other categories were all under 20 employees.

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<sup>34</sup> <http://venus.census.gov/cdrom/lookup/978562855>

Community Profiles  
Sagadahoc County  
Lower Mid-Coast Maine

### 5.9.2.2. Phippsburg

#### *Background*

“Phippsburg is the location of the first colony in America, established in 1607, 13 years before the Pilgrims landed at Plymouth. For most [visitors], though, Popham means three miles of beautiful sandy beach for great swimming; natural rock outcroppings and tidal pools for interesting explorations; and an historic fort on the banks of the Kennebec River.”

In the late 1700's, Benedict Arnold landed here with eleven hundred and fifty men from Cambridge, Mass to attack the British in Quebec, Canada.”<sup>35</sup>

“Fort Popham, built during the Civil War in 1860 and never finished, is located two miles further down Route 209. The fort sits on the banks of the Kennebec River where it broadens into Atkins Bay, and offers views of Georgetown across the river. A second fort, Fort Baldwin, built during World War I as an observatory used to spot periscopes of enemy submarines, sits atop nearby Sabino Hill.”

Phippsburg noted in its 1990 annual report that more than 50% of its property taxes are paid by non-residents, reflecting the annual economic impact that tourism and summer visitors have on the area.<sup>36</sup>

#### *Demography*

##### Population

According to the 1990 Census Phippsburg had a total population of 1815, 918 males and 897 females.

##### Age Structure

In 1989, 102 children were under the age of 5, 329 persons were school age (5 to 17 years), 1153 were adults 18 to 64 years old and 231 were 65 and older.

##### Education

Of those over 25 years, 326 were not high school graduates, 440 had a high school diploma, 241 had some college, 165 had a Bachelor's degree and 77 had a graduate or professional degree.

##### Housing

Of the 706 households, 582 lived in owner-occupied units. The median value of housing in 1989 was \$100,700.

Phippsburg has 1224 housing units of which 461 are for seasonal, recreational or occasional use.

##### Racial and Ethnic Composition

The majority in Phippsburg was white with 1806 persons in 1989. There was also one Black, two American Indians, and six Asians.

#### *Economic Context*

##### Income

The median household income in 1989 was \$30,822 and the per capita income was \$13,818.

<sup>35</sup> <http://www.maineusa.com/hippsburg/about.htm>

<sup>36</sup> <http://www.cityofbath.com/>

### Employment

The 1990 Census counted 67 in the *industry* category of “agriculture, forestry, and fisheries.” However, there were 76 counted in the *occupation* of “farming, forestry, and fishing.” The discrepancy suggests some confusion among those sampled for the Census, or as noted earlier in this report, reflects the imprecision of Census numbers.

Manufacturing, durable goods had the largest number of employees in 1989 with 249. Professional and related services employed 166, retail trade employed 154, construction 77 and fisheries, etc. was 67. The other categories all had fewer than 36 employees.

Lower Mid-Coast Maine  
County Statistics

### 5.9.3. Cumberland County

Cumberland County, incorporated in 1760, has many famous historical landmarks and some of the state's leading educational institutions: Bowdoin College, Brunswick and the University of Southern Maine, the University of Maine system's second largest campus. Cumberland County was named for a county in England.<sup>37</sup>

With a population of 243,135 in 1990 and an estimated 1998 population of 253,582, Cumberland is the most populous of Maine's sixteen counties with almost a quarter of the state's population. It covers 853 square miles and its county seat is Portland, which is also Maine's largest city. Portland, South Portland and Westbrook are the county's three cities.

Cumberland's population consists of 116,765 males, 126,370 females.<sup>38</sup> Ninety-eight percent of the population is white, 44% of who claimed British Isles ancestry. About 15% of the population claimed French and French Canadian ancestry, 7% German, 5% Italian and 3% Scandinavian.

Sixty-five percent (157,458) of the population was born in Maine, only 4% (9,965) were born outside the U.S. (including those born abroad of American parents).

Elementary and high school enrollments in 1990 noted 36,676 pupils. Of persons 25 years and older, 85% (135,932) had at least a high school diploma, 27% (44,064) had a Bachelor's degree or higher.

"Agriculture, forestry, and fisheries" industry had 2201 workers cited. Median household income in 1989 was \$32,286 and per capita income was \$15,816. Of the 94,607 households counted, 26% received social security income and 16% received retirement income.

Of the 109,890 housing units, 60,812 were owner-occupied and 33,700 were renter occupied. The median year housing units were built was 1958 and their median value was \$117,800.

Towns include: Baldwin, Bridgton, Brunswick, Cape Elizabeth, Casco, Cumberland, Falmouth, Freeport, Gorham, Gray, Harpswell, Harrison, Naples, New Gloucester, North Yarmouth, Pownal, Raymond, Scarborough, Sebago, Standish, Windham, and Yarmouth

Brunswick, settled in 1628 along the Androscoggin River, was the former home of wealthy sea captains. Brunswick has been home to Bowdoin College since 1794, though its first class began studying in 1804. A third of Brunswick's men served in the Civil War, Harriet Beecher Stow wrote Uncle Tom's Cabin there and resident Joshua L. Chamberlain received the surrender of Confederate troops at Appomattox. Furthermore, the Kennebec River was an important escape route of the Underground Railroad. Today, the college has about 635 employees and over 1000 students

Brunswick Naval Air Station, employing 719 civilians in 1996 with 3,500 military personnel, 3,300 dependents and 2,250 retirees, is important to the town. Light industry, originally powered by the waterfalls along the Androscoggin River, included textiles, grist and saw mills in the early days. Irish and French Canadian immigrants, who arrived in separate waves, ran the mills. Today, Brunswick industry includes manufacturing of boots for L.L.Bean (2,056 employees in Brunswick and Freeport, up to 4,300 in the pre-Christmas season), fiberglass construction materials and electronic switching devices. In addition,

<sup>37</sup> <http://www.supt.sad37.k12.me.us/Maine/Counties/Cumberland.htm>

<sup>38</sup> Census data from which these summaries were derived can be found at <http://venus.census.gov/cdrom/lookup/953845849>

retail and the service sector complete the town's economy.

Peninsulas, islands and high headlands characterize Harpswell. Harpswell Neck, a thin peninsula, has working farms and scores of lobstermen. The other half of Harpswell is a string of three islands—Great, Orr's, and Bailey—linked by bridges. Mackerel Cove and Cundy's Harbor are two of the islands' important deep-water harbors. While the residential and summer cottage populations are expanding, fishing and lobstering remain critically important to Harpswell.

Federal permit holders list Harpswell as their address for 15 vessels. In addition, they list Harpswell's villages, South Harpswell for 16 vessels, Bailey Island for 16 vessels, and Orr's Island for 26 vessels. Other federal permit holders in the county list Bridgton (1 vessel), Brunswick (39 vessels), Cape Elizabeth (27 vessels), Casco (1 vessel), Cumberland (2 vessels), Falmouth (10 vessels), Freeport (12 vessels), Gorham (6 vessels), New Gloucester (1 vessel), Pownal (1 vessel), Scarborough (28 vessels), Standish (4 vessels), Windham (7 vessels) and Yarmouth (5 vessels).

It is important to note that lobstering dominates Maine's fishing industry. Since lobster fishing relies on state issued permits and tags, the federal permits do not necessarily accurately reflect the numbers of vessels in these communities.



Cumberland County, ME  
Lower Mid-Coast Sub-region

### 5.9.3.1. Portland

#### *Background*

In 1632 English settlers living on the Portland Peninsula initially changed its name from the Indian name, Machigonne, to Casco, then later to Falmouth. In 1652, the Casco Bay area became part of the Massachusetts Bay Colony but in 1675, was destroyed during King Philip's War. Once peace was restored in the first half of the 18<sup>th</sup> century, a commercial port was established. The Tate House, an estate built in 1755, attests to the elegant life of the British Royal Navy captain who served as Maine Mast Agent. Shipping grew rapidly after the Revolutionary War and ten years later, the town became known as Portland (1786).<sup>39</sup> Portland Head Light, built in 1791, is now Maine's oldest lighthouse.

In 1820, Maine became a state with Portland as its capitol. Shipping continued to grow and steamship service began, linking Portland with Boston. After the Great Fire of 1866 burnt most of the public buildings, half the churches and hundreds of homes, the city was rebuilt with brick, Victorian style.

Portland's historic connection to the sea is readily apparent along Commercial Street that runs along the city's working waterfront. The United States Custom House, the Maine State Pier, a Whaling Wall mural, an island ferry terminal, the Portland Fish Pier, a cruise ship terminal and DiMillo's Marina are all landmarks associated with maritime activities.<sup>40</sup> The Sea Dogs, Portland's baseball team also pays tribute to this heritage with their name. Waterfront zoning established in 1987 has helped the city retain the working port. Currently, the city is planning to improve its container cargo facility with emphasis on intermodal capabilities.

Portland acknowledges the importance of the fishing industry to the city. The Department of Transportation's recently hired Fisheries Manager is committed to maintaining diversity along the waterfront. "What's going to keep the port active? All businesses are cyclical. Need variety to maintain a working waterfront." She also provides a liaison service among harvesters, processors, transporters, aquaculturists, etc.

#### *Governance*

Portland has a City Council with 9 Councilors who appoint one of their members to serve as mayor. A city manager oversees the department heads and runs the day-to-day operation of the city.

#### *Demography*

##### Population

Portland had a population of 64,358 in 1989,<sup>41</sup> approximately 30,000 males and 34,000 females.

##### Age Structure

The largest age group falls in the 25 to 49 years old category with 26,585 individuals. Another 7,000 people are 50 to 65 years old; almost 10,000 are over 65 and a similar number under 11 years old. Just over 3,000 are teenagers in the 12 to 18 year category and nearly 7,500 are 19 to 24 years old.

##### Education

According to the 1990 census, about 8000 Portland residents speak a language other than

<sup>39</sup> Greater Portland Visitor's Guide 1999-2000. Portland: The Convention and Visitor's Bureau, 1999.

<sup>40</sup> This is Portland. Portland: Worcester Publishing Ltd. 1999.

<sup>41</sup> US Census Data found at URL <http://venus.census.gov/cdrom/lookup/953843648>

English at home, but only 900 of these were identified as linguistically isolated.

According to the 1990 census, 83% of the population over 18 years old graduated from high school. Almost 30% of the population over 18 has a Bachelor's degree or higher. The total number of elementary and high school students enrolled according to the 1990 Census was 7600.

#### Housing

Of the 31,293 housing units, 38% (11,895) are owner occupied and 52% (16,340) are renter occupied.

The median value of owner-occupied housing was \$112,300 and the median year housing units were built was 1939.

#### Racial and Ethnic Composition

In 1989, the vast majority of Portland's population was white (62,161) with about 1000 Asians, 700 Blacks, and 250 American Indians. Among the Asians, Cambodians predominated with over 300, Filipino, Japanese, Asian Indian and Vietnamese were almost equally represented with about 125 individuals in each group.

English and Irish ancestry dominated with French and French Canadian close in number. Italian and German ancestry was claimed by 5500 and 4000 respectively. Scottish, Hispanic and Polish descendents each numbered in the 2000 range, the other noted groups all had fewer than 1000 descendents.

Forty-one thousand residents (64%) were born in Maine. Almost 19,000 were born elsewhere in the U.S. Only about 7% were born outside the U.S. (including those born to American parents).

According to recent reports, these figures have radically changed since the 1990 census. Catholic Charities Maine has resettled 4,000 to 5,000 refugees in Portland in the last 20 years. However, seventy percent of the immigrant population in Portland is comprised of secondary immigrants, people who initially settled elsewhere in the U.S., but moved to Portland when they learned it is a safe city with a strong economy. Twenty-four languages are spoken at the city's most diverse elementary school including Serbo-Croatian, Khmer, Vietnamese, Somali, Spanish, Arabic, Russian and the African language Acholi.<sup>42</sup>

### *Economic Context*

#### Income

The median household income in 1989 was \$26,576 and per capita income was \$14,914. Of the persons for whom poverty status was determined, 8,783 had incomes below the poverty level.

Of the 28,235 households, 21,885 (78%) showed earned income in 1989. Twenty-seven percent (7,656) of households received social security income and 3,961 (14%) showed retirement income.

#### Employment

The census found 33,273 employed persons over 16 years old. Four hundred forty-nine individuals identified themselves as working in the "Agriculture, forestry, and fisheries" category.

### *Transportation and Access*

Portland is benefiting from Maine's efforts to upgrade air, rail and sea transportation infrastructure. Considerable investment has recently been made in improving intermodal freight handling capabilities, including purchase of a state-of-the-art crane for containers

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<sup>42</sup> "A city's changing face," The Boston Sunday Globe, July 30, 2000

and the development of separate freight and passenger terminals.

In addition, Maine's roads and bridges were ranked seventh best in the country in 1996. Seven thousand licensed truckers transport freight overland. The waterfront is easily accessible via Route 295 off Interstate 95.

Casco Bay Lines operates four ferry lines from downtown Portland to the nearby islands on a year-around basis. Greater Portland has its own bus system, The Metro. An international ferry terminal services ferries that travel to Nova Scotia. Portland is also a port of call for cruise ships, 50 are expected to stop in 2000.

### *Hospitals, schools, libraries*

Portland has two major hospitals. According to one respondent, the Maine Medical Center is considered the top heart center in New England. Mercy Hospital is also well respected. The Portland Public Library, Maine College of Art and the Museum of Fine Art are located in the Arts District of Portland. The news media is actively involved in community affairs, with personnel often chairing charity events, etc. While Maine is not considered a wealthy state, its people are generous and philanthropic. Successful charity drives usually have many small or medium donations rather than a few large donations.

### *Fisheries Profile*

#### Community

Portland clearly fulfills the definition of a fishing community on the basis of central place theory. Fish are legally sold ex-vessel to a dealer, processor or the public; fishing support services are provided; there are public facilities providing dockage; fishing people satisfy their daily and weekly social and/or economic needs here, and many fishermen and their representatives participate in fisheries resource management.

Though Portland is a diverse city with a variety of commercial enterprises including a growing service industry catering to tourists, fishing and fishing-related businesses retain a strong presence. The city affirmed its support of the fishing sector in 1986 when it joined fishing vessel owners and fish and seafood processors in a coalition to establish the Portland Fish Exchange,<sup>43</sup> in 1987 when waterfront zoning was established and in 1999 when a Fisheries Manager was hired.

#### Fish Pier

When discussions first began between city officials and fishermen concerned about waterfront development, only a city-owned fish pier was envisioned. Once a display auction was agreed upon, and with help from legislators, Economic Development Administration (EDA) funds were secured, Vessel Services, a fishermen-owned ice and fuel service, decided to move to the pier, as did the developers of the Marine Trade Center.

#### Display auction

Portland was the first city on the East Coast to develop a display auction for the sale of fresh fish. Though Europeans have sold their fish for years at display auctions, the East Coast fishing industry had long relied on a dealer-driven, sight unseen, daily auction of fish. For many years, the Boston auction set the prices for the whole region. The system favored the dealers and led to considerable abuse of fair trading practices.

By 1988, Portland's new auction faced potential bankruptcy, partially attributable to an awkward management system. However, with help from fishing industry participants, Portland City Manager Robert Ganley and a restructuring of oversight as well as the hiring of general manager, Dennis Frappier, the auction began to thrive. Just a few years after its founding, the Portland Fish Exchange attracted landings from fishermen out of ports as distant as Gloucester, New Bedford, and Rhode Island. More importantly, the system became accepted as an industry standard for which to strive. In December 1997,

<sup>43</sup> <http://www.portlandfishexchange.com/>

Gloucester opened a display auction modeled on the Portland Fish Exchange. However, the Gloucester Auction was sold in 2000 and may not retain all the laudable features of the Portland Fish Exchange. New Bedford also has a variation on the display auction, though as private enterprise, it has not quite matched the favorable reputation of the Portland auction and Gloucester auction's first two years of operation.

#### Future plans

More berthing for fishing vessels is needed along the waterfront. The city is considering establishing a revolving loan fund that would enable the revamping of the older piers and other infrastructure improvements.

#### Commercial fishing and fisheries-related employment

##### *Harvesting structure*

Trawlers, long-liners and gillnetters have traditionally worked out of Portland. In the early '90's there were 80-90 bottom trawls, 20-25 gillnetters, 4-6 longliners. There was also a seasonal midwater trawl fishery for herring. According to the 1992 NMFS permit files, 68 vessels listed Portland addresses, while in 1997, 51 did so. Only 24 vessels list Portland in both years, but 5 that listed Portland in 1997 noted other Maine ports in 1992.

For a short time, it seemed that Portland would lose its presence in the offshore groundfishery when there were only about 10 vessels remaining in the 80 foot and up category. When groundfish fishermen first faced major cutbacks in days-at-sea and other regulations, a number of vessels switched to herring, mackerel and squid. Other fishermen were able to successfully switch to lobstering using smaller boats. The federal boat buy-back program also temporarily reduced the numbers of groundfish vessels when, of the 51 vessels listing Portland as their address, seven participated in the buyback.

However, the always dynamic groundfish industry has begun to recuperate, some boats that diverted to pelagics were dissatisfied with the markets and price and returned to groundfishing, some vessel owners bought a second or third vessel, and some of those who sold their boats in the buy-back purchased other vessels. There are currently (in 2000) at least 18 large groundfish boats that regularly fish out of Portland. Furthermore, the fleet of small to mid-sized vessels has remained steady.

A constantly shifting population of boats complicates counting vessels in Portland. Vessels move to follow migrations of fish, avoid closed areas, access better markets, etc. Because of the auction, Portland commonly hosts transient boats that wish to benefit from the open system, particularly if they are fishing in the Gulf of Maine. Some Portland vessels move south in certain seasons and southern boats come north.

What has changed over time is the pattern of vessel ownership in the finfish fishery. Before limits were placed on groundfish days at sea, owner-operators of single boats were the rule. Now, the groundfish fleet is primarily comprised of owners of two and three vessels. Lobster boats, however, are still predominantly owner-operated.

##### *Processing structure*

According to *Fisheries of the United States, 1997*, Maine had 54 plants classified as processing plants with an annual average employment of 1,768.<sup>44</sup> Another 223 plants were classified as "Wholesale"<sup>45</sup> with an annual average employment of 1,516.

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<sup>44</sup> Fisheries of the United States, 1997. Fisheries Statistics Division, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, U.S. Dept. of Commerce. Any summaries that rely on federal reporting risk misleading numbers since confidentiality rules require National Marine Fisheries Service not to report figures when there are three or fewer firms in a category. For example, only two firms handle herring, so herring statistics are not included by name in Maine's Department of Marine Resources summaries. It is likely, however, that herring composes the majority of the "other fish" category.

<sup>45</sup> Based on Standard Industrial Classification 5146, reported to the Bureau of Labor Statistics

Portland has 21 processors of fresh and frozen seafood. Fifteen of the processors report sales of \$114,380,000. Six processors did not report their sales, but a key informant noted that three of these are fairly large companies and estimated sales at \$10-12 million. Two processors reported a total of 351 employees (1 processor did not report).<sup>46</sup> One processor is considered the largest shrimp processor in the state.<sup>47</sup> Urchin processing is also done in Portland.

#### Labor shortage

Interestingly, it is not the lack of fish, but a shortage of labor that may be the limiting factor in the growth of processing in Maine. Wages are significantly higher in entry level and service jobs than they were in the past, but processing jobs have not kept pace. Families that served the processing industry for several generations lost their positions to cheaper immigrant labor, then the plants lost the immigrant labor pool to stricter immigration regulations and to more appealing work with equivalent pay outside the plants. Currently, some plants now rely on prisoners on work release.

Young people who in the past might have stayed in the fishing industry as part of a family tradition are continuing with school and are leaving the state seeking better opportunities. One key informant noted that high taxes, labor issues and Maine's harsh climate contribute to a lack of growth in middle-management level jobs.

#### *Support Services*

As noted above, the Portland Fish Exchange is central to the handling and marketing of fish landed in the city. In May of 1998, the Fish Exchange's board of directors hired Wendi White as the new general manager of the 30,000 square foot cooler building and offloading facility. Temporary help supplements the full-time staff of 30 employees during the busiest seasons.

Seller representatives attend the daily auction to oversee the sale of their fishermen clients' catches, to agree to or refuse the price offered and may collect the agreed upon payment.

Vessel Services provides ice, fuel, and bait to commercial fishing vessels. Fishermen from various coastal communities and the Maine Fishermen's Cooperative Association organized it in 1979.<sup>48</sup> Through their services, vessels are able to obtain supplies, including more than 3300 items, much more efficiently than before. The company employs 17 to 18 people.

Vessel management services may provide financial management, permit acquisition, hiring, maintenance planning, logbook reporting, and operations planning. Other companies and individuals offer similar services. New England Fisheries Management Council member and vessel owner, Barbara Stevenson, for example, serves as a sales rep and vessel manager in addition to maintaining a widely read web site.

From 1998 to 1999, the fishing industry was one of several Maine industries to experience dramatic growth in exporting. In 1998 Maine exported \$96,775,286 worth of fish products and in 1999, \$148,035,604, a 53 percent increase.<sup>49</sup> Part of this increase is attributable to port upgrades, tax incentives for business growth, and improved access to information about exporting through the establishment of the Maine International Trade Center (MITC). Beginning in 1995, Maine began to invest \$80 million in upgrading the ports of Portland, Eastport, Searsport and Winterport. In 1996, the MITC was established (see below).

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<sup>46</sup> The Portland Area Nynex Yellow Pages, August 1996-July 1997, lists 29 processors and wholesale fish and seafood companies. Five additional firms are found in South Portland. Four companies are listed as Fish and Seafood Brokers.

<sup>47</sup> Resource Trading Company, according to journalist Art Mayers, May 18, 2000.

<sup>48</sup> <http://www.vesselservices.com/Master/history.htm>

<sup>49</sup> "Exporting from Maine" in Northeast Export May-June 2000.

*Employment (year-around and seasonal)*

Respondents estimated 300 to 400 households are directly dependent on commercial harvesting; around 1500 to 2000 others are thought to be indirectly dependent.

*Sales/revenue*

Ninety percent of the groundfish landed in Portland goes through the auction for sale, generating approximately \$25 million in sales annually. However, two species with significant landings in Portland, herring and lobsters, are not handled by the auction but probably sell for \$25-50 million. In addition, the \$124-126 million in sales of processed fish add significantly to the value of fisheries products to Portland.

*Species, Seasonality*

Whiting and redfish dominated Portland's fishing industry in the 1960s and '70s. At the same time, the foreign fleets were heavily exploiting cod and herring. By 1980's the Magnuson Act had been implemented and redfish stocks had begun to diminish, so Portland's fleet turned toward groundfish. Cod, pollock and hake were the most significant species, that is, they had the highest landings in the early 90's. Significant quantities of cod, pollock and hake are still landed but key respondents noted that monkfish, plaice (dab) and witch flounder (grey sole) are increasingly important.

While shrimp is said to be characterized by a six or seven year cycle (up to a peak and down), in 1997 landings of shrimp were third, following herring and lobster. When shrimp is available, it provides an important component of many fishermen's "year." Redfish diminished to virtually no landings, but is slowly recovering. Portland rivals Rockland (Maine) in annual herring landings. Lobster plays a critical role in Portland's fishing industry, as a commodity that is landed and/or shipped through the city and as a product that is processed and then shipped (value-added).

Summer was once the "big season for fish" but because of days-at-sea regulations, fishermen now "fish for dollars, not pounds" so they try to choose the season when they are most likely to obtain the best return per day. In 1997 October and September had the highest landings of the year, followed by August, June, April, May and November. February, December, March and January had lower quantities of landed pounds. Shrimp is landed December-May; lobster landings are almost year around, but are concentrated in July-December.

The top ten species landed in Portland in 1997 (in order of pounds landed): herring, lobster, shrimp, plaice (dab), cod, witch flounder (grey sole), pollock, monkfish, white hake and silver hake.

**Landed species include:**

Groundfish: cod, cusk, flounders (American plaice/dabs; witch/grey sole; fourspot; winter (a few); yellowtail (some)), haddock, hake, halibut (a few), pollock, pout,

Pelagics: herring, mackerel

Crustaceans: lobster, crab

Shellfish: conch/whelks, mahogany clam, mussels, periwinkles, scallops, sea urchins, and softshell clam

Small mesh: shrimp, squid (some illex), whiting

HMS: swordfish (occasionally), tuna

Other: bluefish (sometimes), dogfish, eels (slime and conger), redfish, sea cucumbers, shark, skates, striped bass and sturgeon (not commercially), tilefish (occasionally), wolffishes

Seaweed—dulse, rockweed

*Form of ownership (e.g., owner/operator; corporation)*

The majority of groundfish vessel owners have two boats or three vessels each. While several owned up to four vessels in the '90's, some sold their extra vessels as the stocks

diminished and regulations ballooned, making business planning more difficult. However, several of those who owned only one vessel in the early '90's have bought an additional vessel. Several who sold their vessels in the buy-out have replaced them and at least one latent permit has been activated.

Those who were content with one vessel before the imposition of limits on groundfish days-at-sea (DAS) have purchased a second vessel in order to be able to fish more of the year. This is particularly true among the small to mid-sized vessels that had to take the fleet option of DAS (currently, 88 allowable days).

#### Recreational fishing and employment

Respondents indicated that there was limited recreational fishing out of Portland and only two marinas were noted. However, there are five marinas in South Portland and others in the vicinity. Fishing charters are available out of South Portland and one company takes tourists lobstering.

#### Cultural role of fishing

##### *Museums and history*

Portland Harbor Museum (formerly known as Spring Point Museum) focuses on the history and development of Portland's port.

Gulf of Maine Aquarium Corporation is in the process of raising funds to develop an aquarium and marine research institute in Portland. The director has been actively engaged in helping the groundfish industry identify research needs for the Gulf of Maine. The site of the Naval Reserve Training Center is being eyed as a potential site for the aquarium though some in the city consider it an inappropriate use of scarce waterfront property. Traffic and parking issues also fuel concerns among opponents to the use of this site.

On Middle Street, one of Portland's main streets, a statue of a lobsterman measuring the carapace length of a lobster attests to both the importance of the fishing industry to the city and the lobster industry's adherence to measures that attempt to assure sustainability.

##### *Cultural events*

The Blessing of the Fleet was an important festival for the industry for many years, but was cancelled four years ago in protest against the carnival atmosphere that had developed around the waterfront during the Blessing. The Maine Fishermen's Wives, who had been the organizers, believe the blessing should be a solemn event. Portland's Fisheries Manager is trying to help resurrect the tradition during OpSail celebrations, honoring the solemnity by holding the blessing early in the morning.

OpSail will bring in the Tall ships for viewing and will attract a host of educational exhibits on the waterfront.

Yarmouth, a neighboring town, holds a clam festival in July.

##### *Ethnicity in the fisheries*

The fisheries reflect the general population of Portland, with most participants having English, Irish or French ancestors, and is generally considered typically Yankee American. In addition, there is a significant group of Italian-Americans who have been part of the groundfish industry in Portland for several generations. Cambodians and Afghanis have found work in the processing plants of Portland and South Portland. Catholic Charities often sponsored immigrants who found work in plants in both New Bedford (MA) and Portland.

##### *Kinship & family*

As noted above, fewer children are automatically choosing the fishing industry for their careers. In some cases, the industry has changed, eliminating some family "inherited" jobs.

For example, since most groundfish goes through the auction, which has employees who unload the fish, kin serving as lumpers is no longer common. The limitations on licenses/permits have also made fish harvesting more difficult to enter than it was in the past.

*Where fishermen go for coffee*

Open 362.5 days per year from 4 am to 9 p.m., Becky's, a diner next to the Portland Fish Exchange, attracts fishing industry participants for coffee and reasonable, tasty meals. One respondent, however, noted that it has become a "yuppie" spot and no longer attracts as many fishermen.

*Where fishermen go for beer*

Angie's and the Sail Loft are said to be two favored spots.

Fishing related organizations and their roles in the community and fishery

*Commercial fishing associations*

**Associated Fisheries of Maine (AFM)**, particularly the Groundfish Group Has a representative attend Council meetings and other venues of interest to speak on behalf of its members and to keep members apprised of the changing regulatory environment.

**Maine Urchin Harvesters Association**

**Maine Fishermen's Cooperative Association** (actually in Cundy's Harbor) helped organize Vessel Services, Inc. (see above)

*Fishermen's Wives associations*

Maine Fishermen's Wives Association is active in helping promote fishing interests and provides support services when a need arises. Early in 2000 they helped organize successful fundraisers for families of those lost when the F/V *Two Sisters* sank.

*Maine Fishermen's Forum*

Though held in Rockland, Maine in March, the Maine Fishermen's Forum attracts participants from all over the state. Some Fishing industry participants from Portland are members of the board of the Forum and therefore play a role in setting its agenda each year.

*Processing*

United Processors of Maine

Associated Fisheries of Maine (AFM) (see above) is a multi-sector organization that started as a processor association.

*International Trade*

Maine International Trade Center is a nonprofit created in 1996 combining the activities of the Maine World Trade Association, Maine Education and Training Export Partnership, and the International Trade Division of the Maine Department of Economic and Community Development. Services include organizing trade missions, conferences, training programs, expositions, providing counseling, access to a library, and trade leads. Recently it has also created the Clipper Export Trading Program, intended to help producers market their "made in Maine" products internationally.

Fishing-related programs and services

*Other NGOs*

**Coastal Enterprise, Inc. (CEI)**, a nonprofit community development corporation, contributed \$815,000 in 1998 to various fisheries-related enterprises that, among other things, permitted the Portland Fish Exchange to make upgrades to their refrigeration system and helped a start-up fresh fish market open in Portland's new Public Market. In addition, they maintain a Fisheries Revolving Loan Fund dedicated to maintaining and developing a sustainable fishery and industry infrastructure, and have a Shellfish Growers Revolving Fund



for shellfish aquaculture. CEI's "Fishtag" program encourages fishermen to supply biological data to fisheries managers in an effort to develop cooperative research and management.<sup>50</sup>

Instrumental in starting the Maine Fishermen's Forum in 1975, the **University of Maine's Sea Grant Program** has continued to work closely with the fishing industry in the Gulf of Maine to identify issues and problems, and then to use university resources to find solutions. It also supports the Maine Lobster Institute.

### **Waterfront Alliance Boston Seamen's Friend**

**U.S. Coast Guard** Group Portland, Maine has a station in South Portland, a Marine Safety Office in Portland and an Aids to Navigation Team in Portland.

#### *Training institutes*

**Coast Guard** offers safety at sea courses and/or workshops

**Fishing Community Resource Center** offers retraining to those who wish to leave the fishing industry. Navigation training is offered by a private company to those interested in passing Coast Guard exams for various licenses.

## **Perceptions of the Fishing Community<sup>51</sup>**

### **Importance of fishing to the community**

Fishing is considered important not only for its financial contribution to the city (considerably over a \$100 million dollar industry for Portland),<sup>52</sup> but as "one of the oldest industries, it attracts tourists and it fits Maine's philosophy." While the city wouldn't disappear if the industry did, since it composes only about 10% of the city's gross product, it is considered culturally important to the city.

One respondent was adamant that the fishing industry has a greater economic impact than is generally acknowledged because of the confidentiality issues associated with statistics collected by National Marine Fisheries Service. Respondents estimated "300 to 400 individuals are directly dependent on fishing, the ripple effect could involve six indirectly dependent for each directly dependent."

Most of the fishermen in Portland are from Maine and are year-around harvesters.

### **Boundaries**

Asked what city Portland has the most contact with, respondents indicated that as a city with a variety of fishing industry services, Portland is fairly self-sufficient. However, Gloucester was cited as the other community with which people of Portland had the most contact. For most of the contacts, respondents cited "Greater Portland." The exceptions included: "buying fish gear" for which they added Gloucester, New Bedford and Rhode Island and "hauling out for boat repair" for which Gloucester was added. For the bank, Production Credit (elsewhere in Maine) was listed. Vacations are said to be taken in Maine or "away."

### **Communication Issues**

Generally, respondents indicated that local officials have not paid very much attention to the industry, communication was rated as "poor to fair," with the exception of some support

<sup>50</sup> <http://www.ceimaine.org/fisheries/>

<sup>51</sup> Based on key informant interviews

<sup>52</sup> According to Peter Anania, Portland Fish Exchange president, the exchange annually generates \$350 to \$400 million in direct and indirect income to Maine's economy. Quoted in the Port Report found at [http://www.portlandfishexchange.com/port\\_report.htm](http://www.portlandfishexchange.com/port_report.htm)

of the Fish Pier development in 1986. The current mayor, however, is starting to take more of an interest.<sup>53</sup> Respondents found the communication with federal managers and representatives “fair,” with the possible exception of good communication with one or two Council members.

According to one respondent, the “old Yankee” fishermen of Maine are less well organized than fishermen of other ports, they tend to be quieter and so are less likely to be “heard” in the management process. They are said to be “less politically savvy” in contrast to “Rhode Island that has a strong political lobby and Gloucester that is favored by the regs and caused some of the problems.” There is no existing database of all fishermen and no mechanism to reach fishermen quickly or on a regular basis.

Also, “what’s happening to S-K (Saltonstall-Kennedy) money?” one respondent asked.

### **Assessments**

Respondents agreed that scientists and fishermen “strongly disagree” on stock assessments. One of the common complaints is that the landings naturally fell when the mesh size was increased, but the decreased landings were then used as an indicator of lower stock abundance. Also, before the Hague Line was drawn, 25% of landings came from what is now Canadian water.

However, most also agreed that there is a recognition in the industry that there is a problem with some of the stocks, though there is no agreement on what should be done. Regulatory discards are also an extremely sore issue with many harvesters.

### **Local management practices**

Five to ten years ago, an industry group led by Roger Woodman, suggested closing inshore areas to small mesh dragging for 8 months of the year, however, neither the state nor the Council instituted such a rule. Maine also was early supporter of larger mesh sizes for conservation, but the Council did not institute these.

### **Economic changes over time**

Ten years ago, the economic condition of the fishing industry was classified as “average” to “good.” The Portland Fish Exchange was making a difference in the marketing of fish so groundfish harvesters saw an increase in their earnings.

Five years ago, there were still reasonably high volumes of fish coming in, but reports of the downturn in the stocks and the increase in regulations, especially the implementation of Amendment 5 to the Multispecies Plan, caused a great deal of apprehension.

The fishery is said to be much less dynamic today (1999). The businesses that have not failed are beginning to stabilize. Vessel owners and captains are more analytical about their strategies, so they make more money with less volume than in the past. Dealers remain concerned about product, but the auction has attracted additional vessels. Also, processors are no longer wholly dependent on local product. This is a trend in the major processing centers of Boston, Gloucester and New Bedford as well. When economists predicted that prices would go up when supplies diminished with effort controls (associated with regulations), some fishermen warned that the global market would allow processors access to product and therefore prices would not compensate for lower catches. They also worried that once local harvesters/suppliers lost their markets (being unable to provide sufficient product) that they would never regain them.

Five years from now the economic condition may improve since it appears that the offshore stocks are rebuilding. Survivors in the industry will be accustomed to the regulations and perhaps there will be increased effort with less waste, unless fishermen are only a minor

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<sup>53</sup> The city has recently created the post of Fisheries Manager in the Office of Transportation. Judy Harris was a consultant to the industry prior to accepting this position.

factor in the diminishment of the stocks. It is possible that coastal development and climate change could be negatively affecting stock abundance.

Standards of living vary with individuals. Some respondents replied that their standard of living has gone down in the last five years, others said that it has kept pace with other industries. Most agreed that stress has increased.

### **Effects of recent management**

Negative impacts of the regulatory changes are that many vessels have gone out of business, some individual's incomes have gone down, the dynamism of the harvesting side of the industry has diminished. According to some key informants the cumulative impact of Amendment 5 and Amendment 7 (to the NEFMC Multispecies FMP) is what has had the most impact in Portland. One respondent noted that "the Magnuson Act was the impetus for capitalization and for what has happened." Lobstering success, though, is often attributed to the downturn in codfish stocks.

Those who chose to switch to herring, mackerel and squid, in order to relieve some of the pressure on groundfish, according to one key respondent, have had a struggle to survive, mainly because prices have dropped (1999).

Satisfaction with their work has diminished among fishermen, according to key respondents. Even for those who have managed to continue making a living, morale has been negatively affected by regulatory change.

However, there are indications that capital is returning to the industry. While there are not additional boats, there are improvements being made to vessels, gear, and shoreside facilities. These are improvements for those who have survived. One major negative effect of current species-specific permit management is that there is that fishermen cannot switch fisheries even when stock conditions, or other factors, would recommend such a change.

### **Characteristics of local fishermen**

Asked what makes a good fisherman, respondents mentioned professionalism, commitment and independence (or wants to work for themselves) and an appreciation of high adventure. Most fishermen network with selected others, sharing some information about fishing success. Cell phones have become popular, in part because of their relative privacy. In the past, when everyone monitored the radio, information given to friends would have to be in code if it were to remain secret.

Job satisfaction has taken a downturn with the changes in the fisheries. Morale is said to be low because most fishermen chose fishing in part because of the sense of "independence" and adventure the job offered. Respondents noted that independence is no longer possible, that the regulations dictate the choices. Many would leave fishing if they thought they could make the same amount of money within three or four years. Even among the lobster fishermen, the satisfaction is less than before because of crowding and trap buildup.

Fishing is safer now than it was in the past because the marginal people had to go [i.e., could not financially survive with the changes] and because of improvements in safety equipment. Nevertheless, the loss of a vessel in early 2000 was a painful reminder to the city and the industry of just how dangerous fishing remains.

### **Fishing families**

Fewer spouses seem to be directly involved in the fishing industry than in the past, though more spouses are working outside their home both because of "the times" and the uncertainty in the industry. Though a few still "keep the books," most working spouses have jobs outside the industry. Nevertheless, the Maine Fishermen's Wives Association remains very active. Email and the Internet have helped make the distant ports less isolated and have allowed women who work outside of the industry to retain a voice.

Vessel owners generally own cell phones, a truck, and a house and they have health and life insurance policies. Crewmembers are less likely to own such property.

None of the respondents wanted their children to stay in the industry, primarily because it is no longer a growing industry and they believe the regulations constrain the ability to plan, "they change with the wind."

**Advice**

One respondent noted that they would like to see more understanding, basic research to support the industry, such as the development of reproductive models. *"I'm advocating mixing harvesters and researchers. Research could be less expensive if done in cooperation with fishermen to support or refute hypotheses. Such a symbiotic relationship could benefit everyone."*

Community Profiles  
Cumberland County, ME  
Lower Mid-Coast Sub-region

### 5.9.3.2. Harpswell

#### (With Cundy's Harbor and South Harpswell)

##### *Background*<sup>54</sup>

Peninsulas, islands and high headlands characterize Harpswell. Harpswell Neck, a thin peninsula extending 10 miles into Casco Bay from Brunswick has working farms and scores of lobstermen. The other half of Harpswell is a string of three great islands—Great, Orr's, and Bailey—linked by bridges. Mackerel Cove and Cundy's Harbor are two of the islands' important deep-water harbors. While the residential and summer cottage populations are expanding, fishing and lobstering remain critically important to Harpswell.

"Harpswell was originally called 'Merriconeag' which is the Indian name for 'Quick Carrying Place.' Near the town line between Brunswick and Harpswell the peninsula is so narrow the spot was used by the Indians as a carrying place from one bay to the other in their canoe expeditions."<sup>55</sup>

First settled in the mid 1600's, Harpswell 'neck' along with Sebascodegan Island was purchased from the Indians in 1659 by Colonel Shapleigh of Kittery. By 1714 there were only two settlers on the neck, the rest having been driven off by the Indians. By 1731 many settlers had returned and Harpswell was incorporated as a town in 1758—a distinction it has enjoyed to the present under the Massachusetts Bay Colony, the State of Massachusetts and the State of Maine.

Harpswell is a community full of history, legend, fishing tradition, old farmhouses and sea captain's homes. The tall ships, sloops and schooners built here during the 1800's were famous world wide. The names Stover, Skolfield, Curtis and Estes evoke bustling shipyards of the past. The area has long been a mecca for summer vacationers and its rock-ledged, wooded and marshy terrain make it an ideal nesting place and summer resort for many species of birds.

"Many well known American writers have called Harpswell home at some point in their lives. Harriet Beecher Stowe of *Uncle Tom's Cabin* fame also wrote *The Pearl of Orr's Island* when she spent the summer on that island. Ragged Island was the summer home of Maine poet, Edna St. Vincent Millay. Elijah Kellogg, the eloquent pastor of the present day Congregational church that bears his name, wrote 30 books for boys among them his Elm Island and Pleasant Cove series back in the 1840's. Robert P. Tristram Coffin who spent his childhood on Pond Island based his book *Lost Paradise* on his recollections of island life there. Harpswell continues to be home to many present day authors and artists.

Admiral Peary the Arctic explorer owned a home on Eagle Island. It is now run by the State of Maine and is accessible by boat to summer visitors who tour the house and picnic on the grounds. Admirals Peary and Macmillan both attended nearby Bowdoin College along with Nathaniel Hawthorne, Henry Wadsworth Longfellow and Franklin Pierce among other notables."<sup>56</sup>

"Historical sites and places of interest abound in Harpswell but two of these deserve special mention here because of their unusual qualities. The Cribstone (or honeycomb) bridge ... 'the bridge that divided a town is unique in all the world but it caused one of the longest

<sup>54</sup> The majority of this section is adapted from the Harpswell Business Association web page:

<http://www.harpswellmaine.com/>

<sup>55</sup> <http://www.harpswellmaine.com/>

<sup>56</sup> Ibid.

and bitterest fights in New England' history.<sup>57</sup> Built in 1928 of huge granite blocks using no mortar or cement it connects Bailey and Orr's islands. The blocks are laid crib fashion - first lengthwise, then crosswise to accommodate swift tides and battering winter ice.

The old Meeting House in Harpswell Center is the oldest building still standing in the Brunswick area and perhaps the oldest meeting house in Maine. It stands exactly as it did in 1759 – older than the United States of America and built when Maine was just one part of the far-flung Massachusetts Bay Colony. The structure is so valued by the National Association of Architects that 12 blueprints are filed in the National Archives in Washington, DC so that the building may be recreated if the original were ever destroyed. It is a National Historic Landmark and several unusual architectural features, such as the 'shipknees,' the 10-foot high pulpit and sounding board and the pumpkin pine pews, make it invaluable.

The cemetery behind the meeting hall brings to mind the many legends passed down by tradition such as the 'witch of Harpswell' who was buried there, the reputation Pond Island has for being haunted and the spooky ghost ship last 'seen' in the 1880's. The ship was always sighted just before the death of a Harpswell resident and John Greenleaf. Whittier tells the tale in his poem, 'The Ghost Ship of Harpswell.'<sup>58</sup>

### *Governance*

Harpswell has three selectmen and a town clerk.

### *Demography*

#### Population

According to the 1990 Census, Harpswell had a population of 5,012 living in 2,029 households. Of the 5,012 persons, 2,537 were male and 2,475 were female.<sup>59</sup> The village of Cundy's Harbor has a population of about 300 households in winter, 400 in the summer.<sup>60</sup>

#### Age Structure

The median age was 37.9 years, with 1,048 persons under 18 (20.9 percent) and 783 (15.6 percent) 65 and over.

#### Education

Among persons 25 and over, 85.1 percent had graduated from high school or higher. Thirty-two percent had a bachelor's degree or higher.

Among the 4,840 persons 5 years and over, 221 spoke a language other than English and of these, only 69 did not speak English "very well."

#### Housing

There were 3,432 housing units in Harpswell. Of the 2,051 occupied units, 1,569 were owner occupied, 482 renter occupied. Of the 1,381 vacant units, 1,182 were considered seasonal, recreational or occasional use units. The median value of owner occupied housing units was \$152,100.

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<sup>57</sup> For many years, the fishermen who lived on Bailey Island wanted a bridge to connect their island with Orr's Island. For many years, the town of Harpswell turned down the request. But things changed when the Legislature approved a law allowing the State and the counties to participate in bridge funding. And in 1926, a contract was signed for construction of a new bridge. The granite slabs were sufficiently heavy to withstand the buffeting of wind and wave and the open cribbing or cellular construction permitted the tide to ebb and flow freely without increasing the normal tidal current to any appreciable degree. A concrete roadway was placed on top of the granite cribs. On July 19, 1984 the Bailey Island Bridge was dedicated as a historic civil engineering landmark. (See [http://www.state.me.us/mdot/maint\\_op/covered/bailevis.htm](http://www.state.me.us/mdot/maint_op/covered/bailevis.htm) )

<sup>58</sup> <http://www.harpswellmaine.com/>

<sup>59</sup> 1990 U.S. Census data found at URL [http://www.curtislibrary.com/census/harp\\_p3a.htm](http://www.curtislibrary.com/census/harp_p3a.htm)

<sup>60</sup> Based on key informant interviews.

### Racial and Ethnic Composition

Of the 5,012 persons only 41 were not white.

### *Economic Context*

#### Income

The median income for the 2,029 households in 1989 was \$33,298. Per capita income was \$16,952.

#### Employment

Of the 2,386 employed persons 16 and over, 269 noted an occupation of “farming, forestry, and fishing.” Only 3.5 percent were unemployed.

Outside of the fishing industry, jobs include all shipbuilding skills at the Bath Iron Works (a subsidiary of General Dynamics Corporation), laying floors, carpentry and cabinet workers, electrician, well-drillers, excavation, and such service personnel as gas station attendants and restaurant workers. Women also work in retail sales, bookkeeping, baby-sitting, nursing, waitressing, as support staff at the bait company, Bath Iron Works and Brunswick Naval Air Station.<sup>61</sup> In addition, there are faculty and staff positions at Bowdoin College, University of Southern Maine and the University of New England.

### *Transportation and Access*

Bridges connect the three large islands that comprise Harpswell’s eastern portion.

### *Hospitals, schools, libraries*

Harpswell’s World Wide Web site notes its proximity to Brunswick, home of Bowdoin College and numerous museums and galleries. In addition, Bath in the adjoining county of Sagadahoc County is home to the Maine Maritime Museum.

Harpswell has two elementary schools with middle school and High school attendance in Topsham. Middle and High school students living at the south ends of Harpswell Neck or Bailey Island ride 20 miles (one way) to school in the morning and afternoon.

### *Fisheries Profile*

#### Community

Harpswell fulfills the definition of a fishing community on the basis of central place theory. Fish are legally sold ex-vessel to a dealer, processor or the public; fishing support services are provided; there are public facilities providing dockage; fishing people satisfy their daily and weekly social and/or economic needs here, and some fishermen and their representatives participate in fisheries resource management.

Nevertheless, Harpswell is geographically spread out and comprised of several villages. NMFS landings and permit files identify five distinct addresses: Cundy’s Harbor, Harpswell, South Harpswell, Bailey Island and Orr’s Island.

Harpswell was described as being like “three towns.” There are the “commuters” who live in Harpswell, but work in Portland, Bath or Brunswick, usually in the new, highly skilled computer-based jobs. “Retirees” who have moved to Harpswell from away who bring their value system with them and impose it upon townsfolk through their volunteer work for town government committees. “Working townsfolk” include those who derive all or part of their income from the fishing industry, ironworkers, naval base and college support positions.

### Commercial fishing and fisheries-related employment

#### *Harvesting structure*

Three steel stern trawlers, 1 wooden stern trawler, 2 fiberglass trawlers (1 being built as of

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<sup>61</sup> Ibid.

summer 2000) and 30 to 40 lobster boats fish out of Cundy's Harbor.<sup>62</sup>

It is important to note that lobstering dominates Maine's fishing industry. Since lobster fishing relies on state issued permits and tags, the federal permits do not necessarily accurately reflect the numbers of vessels in these communities. In this case, thirteen vessels holding federal permits listed Cundy's Harbor as their address in 1997, 15 federal permit holders listed Harpswell as their address, South Harpswell had 16 vessels listed, as did Bailey Island, and Orr's Island had 26 vessels listed.

South Harpswell has 3 wooden vessels in the cove and about 50 fiberglass lobster boats. Two or three of the boats drag for mussels, 1 is crabbing and many switch to shrimp or scalloping in winter.

Mackerel Cove, Bailey Island had one forlorn groundfish vessel left in the early '90's that sank in September of 1997.<sup>63</sup> About 60 other boats ranging in size from 12 to 45 feet still fish out of Mackerel Cove. Fishermen trap lobsters, dive for sea scallops, drag for shrimp, and occasionally catch bluefin tuna or dive for sea urchins for the Japanese market.<sup>64</sup>

#### *Processing structure*

There is little local processing. Some of the restaurants buy lobsters; Cook's handles shrimp in season.

#### *Support services*<sup>65</sup>

Diesel fuel is locally available. There are about 80 moorings and though there are no wharf tie-ups, two berths are available for offloading. A boat finisher who works primarily on lobster boats is a resident, as are two welders. A company making and repairing propellers is also resident. There is a lobster retailer, though some lobsters are picked up directly by processors. The Coop wharf transships fish. For 10 cents/pound, they are weighed, put in containers and trucked. Usually only small lots are handled, vessels with large catches usually land in Portland. Tuna may be taken on consignment and shipped to Tokyo. Railways are available on the east side of the peninsula of Harpswell; other vessels go to Boothbay for repairs. Cooks Corner has an airfill station for divers. Watson's General Store offers some commercial fishing supplies.

The owners of Purse Line Bait, a primary bait supplier for midcoast Maine, live in Cundy's Harbor. This is considered an important feature of Harpswell and a "regional service company for Casco Bay's lobstering industry."<sup>66</sup> More than one supplier has a fleet of trucks that brings bait to the village.

#### *Employment (year-around and seasonal)*

About 50 fishermen live in the Cundy's Harbor area. Key informants estimated that half the population is indirectly dependent on the fishing industry (including trucking, etc.). Some fish part-time.

Over 50 fishermen were thought to live in South Harpswell. The typical annual round is to lobster most of the year, switching to scallops or shrimp in the winter. Fishermen who are not boat owners may opt to crew on groundfish boats out of Portland or Portsmouth. As in Cundy's Harbor, those who are not harvesters often provide services to the industry and thus are dependent on the fishing industry.

<sup>62</sup> Acheson et al. 1980 recorded seven draggers. Teresa Johnson (2000) reported that "in the 1980's there were 8-10 draggers, 1 gillnetter and 3 to 6 lobster/groundfish vessels fishing out of Cundy's Harbor. It was also estimated that in the early 1980's there were 20 groundfish vessels in the area around and including Cundy's Harbor...Currently, there are 6-7 draggers and 4-5 lobstermen who also groundfish."

<sup>63</sup> <http://www.LobsterVillage.com/index.shtml>

<sup>64</sup> <http://www.LobsterVillage.com/wharf.shtml>

<sup>65</sup> Key respondents listed these services.

<sup>66</sup> Key respondent.



About 100 fishermen are associated with Mackerel Cove, Bailey Island.<sup>67</sup>

*Species, Seasonality*

The NMFS landings data for 1997 specified Bailey Island, Cundy's Harbor, East Harpswell and South Harpswell. Sometimes one boat would land in all four harbors over the course of a month. Of all four ports, Cundy's Harbor was consistently the most active, both in pounds landed and numbers of vessels landing. Cundy's Harbor is also the principal groundfish port in the town.

Shrimp dominated landings in January, February, March, April, May and December. Sea urchin landings were strong in January and September through December. Lobsters were landed all year. Bluefin tuna was landed in moderate amounts June through September with July having the highest landings. June was the only month with any significant groundfish landings. Hagfish was landed June, July, August and October.

Urchining was described as "wild" for a six or seven-year period, but was overfished and is only a moderate fishery now. Periwinkles and conch fishing provide occasional or small-scale opportunities for some fishermen.

**Landed species include:**<sup>68</sup>

Groundfish: cod, dabs, grey sole, hake, halibut, pollock, winter flounder, yellowtail flounder  
 Pelagics: herring, mackerel  
 Crustaceans: lobster, crab  
 Small mesh: whiting  
 Shellfish: conch/whelk, mussels, periwinkles, quahogs, scallops, sea urchins, softshell clams  
 HMS: tuna  
 Other: bluefish (recreational), monkfish, menhaden, sea cucumbers, skate, slime eels, striped bass (recreational)  
 Seaweeds: rockweed

*Form of ownership (e.g., owner/operator; corporation)*

Owner-operator is the dominant form of vessel ownership.

Recreational fishing and employment

Cundy's Harbor has one "lobster-style" boat that hosts up to six anglers for fishing. South Harpswell also has one or two charter fishing boats in the summer.

Cultural role of fishing

*Religion and/or Values*

Harpswell formed a school district (MSAD #75) with second and third tier, inland towns, building a school that draws students from Topsham, Bowdoin and Bowdoinham in addition to Harpswell. Some of the Bowdoin College faculty's children attend the local high school, as do children of Navy personnel. They tend to have different attitudes and a different value system from the town's children.

*Monument*

Bailey Island has a bronze statute dedicated to lobster fishermen, originally created for the 1939 World's Fair.

*Kinship & family*

More women are involved in fishing-related businesses. Children are more likely to finish school, some going on for higher education. Most of the key informants responded like one who said that they would not "try to talk them [their children] out of it [fishing], but it's not for everyone."

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<sup>67</sup> <http://www.lobstervillage.com/>

<sup>68</sup> Ibid.

Fishing related organizations and their roles in the community and fishery*Commercial fishing associations*

Maine Fishermen's Cooperative Association

Maine Lobsterman's Association

*Fishermen's Wives associations*

Maine Fishermen's Wives Association

**Perceptions of the Fishing Community<sup>69</sup>****Importance of fishing to the community**

Harpwell boasts 216.8 miles of shoreline and a long tradition of fishing and other maritime occupations.<sup>70</sup> Fishing is considered very important to the villages. The majority of residents want the villages to retain their fishing identity, rather than become "suburbs of Portland."

**Boundaries**

Capital contacts can be divided up into those encompassing social capital (e.g., visit friends, go for recreation, go for vacation, visit relatives, socialize, go to church); economic (e.g., sell fish, offload fish, buy fishing gear, haul out for boat repairs, go to the bank, go shopping), and human (e.g., go to school, go for childcare, go for health care, go for retraining).

Contacts between buyers and sellers of lobsters are usually reciprocal. Harvesters generally buy bait and sometimes fuel and other supplies from the company that buys their lobsters.

The fisheries related services (i.e., economic capital contacts) used by Cundy's Harbor fishermen may be found on the island, elsewhere on the peninsula or in Portland.<sup>71</sup> Diesel fuel is locally available, though groundfish boats usually fill up in Portland. Shrimpers and lobster boats buy fuel locally. There are about 80 moorings and though there are no wharf tie-ups, two berths are available for offloading. A boat finisher who works primarily on lobster boats is a resident, as are two welders. A company making and repairing propellers is also a resident. There is a lobster retailer, though some lobsters are picked up directly by processors. The Coop wharf transships fish. For 10 cents/pound, they are weighed, put in containers and trucked. Usually only small lots are handled, vessels with large catches usually land in Portland. Tuna may be taken on consignment and shipped to Tokyo. Railways are available on the east side of the peninsula of Harpswell; other vessels go to Boothbay for repairs. Cooks Corner has an airfill station for divers. Watson's General Store offers some commercial fishing supplies, other suppliers are in Brunswick, Portland and Portsmouth. The owners of Purse Line Bait, a primary bait supplier for midcoast Maine, live in Cundy's Harbor. Vessel Services in Portland is another bait dealer, but more than one supplier has a fleet of trucks that brings bait to the village. Portland is where the primary fish auction is and where consultants and fishermen's associations may be found.

Banking may be in Brunswick, shopping is in Brunswick. Health care is available at two hospitals in Brunswick. Childcare is mostly handled by local young women. Visiting relatives is most often in the village, though may be Brunswick or elsewhere for some. Recreation involves the "sport of the season." Visiting friends is usually on the islands or in Portland.

Contacts for South Harpswell are similar to those noted by Cundy's Harbor fishermen, though Brunswick figures more prominently. Fish (finfish) may be sold at one wharf in Harpswell,

<sup>69</sup> Based on key informant interviews

<sup>70</sup> According to an excursion vessel guide, this is the longest coastline of any community in the U.S. (L.Goudey, 2000, pers. comm.)

<sup>71</sup> Much of what follows is a repetition of the section "support services" recorded earlier in this profile.

but often goes to the Exchange in Portland. Gear may be bought in either Brunswick or Portland; ice is bought in Portland. Dolphin Marina was specified for boat repairs as “finest kind.” Fuel and oil is available locally. Bookkeeping, bank, shopping, health care and some socializing are said to be conducted in Brunswick. The only recent change in contacts is that there is now a better general store in Harpswell, owned by a fishing family, so when possible, shopping is done there to save gas.

Technology is affecting the patterns of contact. With computers and the Internet, as well as cell phones, fishing industry participants are less isolated, even while working. Technology, however, is also attracting young people, enticing them away from employment in the fishing industry. This may prove to be a considerable problem for all, but particularly for the trip boats. Potential fishing crewmembers don’t want to be gone overnight.

### **Communication Issues**

Many of the lobster fishermen are friendly with Lobster Zone Council members and communication is described as “good.” One informant pointed out that the communication couldn’t be classified as “very good” because there is “no right answer, all depends on who you talk to.” Communication with one state level official was classified as “very good” however, because he lives in Harpswell and alerts the local fishermen to issues. Communication with others at the state level is not good. Communication with federal level officials is described as “poor” and even “abusive.” The “arrogance of rule-making people and some of the scientists” leads to a lack of respect and interferes with communication.

There are no local managers of fin fisheries and local fishermen do not usually communicate with state and federal managers or representatives.

“The average fisherman has no voice. In general, they might as well live on the moon. The disenfranchisement is mostly by choice. They are not academic achievers, they were treated as fishermen in school.”

### **Assessments**

Agreement or disagreement between fishermen and scientists is species dependent; however, fishermen’s local knowledge is usually ignored. Respondents said that most were comfortable with the shrimp assessments, attributing this partially to having a good relationship with Maine Department of Marine Resources scientist Dr. Dan Schick. The lobster assessments are viewed as farther from accurate, sea urchin fishermen and scientists are “openly antagonistic,” and the finfish assessments are way off.

One informant noted that the state and federal scientists often disagree with each other and offered an example of why there’s a “good degree of confusion.” In diving for scallops, the lack of visibility in Maine waters means that one fisherman may find nothing, but on a slightly different bottom there’s an abundance. The difference between a good fisherman and a bad fisherman may be a matter of 15 feet of depth, or a wrong turn. The problem with sampling is that it’s a “stab in the dark.”

Reportedly, there are some efforts to improve assessments. “DMR had observers go out, the length of the coast, sea sampling during different months, off a commercial vessel.” In addition, a couple of scientists have talked to and gone fishing with experienced fishermen. “When scientists were saying there were no large v-notched female lobsters offshore, fishermen were able to show them lots of them.”

### **Local management practices**

The state of Maine has instituted local management in the lobster fishery with a moratorium on licenses and an apprenticeship program. In addition, such conservation measures as v-notching egg-bearing females and having maximum as well as minimum size were initiated by fishermen. In the past, territories were important but are no longer enforced by the fishermen. Harpswell, for example, has been “invaded by boats from Freeport.” Now, the

investment is so great, with new boats costing over \$100,000 and a 10-trap string costing \$600 to replace, fishermen don't dare scuttle boats or cut the buoys off the strings of traps.<sup>72</sup>

### **Economic Change**

Twenty years ago, the fishing economy was good to excellent. Ten years ago, the economy was good to excellent with decent fish stocks and fewer regulations than now. Five years ago, there were more regulations, fewer fish, though lobstering was still considered good to excellent. Today, fishing is "almost at a stand still." Five years from now, dabs may become overfished. Because of the collapse of the codfishery, dabs, grey sole and monkfish became the staple of the fin fish industry, but monk fishermen are facing extremely strict regulations. In fact, no fin fishermen are currently able to make a living by targeting a specific species in the multispecies (groundfish) fishery.

Costs of lobstering have radically increased and there is over-capitalization (trap build-up), but the product has remained at the same price. To stay competitive, fishermen have to keep upgrading. The cost of boats and gear has increased. Bait (herring and redfish, formerly pogies as well) has gone up 36 percent. Trap prices were \$30, now are \$42 for a 36-inch trap. Four-footers cost \$58 to \$60 each, before rope and buoys. The differences in the traps are subtle, "some fish great, some don't."

Five years from now lobstering may be better, especially "if we have a couple of terrible years to get rid of new entrants." The local zone would like to reduce the numbers of lobster fishermen by 40 percent.

Young people can no longer afford to buy shoreline property. "York Beach and Falmouth are brimful of yachts coming this way."

### **Changes in fishing effort**

Effort on lobsters has increased with the buildup of traps. "Anybody who dreamed went from 100 pots to 800 when the limits on traps were imposed."

"There's less fish now and fish is further away; it's a young man's business." With the improvements in electronics, "there are no secrets any more. There's no mystery, no place for the fish to hide." Absentee ownership leads to the "Portland attitude of 'just catch the fish.' A hired captain's security is only as good as his productivity." Even some of the young people outside of Portland have adopted the Portland attitude and join in the fierce competition. In contrast, "Canada still has some sense of the 'connectedness,' the view that they are plying an honest trade, instead of just going after the buck." However, Canada also show greater evidence of a divide between the "have" and "have-nots." Most offshore fishing effort is based on company-owned vessels, a contrast to the inshore boats that are small and usually individually owned.

Labor woes are creating a serious constraint on traditional fin fishing. "We can't find anyone to go. The computer age has provided young people with more options. The only way you can find crew is to go down to Portland, prowl the bars and take aboard any drunk you can find who's willing to go out for a 3- 4- or 5-day trip." Between the technology that offers alternative job opportunities, the adverse publicity about fishing, and the management crunch, there are few individuals interested in going into fishing.

### **Effects of recent management**

"Fishermen need versatility, but it's voted down every time. Part of the problem is that fishermen are widely dispersed in Maine, so they are no threat to elected officials." The system rewards hard drivers. When individuals heeded the advice of the Council and switched fisheries such as to whiting and shrimp, problems ensued with the market. Canada, for example, flooded the market with cheaper whiting. "Exit our whiting fishery," one key respondent wryly quipped.

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<sup>72</sup> See Acheson re lobster territories

There is a perception that bureaucrats have to generate new rules to justify their existence. However, there are too many boats, several of the key informants agreed. Confusion was often expressed about the whole regulatory picture.

“Historically fishermen have had to cope with weather, fish cycles, price cycles, but NMFS, how do you deal with that?”

One informant suggested that draggers might be more often targeting lobsters than in the past because of restrictions on groundfishing. They then have to land the lobsters in Portsmouth or use a holding tank (to obscure the origins, since dragging for lobsters is not permissible in Maine).

The unpredictability of management was criticized. “I need to buy another boat, but I don’t know what the rules will be. That has an effect on the local economy and I have no control over my livelihood.”

Nevertheless, many fishermen refuse to accept social aid packages. They would rather do without than accept aid with string attached.

### **Characteristics of local fishermen**

Fishermen have to be willing to work hard and must be optimistic. They have to have a love of the water, be resourceful and not be going just for the money.

Generally, informants commented that fishermen do not share information, except “maybe, the time of day.” In fact, though, everyone mentioned that they had one friend or two, or possibly a close relative, they would share information with since they had worked together or were willing to reciprocate.

### *Safety*

Improvements in equipment, training, rules and communication have made fishing safer.

### Fishing families

Opportunities for women to work are greater now than in the past. There is also a greater desire for material things. With increased communication, there is also more awareness—both of “things” and jobs. Nevertheless, many wives still play an important role as ‘shore captains’ procuring food supplies and arranging for gear, etc.

More women may also work outside their homes now because the season is shorter and the cash flow more difficult. More women are directly involved in fisheries as boat owners and as helpers. Female sternmen were said to be more reliable than males because “they want to prove they can do it...Guys are usually younger, wild, unreliable.” One fisherman was said to have had 14 sternmen over the course of two months.

Children are not being encouraged to consider fishing as a career.

Sub-region Profiles  
Counties: Knox, Hancock and Waldo

## 5.10. Upper Midcoast Maine

### *Fishing Dependency in Upper Midcoast Maine*

Even a passing glance at the geography of Maine offers an obvious rationale for state's historical reliance on the sea. The rocky promontories and long peninsulas extending into the bays, the convolutions of the coast, and the diversity of marine life direct the human population seaward. While roads and transportation have radically improved in the last century, access between human settlements often remains faster and easier by boat than by road. This is particularly true for fishing communities that are found on the ends of the peninsulas. What might be a half-hour boat ride across a bay can be a two-hour drive up and down peninsulas. Consequently, while what we are referring to as Upper Midcoast Maine includes Knox, Waldo and Hancock Counties and the communities in these counties share many characteristics, they are not necessarily in close proximity or frequent contact.

There is a high degree of fishing dependency in this sub-region that is acknowledged by many of the residents. The picturesque aspects of the fishing industry are also cited in web sites and in tourist-related literature. There has been some effort to diversify the economy, however, so that opportunities for employment outside the industry do exist.

Nevertheless, the first set of indices (looking at employment) indicates that Upper Midcoast Maine is ranked second only to Downeast Maine in degree of fisheries dependency.

**Table 5a. Comparative Fishing Dependence Indices for Two Sub-NRRs**

Sub-NRR	A. % Related Occupations	B. % Of Total Employed	C. Alternative Occupation Ratio Summary
Downeast ME	45	3.6	255.54
Upper Mid-Coast ME	36	2.0	171.05

The second set of indices that measures degree of fisheries infrastructure differentiation ranks Stonington/Deer Isle (Hancock County) and Rockland (Knox County) 7<sup>th</sup> and 8<sup>th</sup> respectively, showing significant differentiation.

The third set of indices that measures gentrification shows that this sub-region has examples of both high and relatively low gentrification. Rockland (Knox County), for example, is ranked 5<sup>th</sup> among 36 ports (along with Newport, RI and Vineyard Haven, MA) for gentrification. On the other hand, Stonington/Deer Isle (Hancock County) is ranked 28<sup>th</sup> out of 36 (see Table 4h).

The profiles of Rockland and Stonington/Deer Isle support the indices indication that this region remains active in fisheries, but has also made some accommodation to other industries. The people of the Stonington side of Stonington/Deer Isle are particularly loyal to fishing as a "way of life." When groundfishing became increasingly difficult, particularly for the gillnetters who were severely restricted due to increased marine mammal protection, many switched their gear and target species to urchining and/or lobsters. Wives have traditionally played an active role, sometimes as shore captains and often as part of the "value-added" sector of the industry. Lobstermen would bring in whatever crabs showed up in their traps and their wives (or mothers, sisters or daughters) would pick out the crabmeat for additional income.

Stonington fishermen have developed various niche fisheries to make up for the downturn in groundfishing. Besides urchins, clams, sea moss, snails, hag fishing, oysters and sea cucumbers are sought. All respondents agreed that fishing is “very important” to Stonington and Deer Isle. It is a matter of local pride that fishermen developed conservation-management practices long before it became a state or federal matter. They still take the initiative in trying to improve management and support local fishermen.

In Knox County, on the other side of Penobscot Bay from Stonington, Rockland is redefining its role in Maine’s fishing industry. Though it has lost its status as one of the region’s significant groundfishing ports, Rockland too has turned to other species to maintain its standing in the fishing industry. Now, lobsters and herring both figure prominently in this community. In both cases, the landing, marketing, and shipment of the species seem to constitute a larger portion of the fishing-related activities for Rockland residents than do harvesting or processing. Particularly noteworthy is the network of economic contacts generated by the sale of herring for lobster bait to the islands and other coastal communities in Maine.

Diversification of the economy has also been the rule. Both tourism and service-based industries have increased in Rockland. Like Boston, Rockland may have sufficient economic activity to survive without the fishing industry, but considering the role it has in landing, marketing and shipping of bait in support of the lobster industry, one could argue that Rockland is an **essential provider** for the fishing industry in Maine.

Upper Mid-Coast Maine  
County Statistics

### 5.10.1. Hancock County

Hancock County, 1,522 square miles, was incorporated in 1789. The city of Ellsworth is the county seat. Hancock County has the longest coastline of any Maine county. Commercial fishing and tourism are the county's most important industries. Hancock County is home to Acadia National Park (the state's and New England's only national park) and Cadillac Mountain (the highest point on the Coast). Jackson Laboratory, noted for cancer research, is located in Bar Harbor. Two marine-related colleges are located in Hancock County— Maine Maritime Academy at Castine and the College of the Atlantic at Bar Harbor. Hancock County was named for John Hancock, the first governor of Massachusetts.

The 1990 Census counted 46,948, though the 1998 population estimate is 49,932.<sup>1</sup> The gender division was 22,996 males, 23,952 females in 1989. Ninety-nine percent of the population was white (46,446), 121 American Indians, 249 Asians, 79 Blacks and 52 "other."

Sixty-six percent of the population of Hancock County are Mainers by birth, 3 percent were born outside the US.

Of the 31,475 persons over 25 years old, 83% (26,214) had a high school degree or higher. Twenty-one percent had a Bachelor's degree or higher.

Of employed persons 16 years and over, 1108 indicated involvement in the "agriculture, forestry and fisheries" industry, though 1206 indicated "farming, forestry and fishing occupations." As noted earlier in this report, the U.S. Census data is not dependable for determining the numbers of individuals involved in the fishing industry. Only firms with 10 or more employees must report their numbers, as well as firms paying workmen's compensation insurance. Because the majority of fishermen in Maine are considered self-employed, the statistics underreport fishing employment.

Median household income in 1989 was \$25,247. Social security income was received by 5560 households (30%) and retirement income was received by 3312 households (18%).

There were 30,396 housing units, 13,876 owner-occupied and 4,466 renter occupied. The median year structures were built was 1964 and their median value was \$86,200.

Towns include: Amherst, Aurora, Bar Harbor, Blue Hill, Brooklin, Brooksville, Bucksport, Castine, Cranberry Isles, Dedham, Deer Isle, Eastbrook, Franklin, Frenchboro, Gouldsboro, Great Pond, Hancock, Lamoine, Mariaville, Mount Desert, Orland, Osborn, Otis, Penobscot, Sedgwick, Sorrento, Southwest Harbor, Stonington, Sullivan, Surry, Swans Island, Tremont (Bass Harbor), Trenton, Verona, Waltham, and Winter Harbor.

Of these towns, Cranberry Isles, Deer Isle, Frenchboro, Gouldsboro, Southwest Harbor, Stonington, Swans Island and Tremont (Bass Harbor) were identified by a key respondent as fisheries dependent. Bar Harbor, Brooklin, Brooksville, Hancock, Lamoine, Mount Desert, Penobscot, Sedgwick, Sorrento and Sullivan were also noted as having either significant fishing activity or a significant number of people who fish. Winter Harbor's fishing activities were once dwarfed by the economic activity associated with a naval base, but now that the naval base has closed, fishing activity will most likely be the dominant economic activity in the community.

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<sup>1</sup> <http://www.supt.sad37.k12.me.us/Maine/Counties/Hancock.htm>



Community Profiles  
Hancock County  
Upper Mid-Coast Maine

### 5.10.1.1. Stonington/Deer Isle

#### *Background*

Viewed from the widow's walk of a hotel overlooking the waterfront, Stonington appears idyllic. Lightly colored houses climb the rocky, hilly coast next to the gently rolling main street that runs parallel to the shoreline. In the calm water of the harbor, lobster boats bob gently at their moorings and a few small rocky islands are visible through the slight mist of early morning. Later on a sunny summer day, the waters froth in the wake of racing lobster boats and the fish pier is lively with families laughing at the antics of dory-rowing and survival suit race contestants. Crab-picking demonstrations, displays that include a beautiful quilt made by the fishermen's wives, and a late afternoon barbecue attest to the enduring fishing community.

Schooners from the Penobscot Bay windjammer fleet stop in Stonington Harbor and yachts and sailboats visit, but the commercial fleet dominates the harbor. Three excursion companies do offer cruises around the islands surrounding Deer Isle as well as trips to Vinalhaven, North Haven and Isle au Haut. A few seasonal gift shops, art galleries, restaurants and a bookstore cater to the visitors from away. Some of the residents fear the "influx of 'come-from-aways'" that are causing shifts in the businesses and land-use in the town.

Stonington is home to *Commercial Fisheries News*, an excellent monthly trade journal for the industry. Also at home here is the former Commissioner of the Maine Department of Marine Resources.

The Stonington-Deer Isle Chamber of Commerce's web site describes the island as a whole as "Downeast Maine at its best: an island, reachable by automobile over a high narrow suspension bridge, a cluster of quiet communities where fishing is the mainstay of the economy. The spruce-crowned pink granite ledges, quiet woods and open fields, vistas of islands and sparkling water lure visitors from nearby and far away."<sup>2</sup>

The description continues, "For more than a century, artists have come to Deer Isle." "Internationally known Haystack Mountain School of Crafts has brought many craftspeople..." "Writers, photographers and musicians add to the creative mix and often share their talents at public events."<sup>3</sup> "Art and craft galleries display work produced by some of the most accomplished artists in the country." "Antique, gift and bookshops invite leisurely browsing. The island has a wide variety of lodging accommodations, including B&Bs, motels and campgrounds with full hookups."<sup>4</sup>

While the description from the Chamber of Commerce quoted above describes the seasonal tourist attractions of the area, the reality, according to key respondents, is that what the island has year around is fishing. Stonington/Deer Isle has long been known as the place where "true fishing communities" can be found. Like communities Downeast, Stonington and Deer Isle residents have few alternatives to fishing. They express concern about their children's futures—if there are too few fishing jobs, the children will have to leave to make a living.

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<sup>2</sup> <http://www.acadia.net/deerisle/>

<sup>3</sup> <http://www.acadia.net/deerisle/>

<sup>4</sup> This glowing picture of available accommodations was contradicted by a resident who said that there is a chronic shortage of seasonal housing in the area.

## *Demography*<sup>5</sup>

### Population

The population of Deer Island/Stonington was recorded by the 1990 Census as 3,081 with 1,504 males and 1,577 females.

### Age Structure

The count of total children (3 to 19 years) was 660; 547 were enrolled in school.

### Education

Of those 20 years and over, 928 were high school graduates, 468 had some college, 361 had at least a Bachelor Degree and 524 had no diploma.

### Housing

There were 2,331 housing units in 1989. At the time of the Census, 1,245 were occupied; 988 by owners, 257 by renters and 1086 units were vacant. The median housing value was \$76,339.

### Racial and Ethnic Composition

In 1989, 3,034 persons (99.09 percent of the population) were white. Six Blacks, 1 American Indian, 2 Asians, and 19 Hispanics also lived in the area.

## *Economic Context*

### Income

Median household income in 1989 was \$20,824 and per capita income was \$10,619.

### Employment

There were 1,416 people in the labor force including 105 unemployed.

## *Transportation and Access*

At the southern end of Deer Isle, Stonington is accessible via Maine's meandering Route 15, a very slow 36 miles south of the intersection of Route 15 with U.S. Route 1.<sup>6</sup> (Also, accessible via Route 172 and Route 15, about 36 miles to Ellsworth.)

Stonington has a general aviation airport with a runway that was repaved in 1997.

The Isle au Haut mailboat provides service between Stonington, ME and the town landing at Isle au Haut, with summer service to the Acadia National Park campground at Duck Harbor. A seasonal excursion around Penobscot Bay is also offered.

Downeast Transportation operates bus services to Ellsworth from Stonington, Bucksport, Otis, and Winter Harbor.

## *Tourism services*

There are two motels in Stonington, on Main Street. In season, there are a number of B&Bs, art galleries and shops, and six restaurants. What was lost, however, when the tourist-oriented businesses came in, were some year round businesses including a clothing store, a hardware store, and one grocer. A liquor store closed, but that was in accord with state policy. Liquor can now be purchased at the grocery. Furthermore, the new businesses employ only a few locals.

<sup>5</sup> <http://govinfo.library.orst.edu/cgi-bin/sddb-list?state=me&report=default&d1=Deer+Isle-Stonington+CSD&c1=>

<sup>6</sup> While 36 miles sounds relatively short for those accustomed to highway driving, it takes at least an hour to travel this distance.

### *Hospitals, schools, libraries*

Island Medical Center is in Stonington. It is now part of Blue Hill Memorial Hospital, a Critical Access Hospital that is 25 miles away. Complicated cases must go to Bangor, 75 miles away. Three doctors and a physician's assistant work on Deer Isle. Fortunately, Blue Hill Memorial Hospital is committed to rural, decentralized health care, but the system is fragile. The majority of the hospital's work is reimbursed by Medicare or Medicaid, but the state's rate for Medicare reimbursement is extremely low and residents are concerned that the hospital may eventually have to close the center.

Stonington and Deer Isle both have small public libraries. Stonington appropriates perhaps \$500/year to the library. Residents often go to Bangor or Blue Hill for books.

Children from Deer Isle and Stonington attend a consolidated high school. The island has gone into debt to build a new elementary and middle school, "but the teachers are not up to date," according to some key respondents. Also, there are more children with emotional and behavioral problems in the schools, attributed in part by some respondents to the increase in pressure on the fishing industry.

### *Fisheries Profile*

#### Commercial fishing and fisheries-related employment

##### *Harvesting structure*

Like the majority of the villages along the Maine coast, Stonington and Deer Isle are now primarily lobster-fishing communities, boasting approximately 285 lobster boats.<sup>7</sup> About three or four of these boats regularly go shrimping in the winter, more do so if shrimping is good. There are about 25 boats that re-rig for scalloping (dragging) during the December-April season. The town is a major center for urchin fishing—both lobster boats that rig to drag or carry divers and urchin boats and fishermen from out of town who base their operations from the Fish Pier when there is supply and market in a given year. There is one purse seiner and 2 bait carriers that operate out of Stonington. At least 100 clammers also work on flats around the island.

Groundfish gillnetting was an important component of the industry until about five years ago with at least 14 or 15 active vessels. In 1998 there were only 3 gillnetters left to conduct a small gillnet effort April to June. By 2000 only one gillnetter remained and he goes netting only for a few weeks annually.

Before the federal groundfish regulations became so restrictive, there were 5 to 10 groundfish draggers in the 40 to 55 foot category whose captains have since converted to lobstering.<sup>8</sup> Most of the fishermen who gave up groundfishing in the 1989-94 period did so as a consequence of the downturn in stocks. The effect of the downturn was exacerbated by the regulations that drove fishermen "from away" to fish much harder in the Gulf of Maine than they traditional had.<sup>9</sup> In addition, fishermen in this area were precluded from fishing on their seasonal grounds by Harbor Porpoise closures. Despite the fact that gillnetters in Stonington initiated research on pingers, there were not allowed to use them.<sup>10</sup> More recently, other effects of regulations such as the "unbearable" requirement to discard bycatch (of cod, for example) has kept those who would prefer to groundfish in alternative fisheries.

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<sup>7</sup> These estimates were offered by key informants and included all vessels that typically fish out of Deer Isle and Stonington. Much more modest numbers of vessels have federal permits. Deer Isle is listed as the address for 18 vessels, Stonington for 34. In fact, all of Hancock County is listed as the address for only 170 vessels. This is a reminder of the bias induced by looking only at federal data files.

<sup>8</sup> The boats themselves are gone.

<sup>9</sup> Days-at-sea (DAS) regulations, for example, encouraged vessels to fish closer to their port of landing so as not to use up their days steaming to more distant fishing grounds.

<sup>10</sup> Pingers are devices that use sound to dissuade harbor porpoises from approaching the gillnets.

Ninety-five percent of the approximately 300 fishing vessels are fiberglass, 1 is steel and the rest are wood. The size ranges 35 to 45 feet and age, 6 months to 30 years old. Gillnets, long lines, traps (for lobster and/or crab), trawls, seines and stop seines are all used.

Federal regulation in the last 20 years has resulted in a far less variable annual round of fishing than existed previously. Today "you are locked into whatever you were doing [when the control dates were decided upon]." The result of this is that local fishermen have very few options to fish outside the three-mile limit and must make most of their living in state waters. There are very few federal groundfish permits left in town. Scallopers are limited to 400 pounds from federal water. There are very few federal lobster permits (52 in Stonington and Deer Isle out of almost 300 boats). In some cases, these federal permits are held by fishermen who are now older, and no longer use them. Younger fishermen, as a result, are far more dependent upon lobstering, and have little experience with other fisheries.

The annual round of fishing still does include gillnets (for one person), longlines for halibut, traps for lobster or crab, and some purse and stop seining along with shrimping, urchining and clam digging. Stop seining for herring was once a part of everyone's year, but is considered a "lost fishery" in the area.

#### *Processing structure*

In 1998 the only processing left in the area was home-based (cottage industry) crab picking, along with occasional small-scale fish filleting. Recently, a new small-scale operation called Stonington Sea Products has developed a niche market for such specialties as smoked scallops, fresh and pickled halibut, paste and spreads and crab meat.

Fifteen years ago (around 1984) there was a sardine factory that was kept in operation for ten years after its purchase by Connors. Later the plant became a lobster freezing facility, but that operation was short-lived.

Two mussel bottom-lease holders sell their product to Great Eastern Mussel Farms, Inc. Others collect wild mussels and pickle them at home. Some clam dealers shuck out clams and some clambers shuck and peddle their product door-to-door. Stonington's clams are known for their good yield when shucked out.

#### *Support Services*

Stonington's Fish Pier was one of four fish piers in the state (including Portland's) that were built when Joe Brennan was governor, financed by a \$11 million state bond issue dedicated to preserving commercial access to the waterfront. The pier is heavily used and self-supporting through parking fees, dock fees and landing fees. That income, however, has diminished along with the groundfish landings.<sup>11</sup>

Currently, several major dealers provide additional access to the waterfront, but fishing industry participants are concerned that as gentrification increases, the dealers will be enticed to sell. Their property is taxed at the highest potential use value, despite the differences between the potential and the actual use.<sup>12</sup> The industry participants are concerned since the fish pier would not be able to handle all the commercial vessels should the dealers sell or convert their property to non-fisheries related enterprise.

The harbor is filled with moorings. Bait from seven places including both coops and lobster buyers is available. In addition, lots of people obtain their own bait and keep it in their yard in old freezers or in floats in the harbor.

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<sup>11</sup> Sheehan, E. and R. Moore. "Perspectives from Five Ports." Prepared for the Maine Dept of Marine Resources, May 1998.

<sup>12</sup> For example, waterfront restaurants or hotels ordinarily have much higher profit margins than do fish dealers, but the property tax is based on the property's potential value rather than actual use value.

Diesel fuel is available from all the bait houses, and the pier, plus other places. An icehouse and two marine suppliers are local, though the cut in groundfish landings has led one to diversify and purchase the town's auto parts store as well. One of the suppliers is owned by two fishermen's wives. Some supplies can be obtained from dealers, but they "no longer serve as the company store." Nevertheless, fishermen remain loyal and indebted to their dealers since the dealers provide access to bait and fuel.

There is at least one boat-builder and one boat-finisher on the island and two marine railways/haul out facilities. One of the marine railways is the largest employer and is a well-known company that draws customers from all over New England. They have refurbished or repaired such notable vessels as the Mayflower and various schooners. The local net-maker taught everyone how to make their own nets and has since retired. One net-maker remains in Sunshine (Deer Isle). Several people provide seafood trucking services.

While there are no fish retail establishments, per se, there is a door-to-door seafood peddler. The peddler has a half dozen trucks, fillets some of the fish and sells it roadside. The supermarket sells lobsters.

There is one local air fill station for divers and another about 40 minutes away.

#### *Employment (year-around and seasonal)*

Given the estimate of 300 boats with 1 or 2 crewmembers on each, plus numerous shellfishermen, informants estimated that there are about 900-1200 fishermen living on the island, most of whom were born near Stonington/Deer Isle. In addition, at least 20 percent of the other year round residents are substantially dependent on the fishing industry.

Considerable quantities of crab are landed in Stonington and crab picking was a traditional occupation for many fishermen's wives. Recently, HACCP regulations have determined that crab-pickers must have a separate kitchen with stainless steel sink and numerous other restrictions to be permitted. The costs of complying with the regulations are proving to be prohibitive for many individuals in this cottage industry. In 2000 crab from the island has a national reputation due in part to two dealers who provide seafood only to top chefs and have helped the island's crab producers achieve a high standard of quality. The home-based crab picking, however, is being phased out. The town had looked into the feasibility of providing HACCP-approved space for the women to use, but found that space outside individual's homes did not meet their needs. In addition, a fear of the town's potential liability if they provided such space discouraged the undertaking.

A review of the impacts of Amendments 5 and 7 to the Northeast Multispecies Fisheries Management Plan points out that the loss of 14 to 15 gillnet vessels, even if all switched to lobstering, translates to a loss of at least 42 jobs. Gillnet vessels require a 3 to 4 men crew compared to a 1 or 2 men crew for lobstering.<sup>13</sup>

The biggest employer on the island is Billings Diesel with 60 people. Other non-fishing jobs include construction, tourist services (e.g., cleaning, shop attendant, restaurant), employment by the school system, nursing and nursing home administration. The hardware store and post office provide other options. There's tipping (cutting the tips of evergreen's branches) and wreath making. Off island, people can rake blueberries. MBNA in Belfast (Waldo County) has begun to attract some of the young professional people in the area, causing some to move out of Stonington to be closer to work.<sup>14</sup>

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<sup>13</sup> Ibid.

<sup>14</sup> MBNA is a credit card company with telemarketing facilities in the Mid-coast area.

*Sales/revenue*<sup>15</sup>

The urchin market is an export market. Varying numbers of buyers come to the pier, inspect the product and agree on a price. The price, however, is extremely volatile.<sup>16</sup>

*Species, Seasons*

"Years and years ago, lobstermen would traditionally fish for a good chunk of the year and then take most of the winter and early spring months off to repair their gear. It's back to that cycle rather than rig up for scallops in the winter months." Some lobster year round, others take time in the winter to work on their houses or build boats in addition to repairing gear.

Some used to go scalloping from December to April, drag or tub trawl for groundfish in April, gillnet until August, and lobster until December. May-September 1997 a few vessels landed groundfish in Stonington and Deer Isle (Sunshine).

*"Groundfish fishermen have been switching to lobstering, but they can't go out more than 3 miles. It used to be if you had a Maine lobster license and you wanted to go offshore, they would give you a stamp or sticker on your license.<sup>17</sup> You didn't have to deal with the federal government at all. When the change came around, a lot of people couldn't prove their offshore rights, and there was a lot of bitterness over that."*

Urchin diving is usually done in the winter when the quality and therefore price is apt to be the highest. Divers typically work around the islands and ledges along inshore areas, moving as deep as 40 feet. Dive gear costs anywhere from \$2500 to \$4500 including 4 or 5 air tanks (\$120 each). Vessels (tenders) cost up to \$100,000.<sup>18</sup>

Besides urchins, niche fisheries include sea moss, snails, hag fishing (slime eels), oysters, mussels, clams and sea cucumbers. "In truth, the non-Federal species (clams, urchins and mussels) are keeping the fishing community alive."

Landed species include:

Groundfish: cod, cusk, flounder, haddock, hake, plaice, pollock, witch flounder

Crustaceans: lobster, crab

Shellfish: clams, scallops, mussels

Pelagics: herring, mackerel

Small mesh: shrimp

Other: dogfish (bycatch), monkfish, redfish, skate (bycatch), striped bass, wolffish, worms, seaweeds

HMS: tuna

*Form of ownership (e.g., owner/operator; corporation)*

The majority of the vessels are owner-operated.

Recreational fishing and employment

There is little recreational fishing. Most is done from the wharves, targeting mackerel.

<sup>15</sup> This category is a placeholder. The revenue generated by seafood sales is critically important to the context, to the impacts of management and the course of individuals' decision-making. Because this research is a companion piece to research focusing on the economics of fishing, we did not spend a lot of time gathering specific revenue data. This will be needed, however, for social impact assessments.

<sup>16</sup> Molyneaux, Paul. 1999. "Raking in the Urchins" in *National Fisherman*, May, p.28-29.

<sup>17</sup> According to one respondent, a lot of people did not obtain the stamp or sticker.

<sup>18</sup> *Ibid.*

Cultural role of fishing*History and museums*

- At the Stonington Fish Pier is a granite carving dedicated to fishermen lost at sea.
- There is a museum dedicated to the granite industry in Stonington.
- The Island Historical Society's building is in Deer Isle.

*Cultural events*

The annual Fishermen's Day centers on the Stonington Fish Pier with dory racing, crab-picking demonstrations, a variety of booths offering food and/or information, etc.

*Ethnicity in the fisheries*

Like the general population, the fishing industry is predominately white, mixed "Yankee" heritage. The mixture includes Scottish, Norwegian and Italian ancestors who originally came to quarry granite in Stonington.

*Religion and values*

Various Christian denominations—"there are tons of churches!"

One key informant noted that the "come-from-aways" were trying to change the traditional values of the locals.

*Kinship & family*

Families are still quite devoted to the fishing industry in Stonington/Deer Isle. Young family members often go out with lobster fishermen to fill the bait bags, band the lobsters, etc. until they are old enough to help haul the traps.

*Where fishermen go for coffee*

Harbor Café, Island Fishing Gear and all the dealers. The dealers became more popular as gathering points when smoking was banned in the restaurants.

*Where fishermen go for beer*

In Stonington, fishermen go to each other's homes as there are no bars. In Deer Isle, where the sale of liquor is allowed in restaurants, some go to The Clam Digger.

Fishing related organizations and their roles in the community and fishery*Commercial fishing associations*

Stonington Fisheries Alliance  
 Stonington Lobster Cooperative  
 Downeast Lobstermen's Association  
 Lobster Zone Council (Zone C)  
 Deer Isle-Stonington Clam Committee

*Fishermen's Wives associations*

Island Fishermen's Wives

Fishing-related programs and services*Health and safety*

Health care for members of the fishing industry is particularly precarious. Although some fishermen have been able to obtain health insurance under a "small business" policy, most fishermen have no group affiliation that makes insurance available at a group rate. As Maine

fishermen are most often categorized as “self-employed,” if they do obtain health insurance, they pay the highest rates. Despite being in one of the most dangerous occupations in the country, all too often fishermen forego health insurance due to its high cost.

As wives of fishermen have begun to seek work outside their traditional activities in support of the family fishing business, jobs with corporations that offer health benefits is often a high priority.

#### *Training institutes*

Most fishermen learn their trade from their father or other relative. Now, however, lobster licensing requires a two-year apprenticeship. The way the apprenticeship program is designed, those who complete their apprenticeship before they are 18 are favored. This may be unfortunate since some of the industry leaders who have encouraged the development of sustainable fishing practices are those who have gone on to obtain advanced degrees and returned to fishing with greater understanding of both ecology and economics.

## **Perceptions of the Fishing Community<sup>19</sup>**

### **Importance of fishing to the community**

Fishing is considered “very important” to Stonington and Deer Isle. Or as one key informant responded on a one to 5 scale (not important to very important), the island should be classified as “6.”

### **Boundaries**

Capital contacts can be divided up into those encompassing social capital (e.g., visit friends, go for recreation, go for vacation, visit relatives, socialize, go to church); economic (e.g., sell fish, offload fish, buy fishing gear, haul out for boat repairs, go to the bank, go shopping), and human (e.g., go to school, go for childcare, go for health care, go for retraining). Most of the contacts involving all three categories of social, economic and human revolve around Stonington, Ellsworth is mentioned only occasionally.

Economic contacts are primarily in Stonington/Deer Isle, though there is some variation associated with the species landed. Lobsters are generally landed and sold to dealers in Stonington who then ship them out. Urchins are landed in Stonington, but trucked to Portland for sale. When finfish were landed in Stonington, they were often trucked to the Gloucester auction, which was said to provide better service and prices to gillnetters than the Portland auction. Prices for fish caught by gillnetters are lower than those for dragger caught fish in Portland, whereas in Gloucester, they receive high prices. The Gloucester auction used to send a truck to pick up the fish from Stonington. However, now that the Gloucester auction has been sold (2000) and since there are few active gillnetters in Stonington, this may no longer be true.

Fishing gear, ice, boat fuel and oil, and haul out for boat repairs are all commonly obtained in Stonington/Deer Isle, though gear is available statewide, so may be bought in Blue Hill, Ellsworth, Hamilton or Searsport. Family members usually handle the bookkeeping. There is one bank in Stonington, another in Deer Isle and 2 grocers; clothes though are usually purchased in Ellsworth or Bangor. Other shopping may occasionally be done in Bucksport, Portland, Rockland or Augusta.

Church, school, childcare, visiting relatives and friends, and health care are commonly on the island. Retraining is in Ellsworth at East Maine Vocational. There are no bars in Stonington, one in Deer Isle; social drinking is at each other’s homes or at dances at the Deer Isle Recreational Center (formerly the American Legion Hall). If someone goes on vacation, he or she is likely to go somewhere warm such as Florida or on a cruise. There is “not much” in the way of recreation facilities and movies are an hour away in Ellsworth, and hour and a half in Millbridge, or an hour

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<sup>19</sup> Based on key informant interviews



and 45 minutes away in Bangor, so people tend to create their own fun. In the summertime, the Stonington Opera House shows films. Ice fishing, boat picnics and four-wheeling are popular pastimes.

Technology is affecting the patterns of contact. With computers and the Internet, as well as cell phones, fishing industry participants are less isolated, even while working.

### **Communication Issues**

Communication with the harbor masters and other local managers or representatives is regarded in general as "good," though, according to key respondents, "many fishermen don't seem to know what is going on and there is a lot of misinformation."

Communication with state fishery managers or representatives was characterized as "poor" to "fair." Some confidence in an individual state representative or two was expressed and in those cases, communication was classified as "good."

Communication with federal managers was most frequently characterized as "poor" or less than "poor." As one informant said, "Very, very poor!" One key informant who had worked as a panel member with federal managers said that the communication depended on the situation, but sometimes was "good."

When fishing, informants said they would share information with family and friends, particularly with those fishing the same gear. If they shared information over the radio, it would be in code. Cell phones are used to talk to dealers, family, and other fishermen.

### **Assessments**

Fishermen in general "strongly disagree" with the assessments. "Assessments are not equivalent to science."

"Fishermen know that you have to go to a different spot this year than last. I understand they need continuity in order for their formulas to work. They don't take other factors into consideration, so the fishermen don't trust the science. There's a place we fish, really deep water on one side, not much there. Right next to it, you catch fish steadily anytime you set a net out...you could be 50 feet from the biggest school of fish you've ever seen in your life, and you don't know it's there."

Others noted that scientists frequently don't agree with each other and that they are usually reluctant to take information from fishermen. Interestingly, the high school now offers a marine science course, which is very popular.

### **Local management practices**

Long before state (and zone) regulations on lobstering were passed, a few locals instituted their own conservation measures. For example, the lath on wooden pots was lifted so that juvenile lobsters could escape. The v notching of females originated with lobster fishermen. The lobster seed fund buys egged-out females from pounds, v-notches them and returns them to the water. These were informal limits or measures taken at the local level, but state mandates were needed for broad implementation, some informants suggested.

More recently, shrimp fishermen have taken the initiative in trying to modify their gear for increased selectivity. Finfish fishermen tend to use 6 and a half-inch mesh to target larger (older) fish. One key respondent claimed that local urchin fishermen have always targeted 2 inch and larger urchins, even before regulations made that a requirement.<sup>20</sup> In addition, there has been

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<sup>20</sup> Another respondent did not think that this was true.

some efforts trying scallop enhancement and clam bed reseeded, as well as trapping cod to sell live (a form of value-adding). “The government comes up with ideas years after fishermen come up with ideas.”

Clam diggers also organized and approached the towns to ask for an ordinance regulating the opening and closure of flats, instituting rules for nonresidents and they hired a warden. Deer Isle leaders initially opposed the effort, but it has since been instituted.

### **Economic Change**

Ten years ago (around 1989) the economic condition of the groundfishing portion of the industry was characterized as “good,” as was lobstering. Five years ago when fishermen were both lobstering and groundfishing, the condition was also characterized as “good.” Today, lobstering is also characterized as “good” to “excellent.” It is hard to plan for the future however since fishermen are “at the mercy of the government.” Some hope that groundfishing will again be allowed and viable. In 1998, many lobstermen believed the economic condition would be worse for them because of the proposed regulations that were going to require an increase in vent size. Some fishermen believed the increase would cost them 10 percent. By 2000 everyone had accepted the change with little if any ill effect on his or her economic condition.

For individuals, most said that their standard of living was neither better nor worse than five years ago, but that it was a struggle to keep it steady, particularly since there are so many unknowns with the fishing industry. “The house we bought was going to be a starter home, it was okay that it wasn’t finished because we were only going to be in it for a little while. We’re probably going to be in it until we’re installing an elevator to get to the second floor.”

Other individuals commented that they were still accumulating assets and creating stability in their lives. One noted that his son makes more money than he does, but does not have as good a life. Several lamented that there is no alternative industry “Downeast,” so there are few options if children are not interested in pursuing fishing.<sup>21</sup>

By 2000 lobster fishing was creating extraordinarily high incomes. Three times the historical average income was not unusual. The problem noted by those who have experienced boom and bust periods of fishing is that the young people in lobstering have been acting as though the return they are currently experiencing will continue indefinitely. Consequently, there is a huge explosion in the debt level among the young. The explanation for this could be that it is an example of the dominant social paradigm (or values of those “from-away”) encroaching on the community. In other words, the sometimes-lamented materialism and lack of savings associated with today’s youth elsewhere may have found its way Downeast. Alternatively, it could be a failure of the replication of cultural capital, i.e., fishermen did communicate sufficiently about what they have learned through experience.

### **Changes in fishing effort**

Regulations have forced a change in effort, especially reducing the opportunities for fishing in federal water. Fishermen who grew up targeting groundfish are now most commonly lobstermen, shrimpers, urchin fishermen or clam diggers. Most importantly, the limited entry regulations have diminished the flexibility of fishermen both in the yearly cycle and over the course of a fisherman’s lifetime. This has also changed fishermen’s business strategy and with it their ecological stance. Skills seem to be less important than investment in technology. Nevertheless, communities need access to the fisheries for their young families.

Days at sea regulations limit groundfishing effort, urchining is limited to a 120-day season, and lobstering is limited for some to the 3-mile state waters.

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<sup>21</sup> While most of the published literature refers to Stonington/Deer Isle as Midcoast Maine, some of the fishermen referred to the area as “Downeast.”

The mix of fish has changed with less hake now, but pollock and haddock seem to be rebounding in the deep water. There is cod in the shoals, but regulations keep the fishermen from targeting cod.

The most noticeable change is that “nobody’s going [fin] fishing!” One key informant said that he had been on Cashes Ledge for two weeks without seeing a boat. He also commented that regulations have been driving out the owners who don’t fish, but did not explain why that was so.

Some people have moved into lobstering and others are turning to shellfish such as clams, mussels and oysters and to seaweed harvesting. Scalloping however is not an option for most. Only two or three Maine vessels have federal scallop permits and the stocks of scallops in Maine waters are depleted. Outside of 3 miles, those without scallop permits are limited to a catch of 400 pounds.

Shrimping remains an option, but conditions and closures limit their availability. In addition, few fishermen out of Stonington/Deer Isle now have dragging gear.

Changes in the lobster industry center on the increasing numbers of people and volume of gear. Wire traps, the technology on the boats (including Loran and GPS) is much more effective, but has also increased costs dramatically. You used to be able to outfit a boat for \$30,000, now it costs \$160,000 to 200,000. Whereas the catch has doubled, the costs of boat and gear have one up 7 or 8 times.

“My rope bill alone is \$2-3,000 per year and bait is \$13/bushel. Traps cost me about \$15,000. It takes at least 50% of my gross to stay in business.” Nevertheless, “lobster is carrying the community.” “The lynch pins have been pulled out,” but the economic return from the lobster fishery is masking the serious impacts of regulations and depletion in other fisheries.

#### **Effects of recent management**

For the several boats that are still targeting groundfish, the effect of management has been to force smaller vessels to fish farther out than they would if they didn’t have to avoid cod. Reportedly, those who fish closer to shore quickly catch their cod quota, so in order to continue fishing they must either discard large quantities, change gear, or seek alternative grounds where the cod are less likely to be aggregated. Now some fishermen take 2- or 3- day trips, going out 75 miles to fish in vessels no larger than 40 feet.

The negative effect that was mentioned most often in 2000 was regulatory discards of groundfish. The rationale for throwing already dead fish overboard escapes most fishermen’s comprehension. This is as true in Maine as it is in the rest of the New England NRR.

In lobster, according to some observers in 1998, restrictions on the numbers of traps caused an increase in the overall numbers of traps deployed. Because some of the fishermen who had been fishing a small number of traps before the institution of limitations were anxious to create a record of fishing the maximum number in case further restrictions on trap numbers ensued, the overall numbers of traps increased. By 2000, key respondents indicated that the overall numbers of traps in Zone C were down. The fishermen are limited to 800 traps.

The marine mammal regulations also concern the lobster fishermen and they fear severe negative impacts. The uncertainty revolves around efforts to decrease entanglements of whales. The protection of the right whale is apparently driving the move to impose gear restrictions or new designs that would more easily release any entangled marine mammal. The fishermen anticipate that the changes will be costly (for purchases of new gear), may result in increased loss of gear (if breakaway buoys marking a trawl are required), and may increase time required to set and retrieve pots.

### **Characteristics of local fishermen**

A good fisherman is a hard worker, loves the sea and is committed to the way of life. He must be intelligent though “not in a book-reading way,” but rather quick-thinking, able to be by turns a mechanic, gear manufacturer, wood and glass worker. A fisherman must “pay attention to the finest of details, learning to read the ocean’s signs to become successful. Experience with fishing different depths, summer fog, running by instruments is important.”

#### *Safety*

While the safety equipment improvements are noted, regulations cause some to take risks by fishing farther offshore in small boats than is truly prudent. The increased costs of gear and technology also have caused a need to generate revenue, so fishermen also go out on days when they wouldn’t have had to in the past (e.g., during 30-35 mph winds). Even the high cost of the safety equipment puts pressure on fishermen to go out during unsuitable times. Life rafts cost \$3000 with a \$300 annual inspection, EPIRG (automatic emergency signal) costs \$1000, life jackets; survival suits (including light and battery), VHF with auxiliary backup, flare kits \$100. However, most Stonington fishermen now stay within the 3-mile limit of state waters and therefore are not required to have the full complement of safety equipment required in federal water.

#### *Job satisfaction*

Most fishermen are satisfied because they are their own bosses and they are happy to still be fishing. This is incredibly important to the majority of fishing families. While there is the usual spectrum of rags to riches—fishermen barely above welfare levels to aggressive businessmen with luxurious vessels and homes, the typical fishermen loves what he does and the families consider their lifestyle “great.” They look at MBNA and scoff, “that’s the alternative.” Fishing has always offered participants challenges and choice. Now, some raise the question, “is skill or capital going to be rewarded?”

#### *Fishing families*

A couple of women fish, urchining and lobstering. Some girls go fishing with their fathers. Spouses also work on gear (knitting heads or helping build nets), fillet and candle fish, take care of the bookkeeping, and/or paint buoys. The ideal non-fishing job for spouses is one with health insurance coverage, though not many of those are available.

Some informants suggested that the insecurity associated with the fishing industry has had the consequence of increasing the numbers of women seeking employment outside the home and fishing industry.

Most of the key informants said that they learned fishing from their father or fathers-in law. Some commented that they would like to see their children go into something else, but that they probably would end up in the fishing industry.

Upper Mid-Coast Maine  
County Statistics

### 5.10.2. Waldo County<sup>22</sup>

Waldo County, incorporated in 1827, was once considered Maine's agricultural county, particularly known for poultry farming in the 1950s and 60s.<sup>23</sup> Four state parks — Fort Knox State Park in Prospect, Moose Point State Park in Searsport, Lake St. George State Park in Liberty, and Warren Island State Park near the island of Islesboro — are all located in Waldo County. This county also has a rich maritime history reflected in exhibits at the Penobscot Marine Museum in Searsport. "During Searsport's early history, its major industry was shipbuilding and cargo handling. The seaport town was famous for its sea captains in the mid-1800's and was once home to ten percent of all American deep-water shipmasters. Today, fuel, lumber, paper, and chemicals still move through the port."<sup>24</sup> Waldo County was named for General Samuel Waldo, the "prime commercial agent" for pine masts.

MBNA, the credit card lender, opened the operational headquarters for its Northern Region in Belfast, Maine in 1996. With other offices in Brunswick, Camden, Orono, Portland, Presque Isle, Fort Kent, Farmington, and Rockland, Maine, as well as Dover, New Hampshire, it employs about 3,700 people. The company's presence has had major impacts in Maine, providing alternative job opportunities for young professionals and contributing scholarships, internships, and grants to a host of community programs as well as encouraging their employees to volunteer for literacy programs, etc. Some respondents noted that there are negative impacts as well. The international company has exceedingly "deep pockets" and is able to out-compete small local companies for competent employees, (as long as they don't have a strong Maine accent). Furthermore, the company attracts outsiders with different values and some say, has caused real estate prices to escalate.

Belfast, Maine in Waldo County is the home office for "ContiSea LLC that has two wholly owned subsidiaries in Maine: Atlantic Salmon of Maine LLC, which produces about 7,000 tons of farmed salmon per year, and Ducktrap River Fish Farm LLC, which produces value-added seafood products."<sup>25</sup>

Waldo County's 724 square miles had a population of 33,018 in 1990, estimated to have grown to 36,465 by 1998. Ninety-nine percent of the population (32,812) is white, of predominantly English, Irish, Scotch ancestry. In addition, there are 74 American Indians, 57 Asians, 35 Black and 40 "other."

Seventy percent of the county's population (22,996) consists of Mainers and only 744 individuals were born outside the U.S.

The elementary and high schools had 6122 students in 1990. Of persons 25 and older, 77% have high school or higher degree (21,295), 17% (3,586) have a Bachelor's Degree or higher.

The median household income in 1989 was \$23,148; per capita income was \$11,047. There were 8,932 households with wage or salary income, 3,678 received social security and 1,737 received retirement income.

<sup>22</sup> <http://www.supt.sad37.k12.me.us/Maine/Counties/Waldo.htm>

<sup>23</sup> Aroostook County rivals Waldo as Maine's agricultural county. "Aroostook County is called the *Potato Empire of the World*, since it boasts the largest potato production in the world. It's also a major growing area for grains and commercial vegetables, such as broccoli and processing peas. In addition, it has the highest concentration of beef production in Maine." See <http://www.umext.maine.edu/counties/arostook.htm>

<sup>24</sup> <http://www.acadia.net/searsport/sphis.html>

<sup>25</sup> <http://www.maineaquaculture.org/new/merger.htm>

Of the 16,181 housing units in the county, 10,028 were owner-occupied, 2,387 were renter occupied. The median value of owner-occupied housing was \$72,000 and the median year the housing units were built was 1964.

The county seat is in the only city, Belfast. Towns include: Belmont, Brooks, Burnham, Frankfort, Freedom, Islesboro, Jackson, Knox, Liberty, Lincolnville, Monroe, Montville, Morrill, Northport, Palermo, Prospect, Searsmont, Searsport, Stockton Springs, Swanville, Thorndike, Troy, Unity, Waldo, and Winterport.

Upper Mid-Coast Maine  
County Statistics

### **Knox County**

Knox County, with an area of 374 square miles is Maine's smallest county, but has the largest commercial fishing industry.<sup>26</sup> It was incorporated in 1860. The city of Rockland is the county seat. According to the 1990 census, the county has a population of 36,310 (estimated as 37,847 in 1998).

In addition to commercial fishing, shipbuilding and limestone are important to Knox County. Maine's state prison was built in Thomaston in 1824 overlooking Route 1. It is scheduled to be moved to Warren, Maine in 2001 once a new facility is completed.<sup>27</sup> Thomaston still has the largest concrete industry in New England. Knox County was named for Henry Knox, the first U.S. Secretary of State.

Towns include Appleton, Camden, Cushing, Friendship, Hope, Isle au Haut, North Haven, Owls Head, Rockport, Saint George, South Thomaston, Thomaston, Union, Vinalhaven, Warren, and Washington. Plantations: Matinicus Island.

All of the islands are fishing communities. Fishing is significant to Friendship, Isle au Haut, North Haven, Owls Head, Saint George, South Thomaston, Vinalhaven and Matinicus.

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<sup>26</sup> <http://www.supt.sad37.k12.me.us/Maine/Counties/Knox.htm>

<sup>27</sup> <http://rockland.k2bh.com/Community/Story.cfm?StoryID=3882>

Community Profiles  
Knox County, ME  
Upper Mid Coast Maine

### 5.10.3.1. Rockland

#### *Background*

First known as “the shore” or the “Shore Village,” the area was called East Thomaston until it was incorporated as the city of Rockland in 1854.<sup>28</sup> In the late 19<sup>th</sup> century, Rockland was a leading port for the export of lime rock.<sup>29</sup> Rockland’s lime was used for masonry and plaster walls all over the world.

Between 1881 and 1899 the Bodwell Granite Company built a breakwater that was almost a mile long to protect the harbor. Much of the 697,627 tons of granite came from Vinalhaven. In 1902, a few years after the breakwater was completed, a permanent lighthouse replaced the small moveable beacon that had been marking the end of the breakwater.

Rockland was an important groundfish harvesting and processing port in the past. Two offshore fleets based here (O’Hara and National Sea Products) fished in Canadian water until 1984 when the Hague Line, the international boundary established by the International Court of Justice in The Hague, the Netherlands, led to the exclusion of U.S. fishermen from Canadian fishing grounds. Groundfish processing plants that relied primarily on Canadian fish continued producing product for U.S. government contracts until the early 1990s. In the 1970’s the city also had a major shrimp plant and served as a primary herring-processing center with two sardine plants, the last one of which closed about 12 years ago.

Today, herring and lobsters are the dominant fisheries of Rockland. The city boasts of being the “Lobster Capital of the World.” In addition, a major sea moss plant is located here. Opinions differ among key respondents about the city’s dependence on the fishing industry. Some believe that the city is inevitably moving towards a tourism-based economy though others suggest that once fish stocks rebuild, the city will again be dominated by the fishing industry. Nevertheless, fishing retains a significant presence in the economy and culture of Rockland and all respondents considered fishing “important” to “very important.”

Judging from the role Rockland plays in the landing, marketing and transport of herring for lobster bait, as well as the transshipment of lobsters, Rockland must be deemed an *essential provider* to the fishing industry.

In 1995 Rockland was named “50<sup>th</sup> Best Small Town in America” in Norman Crampton’s America’s 100 Best Small Towns.

#### *Governance*

Mayor and City Council

#### *Demography*<sup>30</sup>

##### Population

Rockland’s population in 1990 was 7,972 with 3,699 males and 4,273 females.

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<sup>28</sup> Information found at <http://www.tiac.net/users/buster/shorevillage/>

<sup>29</sup> Rockland Breakwater Light, “History” (4/3/00) at <http://www.lighthouse.cc/rocklandbreakwater/history.html>

<sup>30</sup> Census information can be found at <http://venus.census.gov/cdrom/lookup/>



### Age Structure

There were 1379 children under 12 years old, 1394 individuals over 65, 707 teenagers (12 to 18) and 4505 between 19 and 64 years old.

### Education

The educational level of the SAD#5 School District (Rockland, Owls Head, S.Thomaston) was cited as 74.8% high school graduates and 35.5% had at least some college.

### Housing

Rockland had 3719 housing units in 1990, 1776 were owner-occupied, and 1547 were renter occupied. The median value of the housing is \$73,300. The average selling price for a home in 1999 was \$93,800.<sup>31</sup>

### Racial and Ethnic Composition

Only 63 out of Rockland's 1990 population of 7,972 were non-white.

## *Economic Context*

### Income

Median income for all households was \$23,528.<sup>32</sup>

### Employment

Rockland area was said to have a labor force of 23,580 and only 2% unemployment.<sup>33</sup>

Major companies include Fisher Engineering, founded in 1948, a "leading manufacturer of snow and ice removal equipment;"<sup>34</sup> and MBNA, which is bringing in 300 jobs. Nautica (clothing) is based in Rockland, as is FMC Biotech Division, employing 70 people and other small industry. There's also an increasing number of year-round retail stores. In December 1999, Wal-Mart was requesting a rezoning to allow an expansion of their existing store, creating a "supercenter" in Rockland. They anticipate employment of 350 people, 80 percent of whom would have full-time jobs. Increased traffic was a major concern voiced at a public hearing on the proposal.

MBNA has donated funds to the school system, library and the local art museums. While their office in Rockland is said to be relatively small, MBNA has considerably larger operations in Camden and Belfast. Though some local people have been hired, the Maine accent is said to preclude some from job opportunities. The other reported downside of the influx associated with MBNA is that real estate prices have jumped.

## *Transportation*

Knox County Regional (RKD) airport supports general aviation.

The Maine State Ferry Service operates the following ferries on a year-around basis:

- Rockland - Vinalhaven
- Rockland - North Haven
- Rockland - Matinicus Island

Maine's Department of Transportation is considering bringing in the Cat Ferry, and rail service is being opened.<sup>35</sup>

<sup>31</sup> "Relocation in and around Rockland Maine" at <http://kelmscott.org/%7Ertacc/relocate.html>

<sup>32</sup> Ibid.

<sup>33</sup>

<sup>34</sup> <http://www.fisherplows.com/>

<sup>35</sup> City of Rockland, "Message from the Mayor" found at <http://www.ci.rockland.me.us/citycouncil/mayor.html>

### *Hospitals, schools, libraries and museums*

- The Knox County Regional airport is the home of the Owls Head Transportation Museum featuring classic and/or unique motorcycles, cars and airplanes.
- Rockland has three art museums, the best known of which is the Farnsworth Art Museum with a noted collection of paintings by Andrew Wyeth, a former resident of the town.
- Shore Village Museum, Maine's Lighthouse Museum, has a collection of artifacts of the US Coast Guard, Civil War memorabilia and has one of the largest collections of lighthouse material in the U.S.<sup>36</sup> Three lighthouses in the Rockland area are accessible by car and foot: Rockland Breakwater Light, Owls Head Light and Marshall Point Light.
- Rockland has a public library.

### *Fisheries Profile*

#### Community

Rockland as all the characteristics of a fishing community identified earlier in this report. Specifically: fish are legally sold ex-vessel to a dealer, processor or the public; fishing support services are provided; public-use facilities are available to launch vessels or provide dockage; fishing people satisfy daily or weekly social and/or economic needs in Rockland; local residents name Rockland as a fishing community and some fishermen participate in resource management.

Nevertheless, the character of the town has changed dramatically over time. With a very limited processing sector (one groundfish, one seaweed, no sardines), the town serves principally as a depot for the transport of fish to other places. In addition, various services for commercial vessels are available.

#### *Public facilities*

In 1999, the Harbor Management Commission and Harbor & Waterfront Department included in their goals: Development of a "three year plan for capital expansion at municipal fish pier in cooperation with current operations and management lessee."<sup>37</sup> The City Council also included in their 1999 goals: "Continued Focus on Harbor Maintenance and Improvements."

#### Commercial fishing and fisheries-related employment

##### *Industry structure*

Lobstering and herring are the dominant fisheries now. About 30 lobster boats fish out of Rockland, 5 purse seiners fish for herring and a few other vessels use trawls and gillnets for groundfish.<sup>38</sup> In 1997, 17 boats holding federal permits listed Rockland as their address, though only 8 actually recorded landings in Rockland in 1997.<sup>39</sup> Herring comprises the highest landings by volume of any species. There are three fish pumps in Rockland. "In addition to the sardine canneries, the product goes to a million places for bait."

According to 1997 NMFS landings data, urchins dominated landings January through March, supplemented by some sea scallops. Landings of urchins were again strong September through

<sup>36</sup> Information found at <http://www.tiac.net/users/buster/shorevillage/>

<sup>37</sup> <http://www.ci.rockland.me.us/Harbor/goals99.html>

<sup>38</sup> Estimates by key informants.

<sup>39</sup> NMFS Landings and Permit Data, 1997

December. Herring landings began in April, were highest in August and ended in November. Groundfish landings began in May, tapering off in December.

Rockland also serves as a depot for transiting lobsters. Vinalhaven, an island off Rockland, lands between 8 and 10 percent of Maine's lobster landings. Aggregating landings from other nearby ports, Rockland serves as a central point in their transportation to local, regional and global markets.

One processing plant relies on frozen product that is reprocessed into fish sticks and packed for the retail market. Another plant produces marine colloids from seaweeds. Besides these producers, Rockland serves an important role as a waypoint for the gathering and shipping out of lobsters from the islands and elsewhere.

A rendering plant closed seven years ago (1992), ending an era of wags' comments such as, "Camden by the Sea, Rockland by the smell," but also shrinking a market for herring rejected by the canneries and other fish unsuitable for human consumption.

A dogfish plant that had produced a belly flap product for 10 or 15 years, closed about five years ago. Dogfish had been trucked to the plant from Portland, New Hampshire, Gloucester and even Virginia. The same plant now handles alewives.

The difficulty inherent in describing "the" fishing community of Rockland is illustrated by the diverse operations of one its companies that currently harvests fish on both coasts, markets fish globally, and sells bait and ice state-wide. The company owns three vessels on the West Coast that fish, pack, freeze and ship flounder to Japan. It also owns a share in a herring boat here on the East Coast, owns a scallop boat fishing out of New Bedford, and is a part owner of a ship yard.

The key positions in the company are held by individuals from Maine, including both family members and long-time employees. Besides fishing vessels, the company owns and operates delivery trucks and tractor-trailers, and maintains a distribution point in Biddeford for the ice portion of the business. The company established a marina on some of its waterfront property and plans for a restaurant are being developed. Wharf renovations for berthing 60-80 foot fishing vessels when the stocks rebound are also in the works. When the West Coast vessels are operating and bait, ice and marina enterprises are active on the East Coast, the company employs about 150 people. Their ice business ranks second in the state.

Diversification is one key to the company's survival for close to a century. The company began at the early 1900's on the Boston Fish Pier, buying and selling fish. By the 1940's, it had moved to Maine with operations in Portland, Eastport and Rockland. It owned five fishing boats and a processing plant. As the fish stocks diminished and the drawing of the Hague Line limited accessible fishing grounds, the company retrenched, leased its plant, sold a couple of vessels, and sent a couple to Alaska. The company has handled a variety of species over its history and continues to seek new avenues to explore.

Notably, apart from those involved in the grueling factory-trawler work in Alaska, there is little turnover among company employees. Two employees are in their '70's, several are in their '50's—the majority started young, doing the "dirty jobs," and worked their way up.

#### *Employment (year-around and seasonal)*

Estimates varied widely from 40 to 250 fishermen in Rockland and the vicinity. Another 2500 are believed to live in Knox County. One company employs 150 people, though not all are employed in Rockland, or even Maine. Employment that is indirectly dependent on fishing is high, trucking

of supplies and bait, for example, is a crucial support. One of the town's shipyards specializes in the repair, restoration and construction of wooden vessels.

Most fishermen are satisfied with their work primarily because they feel in control of their own workday.

*Species, Seasonality*

Rockland was renowned for redfish before that stock collapsed. Redfish cuttings were used for lobster bait. Herring now is the most commonly used lobster bait, though some redfish is imported from Canada for bait use.

Other groundfish, particularly flounders, were an important portion of the landings in Rockland until the downturn in the stocks and resulting regulatory change diminished the catch.

"Rockland has a fair number of sea urchin divers." In the last few years, sea cucumbers have begun to attract attention with the development of such products as "sea jerky" and an arthritis pill that has received FDA approval. But cucumbers and periwinkles landings are more significant farther Downeast.

Lobstering is the primary fishery in Rockland and the vicinity, supplemented by shrimping, scalloping and urchin fishing in the winter. Fishermen may also seek elvers in the spring, or go clam digging. "Fishermen do a number of small things" to make the year's pay.

Those with 45-50 foot boats and a groundfish permit have developed an innovative technique of having different gear available at sea ready for rapid changeovers. They go with nets to fish their allotment of groundfish, then detach the nets, attach buoys with snap cables and sink the net until its again needed, taking up either scallop or shrimp gear for a time. Scalloping is generally done November to April, shrimping December 15<sup>th</sup> to end of May. During the overlapping time, 5 days may be spent shrimping, 2 days scalloping. Medium to large size lobster boats may also fish the same way.

A number of women had a cottage industry of picking crabs, but their enterprise has been impacted by stricter regulations associated with HAACP.

*Aquaculture*

Aquaculture centers on shellfish, mussels primarily, although there is some culturing of oysters. Sea trout was attempted.

*Species often landed:*

Groundfish: cod, summer flounder, dabs (American plaice), winter flounder (some), yellowtail flounder (little), pollock, halibut, gray sole (witch flounder), hake (silver), cusk, wolffish

Small mesh: Shrimp, squid (bycatch only)

Pelagics: herring, mackerel (rare)

Crustaceans: crab (rock), lobster

HMS: tuna (occasionally)

Other: stripped bass, dogfish (bycatch), redfish, skate, sea urchin, monkfish, elvers, bluefish, whelks, sturgeon, softshell clam, mahogany clams (quahogs), periwinkles, mussels, slime eels (no longer actively fished here), seaweed, menhaden (cyclical, not in '99)

*Form of ownership (e.g., owner/operator; corporation)*

The majority of lobster boats are owner-operated. Purse seiners also tend to be operated by their owners, though some individuals own two vessels and must hire a captain to run their second vessel. Midwater trawlers are most often run by hired captains.

### *Recreational fishing and employment*

Shore-fishing for mackerel, striped bass and bluefin is known but is “not of any consequence.” Unlike Bar Harbor, Rockland is not considered a recreational fishing center primarily because of the distance to the fishing grounds.

### Cultural role of fishing

#### *History*

Twenty years ago, 3 sardine plants operated in Rockland and the canneries were the largest employers. At that time, many women worked packing fish, but they aged and their children were not interested in the same kind of work. The canneries eventually moved to smaller communities.

#### *Cultural events*<sup>40</sup>

Rockland has hosted the Maine Lobster Festival annually for 52 years. The festival celebrates the sea-faring history of Rockland with demonstrations, entertainment and seafood.

Schooner Day celebrates Maine’s long tradition of shipbuilding with displays of graceful sailing vessels. While not fishing-related, the schooner Stephen Taber is the oldest documented sailing vessel in continuous service in the U.S. and is now a popular excursion boat. Other windjammers and traditional schooners in Rockland include: Schooner *Isaac H. Evans*, the *American Eagle*, the *Heritage*, Schooner *J & E Rigg*, Schooner *Nathaniel Bowditch*, Schooner *Kathryn B*, Schooner *Wendameen* and The *Victory Chimes*.

The North Atlantic Blues Festival is also a popular East Coast event staged in Harbor Park.

#### *Ethnicity in the fisheries*

The vast majority of those involved in the industry are Maine “Yankees.”

#### *Kinship & family*

At one time, family members were employed in a variety of fisheries-related jobs. With the uncertainty surrounding fisheries now, many young people are not going into any aspect of the fishing industry. More are pursuing college and seeking alternative occupations.

Nevertheless, spouses of fishermen are often involved as “shore captains,” arranging for gear and supplies, repairs when needed, providing bookkeeping or arranging for a bookkeeper, etc. Others have sought work in the remaining support industries or work as representatives of vessels in management venues.

### Fishing related organizations and their roles in the community and fishery

#### *Commercial fishing associations*

Associated Fisheries of Maine  
Maine Lobstermen’s Association

#### *Aquaculture*

Maine Seaweed Council is a “coalition of seaweed industry representatives, seaweed farmers, researchers, educators and government officials dedicated to the health of the Maine seaweed resource.”<sup>41</sup>

### Fishing-related programs and services

#### *Training institutes*

When the fishing family assistance center was operational, the office was in Rockland.

<sup>40</sup> “Local Events”—City of Rockland at <http://www.ci.rockland.me.us/Events.html>

<sup>41</sup> <http://w3.maine.com/algaetech/gateway/msc.htm>

*Extension programs*

Maine Sea Grant Program in collaboration with Cooperative Extension at the University of Maine has an active outreach program that works with fishing industry participants on a variety of endeavors.

*NGOs*

The Island Institute, founded in 1983, is a "membership-based community development organization focusing on the Gulf of Maine and the 14 year-round island communities of the Maine coast." The institute "serves as a voice for the balanced future of the islands and waters of the Gulf of Maine... guided by an island ethic that recognizes the strength and fragility of Maine's island communities and the finite nature of the Gulf of Maine ecosystems."<sup>42</sup>

The Conservation Law Foundation (CLF) maintains an office in Rockland. While noted for its bringing a suit against National Marine Fisheries Service to force stricter regulations on groundfish, CLF has a history of working closely with the fishing industry on such common interests as blocking gas and oil exploration on fishing grounds.

The Coastal Waters Project is promoting a marine protected area long the Hague Line.

*Government*

National Marine Fisheries Service maintains an office in Rockland.

U.S. Coast Guard maintains a station in Rockland.

## **Perceptions of the Fishing Community<sup>43</sup>**

**Importance of fishing to the community**

Fishing is considered important to very important to Rockland. "Herring landings sustain the fish pier." Lobster landings are the highest in the state.

**Boundaries**

Rockland is the county seat, so most of the communities in the area have contact with Rockland. Residents of Rockland may have the most contact overall with Camden, but the majority of day-to-day tasks are accomplished in Rockland. Other communities of contact include Bangor for shopping at the "big box stores," Augusta for government business and Portland for visiting "the big city."

Capital contacts can be divided up into those encompassing social capital (e.g., visit friends, go for recreation, go for vacation, visit relatives, socialize, go to church); economic (e.g., sell fish, offload fish, buy fishing gear, haul out for boat repairs, go to the bank, go shopping), and human (e.g., go to school, go for childcare, go for health care, go for retraining). For fishing industry participants in Rockland, capital contacts are most commonly reported as being in Rockland with the exception of offloading and selling groundfish (Portland), health care (Rockport, Penobscot Bay), vacation and visiting friends (varies). However, this list of contacts is misleading. As noted above, an important company in Rockland has economic capital contacts in Alaska, New Bedford, and all over the state of Maine. The sellers of herring have economic capital contacts strongly linking Vinalhaven with Rockland, Rockland with the canneries in Belfast, Bath and Prospect Harbor and "a million other places," where herring is purchased for use as bait by lobstermen.

Contacts between buyers and sellers of lobsters are usually reciprocal. Harvesters generally buy bait and sometimes fuel and other supplies from the company that buys their lobsters.

Eight to ten percent of Maine's lobsters are landed in Vinalhaven, transported to Rockland and

<sup>42</sup> <http://www.islandinstitute.org/core/html/> Address: 410 Main Street, Rockland, ME 04841 (207) 594-9209

<sup>43</sup> Based on key informant interviews

shipped from there to both local and global markets.<sup>44</sup>

Technology is affecting the patterns of contact. With computers and the Internet, as well as cell phones, fishing industry participants are less isolated, even while working.

### **Communication Issues**

Local fishery managers and representatives in Rockland are the harbormaster, the manager of the town's fish pier and the shellfish warden. Respondents indicated that everyone knows the managers, agree that the town regulations are needed, and communication was very good.

Communication with both state fishery managers and federal was rated fair to very good, depending on the individual's perspective. One respondent pointed out that "you have to be proactive" to insure good communication. "The general population does not feel connected," so they rate communication as poor. Others who attend meetings and participate rate communication as "very good." In general, though, today's fishermen are thought to be more aware, better informed than they were even 10 or 15 years ago. Communication is also easier with new technology. Most fishermen, for example, have cell phones so word is more easily spread about regulations and changes.

### **Assessments**

Fishermen and scientists "disagree" to "disagree strongly" on the federal stock assessments of groundfish, herring and lobsters. Interestingly, the fishermen fear that scientists are overly optimistic about the size of the herring biomass, while lobster fishermen are more apt to believe the scientists are underestimating the lobster population. There is more agreement between fishermen and state scientists on lobsters, however, and strong agreement between fishermen and scientists on shrimp. Notably, state scientists work closely with fishermen, incorporating their observations, as they analyze data to assess the status of lobsters and shrimp.<sup>45</sup>

### **Local management practices**

None have been identified in groundfish or herring, though some herring fishermen have requested an area "set aside" that would keep midwater trawlers out of an area above the 69-degree line. Lobster management has changed in the last few years to a form of cooperative management. State waters have been divided into zones that are controlled by elected representatives of fishermen. Several of the zones' boards decided (1998) to limit the number of allowable traps to 800, rather than the state permitted 1000.

### **Economic Change**

Asked to rate the economic condition of the fishing industry ten years ago and five years ago, respondents said that fishing in general was "average" while herring was "good" in both 1989 and 1994. The industry had a larger role in Rockland's economy ten years ago with two herring canneries, a dogfish plant and a rendering plant; furthermore, menhaden was available and flatfish (flounder) was being landed. Five years ago, the rendering plant had closed, one of the canneries closed and the city's major groundfish company had sent its vessels to Alaska.

Today, lobster is "doing well" ("good"), but herring is "average." Rockland (and Knox County) remains the premier capital for lobster landings. New entrants in the herring fishery, especially those who fish with midwater trawls, have had some impact on those who have long been in the fishery. The strict total allowable catch (TAC) on herring may have a serious impact since NMFS

<sup>44</sup> Concerns about the herring TAC focus on the potential impacts on access to bait for lobstermen, particularly for those who work out of Vinalhaven and the other islands. Purse seiners are able to deliver bait directly to the islands, but if the TAC is taken too soon and Area 1A is closed, the purse seiners will be out of business. The smaller vessels cannot effectively fish on Georges Bank and will be unable to provide bait to the lobstermen. Some question whether midwater trawl vessels could fill the need, but more significantly, they see the midwater trawlers as threats to spawning fish.

<sup>45</sup> Both Dr. Dan Shick and Dr. Bob Steneck have reported on fishermen's observations that have influenced the direction of their own scientific research.

did not allow “days out” of the fishery which fishermen hoped would slow the catch sufficiently to stretch the TAC through the fishing year. Some lobster fishermen have felt constrained by the trap limits.

The standard of living is about the same as it was five years ago, but there is more concern for low-income people than in the past, so more services are available. The fishing industry no longer attracts as many young people as it did in the past, now the young people work in the tourist industry and/or go on to higher education.

“The demise of the fish factories has a lot to do with labor shortages. They used to hire high school kids. It was cold, wet and smelly. They had to work hard, but it was an honest living and there was a great camaraderie.”

Respondents felt it was impossible to predict five years from now since so much depends on management and regulations. However, one respondent indicated that non-fishing residents of Rockland are looking for a cleaner industry to promote. “Fishermen will have to fight for dock space in the future.” Federal dollars were used for the fish pier, though, so commercial marine-dependent use is required there.

#### **Changes in fishing effort**

As the herring industry has evolved, stop seining lost out to purse seiners. In the past ten years there has been a move from the use of catcher vessels (usually purse seines) and carriers (often owned by the canneries) to larger vessels (midwater trawlers). In consequence, the vessels tend to travel farther than they used to and they are forced to catch more to cover the costs of upgrading their vessels. The market has expanded in time as well: there’s now a winter market for herring as food in Canada. In addition, lobstermen of Vinalhaven have been keeping their pots out later in the year, so bait is needed.

The reports of an overabundance of herring by scientific assessments have encouraged new entrants into the herring fishery.

“New people were encouraged to come into the fishery and they all came to the Gulf of Maine. This has not been good for either the herring fishery or the Gulf of Maine. The piece of pie is smaller. Historic fishermen, who tend to be smaller, will be screwed.”

#### **Effects of recent management**

The management regulations that have received the most attention lately in Rockland are the limits on cod, the trap limits for lobstering, and the herring spawning closure. However, because Rockland was a major groundfish port for the two corporate fleets that fished primarily in Canada, the drawing of the Hague Line was also a regulation with critical impacts. The vessels initially tried fishing in the Gulf of Maine and on Georges Bank but the depletion of the stocks drove them to the West Coast. *“The decreases in the groundfish stocks had impacts on Rockland prior to the recent regulatory impacts. Some of the groundfish boats left for the West Coast before Amendment 5 to the Multispecies Management Plan was implemented.”* It is anticipated that both herring and lobster regulations will affect Rockland fishermen in the summer of 2000.

Though herring fishermen of Rockland have been fishing herring “forever,” former groundfishermen and fishermen of other regulated species have switched into lobstering when possible.

#### **Characteristics of local fishermen**

“A good fishermen must be persistent, they need to go all the time.” But, “you can’t just fish, the regulatory regime requires being involved, and in the present economy, you have to be an



accountant,” paying attention to all outlays and receipts. “Ambition and intelligence” are valued characteristics. It is also helpful to have family in the industry. A fishing heritage imparts knowledge about the industry and it is also “important for a fishermen’s family to accept him/her as a fisherman.”

#### *Safety*

Survival suits and improvements in gear have made fishing safer, though weather remains an issue. Regulations of days at sea could negative safety consequences if fishermen feel compelled to stay out longer or go out in poor weather conditions.

#### **Fishing families**

Spouses of those in fishing-related businesses do work outside the home. In the past, many women worked packing fish in the canneries, now women have a wide variety of occupations. On the islands, women tend to remain more involved in the fishing industry (e.g., filling bait bags, and picking crabs) or home crafts. The uncertainty associated with the fishing industry has certainly affected the decisions of some spouses to work, but equally important are the societal changes that drive most families in the U.S. to seek two incomes. “Since 1960, the participation rate of Maine women in the workforce has grown from 35 percent to 78 percent.”<sup>46</sup>

While respondents involved in the fishing industry like the business, they question the wisdom of selecting it now as a livelihood. The conditions of the stocks and the insecurity associated with changing regulations combine to make the choice an “unsafe” one. Most discourage their children from becoming involved, at least in the harvesting sector.

Key respondents indicated that many involved in the fishing business do not have health insurance.

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<sup>46</sup> <http://janus.state.me.us/spo/economic/mkane.htm> (January 4, 2000).

Community Profiles  
Knox County, ME  
Upper Midcoast Maine

### 5.10.3.2. Vinalhaven

#### *Background*

Vinalhaven is an island community, 15 miles off the coast and the largest of the 14 year-round island towns of Maine. Archaeological evidence found on the North and South Islands, as North Haven and Vinalhaven were called, indicate that the Pre-Indian Red Paint people were the first to visit Vinalhaven 3,800 to 5,000 years ago. Later, Abenaki and other Indians left shell middens, stone tools and skeletal animal remains.

European explorers visited in the 1500's and in 1603 the English Captain Martin Pring is said to have named the Islands, "The Fox Islands."<sup>47</sup> Permanent settlement began once the French and Indian Wars had ended in 1763. Francis Cogswell operated a sawmill on the southern shore of the South Island and in 1776 sold 700 acres to Thaddeus Carver from Marshfield, Massachusetts.

After the Revolutionary War the population quickly grew. In 1785 seventy-five settlers petitioned the General Court of Massachusetts to relinquish claim to the islands. By 1800 the population was 860 on both islands. Forty-six years later, the North Island was "set off" to become North Haven. The South Island, Vinalhaven, reached its peak population in 1880 with 2855 residents.

Fishing, farming, logging, boat-building and, for women, the knitting of fishnets and horse nets (to protect horses from flies) were the primary occupations. Then in 1826 the high quality of Vinalhaven's granite was discovered and the Island's 100-year period as one of Maine's largest quarrying centers began.<sup>48</sup> Immigrants from the British Isles and Scandinavia joined men from other states to work in the quarries. Granite was shipped for the base of the Brooklyn Bridge, customs houses and post offices, the Washington Monument as well as private mansions, monuments, bridges, dams, etc. until structural steel and concrete replaced granite as building material. The largest granite company closed in 1919. Paving blocks for the streets of many cities were produced until the 1930's.

Seafood has always played an important role in Vinalhaven's economy. Salted and dried fish, canned lobster, canned fish, fish glue, cut and packed fresh fin fish, canned herring, fresh lobsters, scallops, shrimp and sea urchins have been supplied to markets in Portland, Boston and New York. In the days of tub trawling and dragging, Vinalhaven was a major groundfish port. Fish drying, processing and shipping was a very significant part of their economy. Foreign distant-water fleets have been blamed for the demise of Vinalhaven's groundfish fishing industry. Currently, lobsters are being frozen for shipment around the U.S. and worldwide.

The 1200 year-round residents take great pride in their maintenance of multigenerational families and traditional industries. "The waterfront in Carver's Harbor wakes up long before dawn as the men and women who work aboard hundreds of lobster boats head out to sea... the wharves and docks of Vinalhaven are still piled high with fishing gear."<sup>49</sup>

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<sup>47</sup> "A brief history of Vinalhaven" at Vinalhaven Historical Society's web site  
<http://www.midcoast.com/~vhissoc/vhistory.htm>

<sup>48</sup> Ibid

<sup>49</sup> From web site found at <http://www.foxislands.net/~vhcc/>

## *Demography*<sup>50</sup>

### Population

The 1990 Census counted 1101 persons in Vinalhaven. Recent interviews suggested there are about 1200 residents who live on Vinalhaven year-round. As many as 2400 visitors come during the summer.<sup>51</sup>

### Age Structure

There were 106 children under 12 years, 74 teenagers (12 to 18), 664 adults (19 to 64 years) and 164 over 65 years.

### Education

Of persons 25 years and older, 150 had not graduated from high school, 359 graduated, 113 had up to an Associate's degree, 94 a Bachelor's and 38 had a graduate or professional degree.

### Housing

There were 480 households in Vinalhaven in 1989. Of the 1029 housing units, 472 were occupied during the Census and of these 358 were owner occupied. The median year the structures were built was 1939 and their median value was \$76,200. The median gross rent was \$339.

### Racial and Ethnic Composition

There are a few Vietnamese and blacks on the island now according to one interview respondent, but another explained that these were only plant workers who came in and out daily. During the 1990 Census there were 1098 whites and 3 American Indians.

## *Economic Context*

### Income

Per capita income in 1989 was \$11,702 while median household income was 19,706.

### Employment

The 1990 Census counted 131 in the industry category of "agriculture, forestry and fisheries." The same number was listed in the occupation category of "farming, forestry, and fishing occupations." The number of lobster boats (300) and other fishermen, however, cast serious doubt on the validity of the Census count.

## *Transportation*

State-owned and operated car ferries depart for Vinalhaven and North Haven from Rockland.

## *Hospitals, schools, libraries*

There is one school for elementary through high school on the island.

## *Fisheries Profile*

### Community

Vinalhaven fulfills the definition of a fishing community on the basis of central place theory. Fish are legally sold ex-vessel to a dealer, processor or the public; fishing support services are provided; there are public facilities providing dockage; fishing people satisfy their daily and weekly social and/or economic needs here, and some fishermen and their representatives participate in fisheries resource management.

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<sup>50</sup> <http://venus.census.gov/cdrom/lookup/978623516>

<sup>51</sup> <http://www.foxislands.net/~twmotel/>

As noted in the section on “background,” Vinalhaven was a prominent groundfishing port before the foreign factory trawlers devastated the stocks in the 1960s. Tub-trawling, gillnetting and dragging were the techniques used.

#### Commercial fishing and fisheries-related employment

##### *Harvesting structure*

Two-thirds of the 1200 residents are members of fishing families. There is no groundfishing now, though some have gillnetted and tub trawled in the past. Two purse seiners land herring for bait in Vinalhaven. There are about 300 lobster boats in the 20 to 40 foot range, a few urchin divers, and the two purse seiners. In 1997, 58 vessels holding federal permits listed Vinalhaven as their address.

Fifteen or twenty women number among the fishermen. The majority are sternmen on lobster boats, but a few run their own boats and set traps.

##### *Processing structure*

The town owns a processing plant that they lease out to a private company. Known as “Claw Island,” in its heyday the plant had 70 employees, and ran 3 8-hour shifts. Now, it processes crabs or shrimp in winter, and lobster in summer.

##### *Employment (year-around and seasonal)*

Two-thirds of the employed are lobstermen, the other third work in the tourist industry (Bed & Breakfast’s, cottages), the one store, lumber (carpentry), or on the roads.

The majority of the lobstermen take their traps out of the water from December through April. Woodcutting, wreath making and blueberry picking are seasonally available.

##### *Species, Seasonality*

Eight to 10 percent of Maine’s lobsters are landed in Vinalhaven, primarily May through December, though some lobsters are landed every month. Besides lobsters, some rock crab and a few sea scallops are landed. Herring is landed year-round.

##### *Form of ownership (e.g., owner/operator; corporation)*

Most lobster boats and purse seiners are owner operated.

#### Recreational fishing and employment

There is little extra room in Carver Harbor, so there are a few sailboats, no charter boats in Vinalhaven.

#### Cultural role of fishing

##### *Kinship & family*

Fishing is the center of life on Vinalhaven. For those brought up on Vinalhaven the appeal of fishing transcends that of almost every other occupation. One respondent simply said that, “Some of the fishermen ‘go away’ and then they ‘come back’ to Vinalhaven. In other words, as in some other fishing communities, even when fishermen make an effort to change occupations, the call of the sea is often too powerful and they eventually return to fishing.

## Perceptions of the Fishing Community<sup>52</sup>

### Importance of fishing to the community

Fishing is very important to Vinalhaven; "it's the backbone of everything."

### Communication issues

Communication with federal fishery managers or representatives is considered poor.

### Assessments

Fishermen are said to "strongly disagree" with the assessments. One key respondent noted that Carl Wilson has done a good job. And state samplers who come aboard the boats also "try to do good." New electronics may help improve assessments by making it easier for fishermen to keep track of their catch, noting shorts, v-notch, counters, and oversized lobsters along with the GPS coordinates where they were caught.

### Local management practices

Fishermen have decided upon a trap limit of 800 for their zone. "Zones, that was good. Each zone has different issues, for example gear conflicts to the South and tides Downeast." Nevertheless, some practices should be uniform, "one species should be handled the same through all the states—v-notched lobsters should not be kept, lobsters should not be dragged, minimum and maximum gauges should be agreed upon. In any case, Maine's management "should extend out 12 miles, so the state would have more control."

"The offshore guys want to increase the gauge size, 'cause that's all they're catching. Should really close the offshore to lobstering because that's where the breeders are. The Federal waters don't have the double gauge (maximum as well as minimum size.)"

### Economic change

For Vinalhaven, the fishing industry was "average" ten years ago, "good" five years ago; today it could be "the peak." Trap limits have caused an increase in the numbers of traps being set,<sup>53</sup> part-timers are fishing more now and waters are warming.

There is more money in lobstering now consequently many lobstermen have paid for new, good boats. "The change in the vent size did not hurt us as much as we thought [it would]." "Lobstering steadily got better. The last two or three years are probably the peak, it will probably go downhill, though I hope it doesn't. But everything has a cycle, doesn't last forever." "Fishermen can make \$100,000 a year now. The first few years, all money is poured back into the business. It costs \$150,000 to 200,000 for a good boat and engine and overhead is high." One issue of concern to thoughtful respondents is that young people, who've never been through a cycle of hard times, tend to spend themselves deeply into debt. "They buy expensive homes based on a large lobster catch, but they would have to leave them if the lobster ever fell apart."

Those who have been in herring awhile are "doing good," but you do need good equipment for herring fishing.

### Effects of recent management

Trap limits were anticipated as the management measure likely to have the greatest impact on Vinalhaven, despite the belief that the limit to 800 traps was reasonable. "Upping the measure

<sup>52</sup> Based on key informant interviews

<sup>53</sup> Presumably, this is a short-term phenomenon. Some lobstermen did not fish as many as 800 traps, but when the limit was set, they felt compelled to set the limit, so that they could keep their options open for the future. (They did not want to be at a disadvantage compared to other lobstermen if or when cuts in the limit were eventually decided upon.)

and increasing the vent size helped decrease mortality in the traps. We're seeing short lobsters egged out, so we know the stock is having a change to reproduce. Also, no one eats snappers anymore."<sup>54</sup>

One respondent noted that the lobstermen should have the right to pass on their license to a family member, not to sell it, but just to transfer it. Zone C is trying to keep the fishery open for young people.

Some are concerned about herring management. There was a concern expressed about the government "inviting people into herring just to take the heat off groundfish because they screwed up groundfish management." Herring was healthy before, these informants don't want that to change.

"If you don't take care of the herring, it'll be bad for the islands. There won't be enough for bait. We used to catch too many herring. Half the herring catch had to be dumped because there was no way to handle it. Some purse seiners would share their catch with other boats if they had more than they could handle.

Now the inshore stocks of herring are not showing up. It used to be, in the 1950s and 1960s, that stop seines would be used to close off an inlet and the fishermen could catch as much as they wanted to (in the summer)." "The purse seiners caught them before they reached the inlets. Now the midwater trawls are the beginning of the end. They don't even have to see the herring! At least purse seiners could let go a lot of fish if they caught more than they could handle or nontargeted species, it's too late if they come up in a midwater trawl."<sup>55</sup>

#### **Characteristics of local fishermen**

Most of the fishermen are satisfied with their jobs, particularly because they are "independent." "Lobstering is not so bad," though the limits on traps to 800 may be a problem for some, old timers will resent new fishermen. "How do you make it fair?"

#### **Fishing families**

Some women work because they want to. As many as 15 or 20 are "stern men," but "not many are captains." However, their numbers may increase. A lot of captains like taking women because "they are more dependable and they grumble less." Young people want to go fishing. They start out as a stern man, saving up to buy an outboard and then go out on their own. Most can make more money lobstering than they could doing anything else. But "it's good to go away for a couple of years, to see something else (go to trade shows or join the service)."

Fishermen stay even when conditions are difficult because "they don't know anything else."

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<sup>54</sup> Mortality in the traps refers to the cannibalistic nature of lobsters that find fellow lobsters a delectable treat. "Snappers" are short lobsters that cannot be sold, but lobstermen used to bring home for their own use.

<sup>55</sup> Many of the midwater trawler's nets now have sensors that will alert the captain when his net is full.



Sub-region Profile  
Counties: Washington

## 5.11. Downeast Maine

### *Background*

Downeast Maine is an important fishing area. Over 500 individuals selected fishing as their primary occupation during the 1990 U.S. Census. At least that many more participated part-time in the industry. In truth, 500 is a very conservative number for those who fish as a primary occupation.<sup>1</sup> Even the Federal 1997 permit files listed 218 vessels with addresses in Washington County.<sup>2</sup> Furthermore, the State of Maine issued 556 commercial fishing licenses (held by 336 individuals) in Cobscook Bay alone in 1998. The largest number of these were for lobster/crab, but eel/elver, scallop, commercial shellfish, commercial fishing, sea urchins, marine worms, seaweed, mussels and mahogany clams were also represented.<sup>3</sup>

Unlike some other sub-regions in New England, no single port dominates the fishing scene Downeast. Communities in this region most closely fit the idealized NRC model, with a high degree of insularity and multi-generational dependence on fishing as a way of life. The isolation of Washington County has contributed to its dependence on the marine environment. In addition, this county is the poorest county in the New England region and the second poorest in the United States.<sup>4</sup> Nevertheless, generations of Downeasterners have lived close to the coast, using their skills, talent and regional knowledge to make a living from marine and other natural resources.

The geography and topography of the Downeast region have contributed to its uniqueness. Cobscook and Passamaquoddy Bays are noted for their extreme tides and strong currents. Passamaquoddy Bay, an inlet of the Bay of Fundy, lies between Maine and New Brunswick, Canada. Its immense tides do not flood or ebb at a constant rate, but are described by the "Rule of 12ths" over a 6 hour period.<sup>5</sup> The name Passamaquoddy is based on an American Indian term meaning, "place where pollock leap out of the water." Eastport is located on Moose Island in the junction of Cobscook Bay and Passamaquoddy Bay before the waters empty into the Bay of Fundy.

The average tide in Cobscook Bay is 18 to 20 feet, though the spring tides near 30 feet during extreme weather. The strong tides and cold, nutrient-rich ocean waters that move in and out of the bay support an extraordinary number of different marine species, enhancing habitat for shellfish and other marine invertebrates, and influencing the success of aquaculture in the bay.<sup>6</sup> It also, however, affects the gear needs and techniques used by local fishermen.

During its heyday in the 19<sup>th</sup> and early 20<sup>th</sup> century, the Cobscook Bay area boasted 40 sardine factories. With the demise of that lucrative industry, families turned to clam and sea urchin harvesting, lobster and other fishing, and salmon aquaculture. Blueberry harvesting and forest products (logs, pulpwood and wreaths) are the other natural resources the communities rely upon.<sup>7</sup>

Nevertheless, some of the Downeast communities are sliding away from the NRC end of the spectrum towards a more gentrified DSP character, driven by a variety of social, cultural and

<sup>1</sup> Of the 17,858 people over 16 who worked in 1989 in Washington County, 1009 were employed in "agriculture, forestry, and fisheries" according to the U.S. Census 1990

<sup>2</sup> As noted before, the federal permit files do not include anywhere near all fishing vessels in the county since many (if not most) Maine fishermen hold only state permits.

<sup>3</sup> [http://www.cobscook.org/Reference\\_Materials/98\\_Licenses/state.htm](http://www.cobscook.org/Reference_Materials/98_Licenses/state.htm)

<sup>4</sup> Dyer, Poggie and Hall-Arber 1998

<sup>5</sup> 1/12 in the 1<sup>st</sup> hour; 2/12 in the 2<sup>nd</sup> hour; 2/12 in the 3<sup>rd</sup> hour; 3/12 in the 4<sup>th</sup> hour; 2/12 in the 5<sup>th</sup> hour and 1/12 in the 6<sup>th</sup> hour in the 6 hours from low to high tide.

(<http://www.crescent.willowdale.on.ca/teachers/taylor&nic/passbay2000/tidesinfo.htm> )

<sup>6</sup> [http://www.cobscook.org/Cobscook\\_Bay/Soundings/art2-tid.htm](http://www.cobscook.org/Cobscook_Bay/Soundings/art2-tid.htm)

<sup>7</sup> [http://www.sustainable.org/casestudies/MAINE/ME\\_af\\_cobscook.html](http://www.sustainable.org/casestudies/MAINE/ME_af_cobscook.html)



economic factors. The largest public employers in Cobscook Bay area are the public service fields and light manufacturing. However, Downeast communities remain the most ‘fishery-dependent’ communities of all the sub-regions in New England.

Thus, for the eleven sub-NRRs in the New England region, Downeast Maine (DESR) is the least gentrified, most isolated from economic externalities, and provides the closest examples of pure Natural Resource Communities. Like comparable communities in Newfoundland and Labrador in Canada, the small coastal communities of Downeast evolved as an economic response to fishing opportunities in the northern Gulf of Maine and the adjacent inlets, coves, and rivers of the region. On the three dependency indices, it ranks a strong first of all the sub-regions in overall dependency on fishing. To emphasize this point, the second ranked sub-NRR, Upper Mid-Coast Maine, is significantly below Downeast Maine at 36 (A), 2.0 (B), and 171.05 (C), respectively, for each of the three dependency indicators. Downeast is also significantly above the average for the region for all three indicators.

<b>Sub-NRR</b>	<b>A. % Related Occupations</b>	<b>B. % Of Total Employed</b>	<b>C. Alternative Occupation Ratio Summary</b>
Downeast Maine	45	3.6	255.54
Average for NRR	17.2	.75	66.58

Washington County, incorporated in 1789 and named for President George Washington, is Maine’s easternmost county. The glacial till and wetlands that make up the region provide modest agricultural productivity. Maine’s other great natural resource—pulp and wood products—that provides the economic base for some of the counties in the interior, traditionally required access to major water ways and railways. In Washington County, only Eastport had rail access, a factor distinguishing it from most of the coastal towns in Maine. Consequently, most of Downeast Maine depended heavily on marine and coastal natural resources, supplemented by some forestry-based work. Fishing vessels from a variety of Downeast ports for many years traveled widely seeking groundfish and other species. Thus it was a tremendous blow to the traditional “way of life” when prime fishing grounds just offshore were designated as Canadian under the 1984 decision by the International Court of Justice (known as the World Court) in The Hague, the Netherlands.

The region’s proximity to Canada has been a mixed blessing. The loss of fishing grounds when the Hague Line was drawn was clearly a blow to the finfish-harvesting sector. In addition, Canadian processors provide stiff competition and draw some of the economic benefits of “value-added” processing away from Maine. On the other hand, access to a variety of marine suppliers and gear manufacturers relatively nearby makes the fishing industry of Downeast less isolated than it might otherwise be.

Today, the traditional dependence on the fishing industry is being transformed in some places by externalities of technology, economy, and culture (e.g. ecotourism), while in others, it remains essentially intact, with fishermen hoping that their sons and daughters can continue the fishing way of life. Understanding the dynamics of these processes of change is crucial for anticipating the impacts of changing fishing regimes on communities and households. Also, these processes do not confine themselves to the independent level of community but also influence the regional networks of capital flows.

Notable Downeast ports include Jonesport/Beals Island, Cutler, Eastport-Perry, and Lubec. Two types of changes are occurring today. Some communities are beginning to display an economic mix characterized by a slow transformation towards modest tourism. Others, though retaining their dependency on fishing, are changing the nature of that dependency. Specifically, there is now a

much greater specialization in lobstering rather than the more traditional mix of finfish fishing, fish processing, and shellfishing. Furthermore, in the border region with Canada, salmon aquaculture is developing as an alternative economy. Cobscook Bay is also the site of an effort to enhance shellfishing (especially clams).

The abundance of lobsters that was felt in the Western Gulf of Maine a decade ago was noticed in Eastern Maine only in the past few years.<sup>8</sup> East of Cutler, lobstering is fairly limited because of the geography and habitat, though Lubec residents had 53 licenses in 1998, Eastport and Perry had 15 and 17, respectively, other Cobscook Bay communities had the remaining 48 licenses.

Maine lobster landings in 1999 were worth \$184.6 million.<sup>9</sup> Abundant and generally disease-free, lobsters are attracting an increase in effort in Maine.<sup>10</sup> The increase is attributable to fishermen changing from part-time to full-time lobstering; switching over from finfish fishing to lobstering; and some influx of newcomers "from away."<sup>11</sup>

When some of the lobster zones imposed limitations on the numbers of allowable traps, some small-scale operators suddenly expanded, purchasing the maximum number of traps allowed, in order to conserve their options for the future. Other local fishermen switched over to lobstering because of the decline in the availability of finfish through stock declines and/or regulation. Newcomers, both local and from away, are attracted to the industry because of the robust condition of the stocks and the high local, regional and international demand for lobsters.

Five lobster zones have a one-year license moratorium in place and statewide the industry is currently (2000) debating about various forms of limited entry.<sup>12</sup> Already in place to control new entry is the requirement that anyone entering lobstering must spend 200 documented days and 2 years as an apprentice to gain a license. Thus, existing social capital networks place some controls on who gets in and who doesn't. At the same time, newcomers are inculcated with the local folk mores and values of fishing, and where existing, conservation measures.<sup>13</sup>

While the increase in trap numbers is partially a response to the healthy lobster stocks<sup>14</sup> and partially an artifact of the recent trap limitations, it is anticipated that the limits will eventually result in the decline in lobster trap numbers by region. Some research indicates that reducing trap numbers will not necessarily decrease productivity over time. Acheson (1998) notes that in the three years before Swan Island set trap limits, lobstermen there caught 3.32% of the state catch, and three years after trap limits were established, the catch was virtually unchanged at 3.33% of the state total.

Isolation is an historical factor, and is maintained in part by the lack of a major thoroughfare through the region. Only U.S. Route 1, along the coast, and Maine Routes 9 and 6 inland traverse Washington County. Some of the residents in sites like Cutler rarely leave their region, and reflect a cultural uniqueness born of their dependence on the natural resource opportunities presented by fishing the coves and coast of Downeast Maine.

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<sup>8</sup> Key respondent interview

<sup>9</sup> "1999 Northeast revenues top \$1 billion" in *Commercial Fisheries News*, August 2000.

<sup>10</sup> Maine lobsters have not suffered from shell rot disease and inexplicable lobster die-off cited in Connecticut, and, to a lesser extent, Rhode Island and Massachusetts

<sup>11</sup> An influx of newcomers to the Downeast lobster fishery is not yet common.

<sup>12</sup> "Think long, hard about lobster limited entry" Editorial. *Commercial Fisheries News*, August 2000.

<sup>13</sup> Acheson (1998).

<sup>14</sup> Key respondent, Stonington Maine, Maine Lobsterman's Association

Downeast Maine  
County profile, statistics

### 5.11.1 Washington County

Washington County consists of 2,528 square miles with the county seat at Machias. The county had a population of 35,308 in 1989, it was estimated as 35,502 in 1998. Gender in 1989 was 17,308 male and 18,000 female. The population is predominantly white (33,704) and of British Isles ancestry (51%). In addition, the county identified 1436 American Indians, 6 Aleut, 88 Asians, 54 Blacks and 20 "other." Mainers constitute 72% of the population (25,390), only 7% (2457) were born outside the U.S.

The elementary and high school student population was 6,399 in 1989. There are 16,895 residents who completed high school or higher; 2,928 who had a Bachelor's degree or higher.

Of the 17,858 people over 16 who worked in 1989, 1009 were employed in "agriculture, forestry, and fisheries." The median household income was \$19,993, with 9131 households (68%) earning income, 4675 households (35%) receiving social security and 2403 (18%) receiving retirement income. Per capita income was \$9,607.

The median value of owner-occupied housing units was \$53,100 in 1989, and the median year the housing units were built was 1960.

The county's two cities are Calais and Eastport.

Towns include: Addison, Alexander, Baileyville, Beals, Beddington, Centerville, Charlotte, Cherryfield, Columbia, Columbia Falls, Cooper, Crawford, Cutler, Danforth, Deblois, Dennysville, East Machias, Harrington, Indian Township, Jonesboro, Jonesport, Lubec, Machias, Machiasport, Marshfield, Meddybemps, Milbridge, Northfield, Pembroke, Perry, Princeton, Robbinston, Roque Bluffs, Steuben, Talmadge, Topsfield, Vanceboro, Waite, Wesley, Whiting, and Whitneyville

Plantations are Baring, Codyville, and Grand Lake Stream.

Two hundred and eighteen boats had 1997 federal permits with addresses in Downeast Maine. Towns with vessels associated include: Addison (18 boats), Beals (72 boats), Columbia (1 boat), Columbia Falls (3 boats), Cutler (14 boats), Dennysville (1 boat), East Machias (1 boat), Harrington (5 boats), Jonesboro (3 boats), Jonesport (32 boats), Lubec (9 boats), Machias (5 boats), Machiasport (10 boats), Meddybemps (1 boat), Milbridge (14 boats), Pembroke (1 boat), Perry (3 boats) and Steuben (25 boats).

Federal landings for 1997 identify only Beals Island (358,713 pounds), Cutler (61,278 pounds), Jonesport (5,286,579 pounds), South Addison (1,215,167 pounds), Steuben and "other" Washington County (4,404,410 pounds). Most of the landings are of lobster, ocean quahog, urchins, crab, periwinkles and sea scallops. Other Washington landings also include soft-shell clams, herring, sea cucumbers, worms, conch, bluefin tuna and small quantities of groundfish.

Community profiles  
Washington County, Maine  
Downeast region

### 5.11.1.1. Beals Island and Jonesport

#### *Background*

Beals Island is connected to West Jonesport by a bridge. A smaller bridge connects Beals to Great Waas Island. In winter, Beals presents itself as a charming, classic fishing village with light-colored houses, a plethora of lobster pots piled on piers, and a couple of draggers nestled in the harbor. Even after a closer look, one “from away” is struck by the continuity of a way of life devoted to the sea made evident by the old, but well-kept houses overlooking the water, the lobster ponds and fishing gear, the working trucks and purposeful activity.

Much larger than Beals Island, Great Waas Island has a couple of miles of undeveloped forest on its east coast with relatively low rock formations along the shore. Towards the southern end of the island, pink granite looms as high as 20-25 feet. At the tip, hundreds of seals congregate.<sup>15</sup>

In 1997, over half the federally permitted vessels from Washington County listed addresses in Jonesport, Beals and Addison. In addition, the area boasts at least one source of each of the services needed by the local fishing industry. However, the local inhabitants are neither insulated from change, nor trapped in an isolated outpost.

Change is inherent in the fishing industry. Fishermen commonly talk about the cycles of prey and predator that change the mix of the available species and consequently, the gear and techniques used to catch them. Years ago, the coast of Downeast Maine was prickly with weirs, nets attached to poles set in a labyrinth pattern that led fish into a large trap. When purse seines became popular, the fish less frequently found their way into the fixed gear along the shores. Now that midwater trawls are becoming increasingly popular, the purse seiners are finding it more difficult to find and encircle schools of pelagic fish. So too, the stories relate, when cod and pollock were plentiful, the lobsters were not. Now that groundfish stocks are depressed, the lobsters have fewer predators and are growing to legal size in great abundance. Fishermen have always adapted to the conditions they find, some more successfully than others have.

The fishermen of Beals-Jonesport and Addison are now taking advantage of the wealth of lobsters, landing them year-round, though naturally the highest landings are in the fall. Quahogs, crab, clams, scallops and urchins are also actively fished.

Change is evident in the support sector as well. Boat building is a family tradition in the Jonesport/Beals Island area. When lobster boats were wooden, the traditional form evolved out of those built in this area. Generations of fishermen were also boatbuilders. Some names are famous and their boats recognizable. Now boatbuilders have switched to fiberglass, but they continue to build or finish boats in the winter. Lobster boat races originated in Jonesport/Beals as a way of demonstrating and advertising the latest designs. The races are still held every summer in varying locations around Maine.

Despite the small size of this area's population, it is by no means economically homogenous. Some of the fishing families, who are descendents of several generations of fishermen, are doing very well financially. Several have diversified their activities so that they can fish different species (some hiring captains to take out additional vessels) or have vertically integrated so that they obtain additional value for their catch by packaging and/or freezing, marketing and trucking it as part of the family's business. These fishing families also tend to have economic capital links that extend well beyond Beals-Jonesport-Addison.

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<sup>15</sup> <http://csisler.com/Reports/Maine/19990720JonesportME.htm>

Other fishing families, in some cases by choosing what they view as more environmentally sound practices, maintain a more modest standard of living. Such fishermen tend to own and operate their own vessel, fish smaller numbers of traps, are less likely to have diversified into various forms of mobile gear fishing. Their economic capital links are more likely to be less diversified and closer to home than are those of the larger-scale fishing families.

While there is some rancor evident in discussions between the small-scale and larger-scale fishermen, there are unifying forces as well. The social capital and human capital links crosscut the economic differentiation. High school sports, especially basketball, create one of the strong bonds among families in the area.

Also uniting the different fishing families is a concern about their children or grandchildren's ability to continue in fishing. While some say that it is too hard to make a living in fishing now and the regulations constrain choices too much, all key informants who fish love their occupation and would have liked to have been able to encourage their children to continue the tradition. In most cases, though, children are being encouraged to pursue an education and jobs out of the industry. This creates another worry—since there are few jobs in the area that are not dependent on the fishing industry, families must face separation.

Finally, another concern expressed by many of the families is the potential effect of an influx of people "from away." Real estate prices are beginning to reflect a higher demand and some fear the consequences.

## *Demography*<sup>16</sup>

### Population

In 1989, Beals Island had a population of 651 persons; 310 male, 341 female. Jonesport had 1,525 people; 721 male, 804 female.

### Age Structure

There were 95 children on Beals Island, 88 of who were enrolled in school. Jonesport had 280 children, 214 enrolled in school.

### Education

Among persons over 20 years on Beals Island, 186 were high school graduates, 69 had some college and 59 had a college degree or higher, 171 had not completed high school.

In Jonesport, 463 were high school graduates, 163 had some college and 119 had a college degree or higher, 342 had not completed high school.

### Housing

Of the 318 housing units in Beals, 210 were owner-occupied; 29 rented; and 79 units were vacant during the Census. Median housing value in 1989 was \$48,056.

Of the 851 housing units in Jonesport, 469 were owner-occupied; 117 rented and 265 units were vacant. Median housing value was \$54,151.

### Racial and Ethnic Composition

One hundred percent of the population of Beals in 1989 was white. Jonesport had 1,500 white people, 2 Black, 16 American Indian and 7 Asian or Pacific Islanders.

## *Economic Context*

### Income

Median household income in Beals was \$17,138; per capita income was \$9,143. Percent of persons in poverty was 21.66.

<sup>16</sup> <http://govinfo.kerr.orst.edu/sddb-stateis.html>

Median household income in Jonesport was \$15,574; per capita income was \$7,597.

#### Employment

Of 321 in the labor force (persons 16 and over), 278 were employed; 34 unemployed.

There are about 5 garages in the Addison-Beals-Jonesport area. Real estate agents and lobster pounds employ quite a few people. One processing plant employs 10 people year round, up to 60 seasonally. Nursing employs 60-70 people in the area.

#### *Transportation and Access*

Beals and Jonesport are accessible via Maine's Route 187, approximately 12 miles south of U.S. Route 1.

#### *Hospitals, schools, libraries*

Machias has a hospital. There's a nursing home near Beals, a clinic in Jonesport.

#### *Fisheries Profile*

##### Community

Both Beals Island and Jonesport fulfill the definition of fishing communities on the basis of the Sustainable Fisheries Act's National Standard 8. In addition, the minimum requirements of fishing community developed by the Atlantic States Marine Fisheries Commission's Committee for Economics and Social Sciences are also met. Specifically, fish are legally sold ex-vessel to a dealer, processor or the public; fishing support services are provided; there are public facilities providing dockage; fishing people satisfy their daily and weekly social and/or economic needs here, and some fishermen and their representatives participate in fisheries resource management.

As noted earlier, Beals-Jonesport ranks as highly dependent on fishing according to the ratio discussed in Chapter 3 of this report. Just as importantly, people of Beals Island and Jonesport recognize and acknowledge the critical importance of fishing to their communities.

##### Commercial fishing and fisheries-related employment

###### *Harvesting structure*

Lobstering dominates fishing on Beals Island year round. Ocean quahogs were second in landings recorded by NMFS (1997) data. Mussels are also important. Both dragging for wild mussels and bottom culture, in which case wild seed is dragged, dumped and harvested later.

In NMFS permit files, Beals is given as the address for 72 vessels, the most by far of any town in Washington County. In contrast, Jonesport was provided as the address for 32 vessels. However, Beals' landings, according to the federal records, are dwarfed by Jonesport's.

Most of the vessels tend to be in the 40-50 foot range, but beamy. "We don't have the docks, facilities or depth of water to take real large boats...the moorings couldn't hold them."

###### *Processing structure*

One local processor-dealer handles lobsters, crabs, soft-shell clams, and scallops depending on the season and their availability. Whelks were not available in 1997 due to problems with red tide. Product for processing is purchased wherever it's available. Two buyers work out of Milbridge and Cutler.

Ten jobs are provided year round; August to November, up to 60 people are employed. Ninety-five percent of the workers are from Beals, Jonesport and Jonesboro. Few people in Washington County have one full-time job, most work in different fisheries or even different occupations at times during the year.

When the company began, it was handling primarily live seafood, now it freezes product for sale anywhere in the U.S. Food service companies such as Sysco and Jordan's purchase the frozen product. Live product is sold primarily in Maine and Massachusetts.

### *Support Services*

A Jonesboro trucking company transports frozen seafood for local processors. Fish is offloaded and sold in Jonesport or in Portland, lobsters in both Beals and Jonesport; fuel and air (for divers) is available in Jonesport, boat repair is locally available, fishing gear is available in both Beals and Jonesport. Bookkeeping is often done by spouses, but some consult accountants in Bangor for income tax filing. (See introduction for discussion of boat building.)

### *Employment (year-around and seasonal)*

While estimates varied about the numbers of fishermen, it was generally agreed that 50 to 75 percent of the people in the area are directly dependent on the industry, the rest indirectly. "If fishermen don't do well, no one does well." Informants estimated there are 1000 fishermen in the Downeast region (1999). In Beals, 12 of the lobster fishermen in 1998 were considered "big," fishing over 1000 traps. By 2000, permitted lobster traps were limited to 800.

Gillnetters have been put out of business, so they now go lobstering.

Off-season jobs may include carpentry, boat building, welding, mechanic, finfishing, digging for clams or "winkles," blueberry and/or cranberry-picking, tipping and wreath-making, snow-plowing.<sup>17</sup> Security guard work, teaching and nursing are alternative occupations. A few people go into Ellsworth to work (over 50 miles). The Columbia Falls radar station employs some, services such as grocers, automobile sales, bowling alley and movie theaters provide additional employment.

### *Species, Seasons*

Though there are lobster landings year round, landings tend to peak in October, with high volumes also in September and November. Quahog landings in Beals are highest in May and June, with significant volumes January through March. Digging clams or marine worms is common in spring, summer and fall. In the fall and winter, picking periwinkles off the ledges, dragging for scallops, diving for urchins, keeping lobster pounds provides fishing and/or fishing-related income.

Federal data for Jonesport shows landings of rock crab, lobster, ocean quahog, periwinkles, sea scallops and urchins plus a small quantity of groundfish. "Winkles" (periwinkles) are sold in town to a buyer who transports them to Boston or New York. Ultimately, they are sold as "bar food."

Lots of people gather ten-ridged whelks and pickle them, but these are for home consumption (they don't travel well).

Pollock was the principal groundfish landed before marine mammal protection measures forced gillnetters to change gear and before the market shifted in 1996 and supply contracts to the US government shifted to the West Coast.<sup>18</sup> However, cod, white hake, haddock and cusk were also regularly caught.

<sup>17</sup> It is estimated that 2-3 million Christmas wreaths are made each year in Maine, making it one of the largest seasonal industries in the state. It takes on an average of 3-5 pounds of brush to make one wreath. Fir and pine tips or brush are among the most in demand. The supply comes from both small and large woodland ownership. The harvesting of wreath brush or tips is commonly referred to as "Tipping".  
<http://www.state.me.us/doc/mfs/ffchome.htm#Tips & Wreaths>

<sup>18</sup> Sheehan, E. and R. Moore, 1998, "Perspectives from Five Ports." Prepared for the Maine Dept. of Marine Resources by Coastal Enterprises, Inc. May.

Landed species typically include:

Groundfish: cod, grey sole, hake, halibut, plaice, pollock, winter flounder, yellowtail flounder

Small mesh: whiting

Shellfish: clams, soft-shell and mahogany clams (quahogs); conch; mussels; periwinkles, sea urchin

Crustaceans: lobsters, crabs

Pelagics: herring, mackerel

Other: bluefish, monkfish, skates (no one targets), squid, striped bass, worms

*Form of ownership (e.g., owner/operator; corporation)*

Most lobster boat owners are owner-operators, though there has been an increase in the number of people who employ a sternman (formerly, most fished alone). In addition, there are a few well-to-do fishermen who own up to four boats and employ captains to run three of them, especially for quahogging or dragging.

#### Recreational fishing and employment

Mackerel, flounder, pollock, codfish are caught recreationally by local residents, but it is expensive to start a recreational fishing business. There are only two small charter boat operations, one of which is primarily for viewing puffins.

#### Cultural role of fishing

##### *History*<sup>19</sup>

Beals Island has always been a fishing community. *“The young guys used to start with a clam hoe, build boats, catch a few lobsters, build up to where they could really go fishing, make money. Then, after the foreign fleets were kicked out, the government decided that we should upgrade our fishing fleet, so they provided loans to anyone who wanted a boat. ‘Course that was the worst thing they could ever do. Only the hard workers, the best could make it [before]. If they left it like that, we’d have fish today. If I had a grandson, he could go out and feel that fish tug on the line.”*

*“What gets me, if it comes to a war, they’re going to draft these boys and tell ‘em, go fight for freedom. What about their freedom? They have no freedom. They can’t go fishing like their fathers and grandfathers. A lot of ‘em can’t get into it. I feel for ‘em.”*

##### *Ethnicity in the fisheries*

Most of the fishermen were born nearby. All are white.

##### *Religion*

Various Christian denominations including Methodist, Seventh Day Adventist and Mormon.

##### *Kinship & family*

Most of people in the fishing industry in the area are children or in-laws of fishermen. Unlike fishing families in the other sub-regions of New England, some of our informants indicated that they would not mind if their children chose fishing as a career.

##### *Where fishermen go for coffee*

Tall Barney’s Restaurant

#### Fishing related organizations and their roles in the community and fishery

##### *Commercial fishing associations*

Downeast Lobstermen’s Association

<sup>19</sup> Davistown Museum has stories of Maine towns. See <http://www.davistownmuseum.org/bibMeTowns.htm>



## Perceptions of the Fishing Community<sup>20</sup>

### Importance of fishing to the community

Very important, "if there was no fishing industry here, there would be no town here." However, real estate is starting to be bought up by people "from away" with some negative consequences.

"The elderly people, they're being pushed out of their homes. Can't afford the taxes on them. 'Cause it's people from out of state saying, 'Wow, isn't this a quaint little town' and they build these mansions and that ups the real estate and it ups everybody's taxes and of course these people can't stay in their own homes, they're forced out of them, which is sad."

### Boundaries

Capital contacts can be divided up into those encompassing social capital (e.g., visit friends, go for recreation, go for vacation, visit relatives, socialize, go to church); economic (e.g., sell fish, offload fish, buy fishing gear, haul out for boat repairs, go to the bank, go shopping), and human (e.g., go to school, go for childcare, go for health care, go for retraining).

The people of Beals, Jonesport and Addison have the most contact with each other, but they have to travel quite a bit for many of their contacts—social, economic and human. Fish is offloaded and sold in Jonesport or in Portland, lobsters in both Beals and Jonesport; fuel and air (for divers) is available in Jonesport, boat repair is locally available, fishing gear is available in both Beals and Jonesport. Bookkeeping is often done by spouses, but some consult accountants in Bangor and Ellsworth for income tax filing. Contacts between buyers and sellers of lobsters are usually reciprocal. Harvesters generally buy bait and sometimes fuel and other supplies from the company that buys their lobsters.

Economic capital contacts for dealers/processors tends to be more geographically dispersed. For example, plastic packaging may be purchased in Massachusetts, cardboard from Canada, cleaning supplies from anywhere, and CO2 used in freezing from New Hampshire.

Like processors, dealers have economic contacts that are more geographically dispersed than do the harvesters. At least one family business is vertically integrated; that is, they harvest, pack and truck product to different states. They truck to New York themselves, send product to Pennsylvania and occasionally to Florida.

Shopping is done in Machias for groceries, Ellsworth and Bangor (80 miles-Penobscot County) for clothes, etc. Some banking is done locally, but Machias is considered the business center.

Human capital contacts depends on the level needed. For example, elementary schools are local, but the high school is consolidated. Community health care is available in Machias where there is a hospital, there's a new walk-in clinic in Jonesport, but one would go to Ellsworth for appendicitis and Bangor for "big problems."

Social contacts include local churches, sports events (especially high school basketball), movies in Milbridge or Ellsworth, vacations in New Hampshire or Florida (for the "high ones"—i.e., wealthy families), and weekends in Bangor; visit relatives locally and visit friends in adjoining states. Several informants mentioned that their favorite leisure time activity involved going out in their boat with their family to explore, maybe picnic, on different islands along the coast.

Technology is affecting the patterns of contact. With computers and the Internet, as well as cell phones, fishing industry participants are less isolated, even while working.

<sup>20</sup> Based on key informant interviews

### **Communication Issues**

Views on communication were at opposite poles. Some said it was poor, others claimed it was good. "Nobody listens to an experienced old guy who fished and did know something, 'cause they knew it all theirselves."

"Communication is very good as far as having the chance to talk to local, state and federal managers and representatives. Whether or not they listen, it's hard to say. We don't get any feedback." In general, communication has improved greatly since the Downeast Lobstermen's Association was formed. (Small lobstermen did not feel that the Maine Lobstermen's Association represented them at all well. MLA was said to be more attuned to Portland and Midcoast Maine.)

### **Assessments**

Bob Steneck does sound science. "Hands-on, he dives, goes down in submarines, goes out with fishermen, he listens to what we have to say...and then when he gets there, he says, 'oh wow, this is just like you guys said it was going to be.' So he works hand in hand with the community, but he's working on the science end of it." But he's the only one. "The rest of the scientists and fishermen are way out of touch, they strongly disagree"

*"The lobster survey that they do is during the daylight. Lobsters are nocturnal. You dive in an area during the day and you'd say, 'oh wow, there's no lobsters here.' You go and dive that area at night and boy, there's some activity going on. I've done it...They're taking a survey during the day when everybody's in bed...so if they took that same survey at night, they'd get a much different result."*

### **Local management practices**

Maine has long had v-notching and minimum and maximum sizes. Some of the lobstermen Downeast take the conservation measures a step further on their own. For example, when they catch a female with eggs, they handle her gently and ease her back into the water. Furthermore, it's not uncommon, if they see a 3 or 4 pound, broad-tailed female, even if it has not been notched and isn't berried-out, they are likely to return it to the water.

"And I'm not a wealthy man. I'll look at it, I'm looking at \$15 to \$18 maybe, but I'll cut it and throw it back 'cause I know it's a breeder. This kind of lifestyle means much more to me. It's my future [I'm protecting]."

People in the area are also careful about what else they throw into the water (e.g., no oil filters, etc.).

### **Economic Change**

Ten years ago, during the measure change, the economic condition of the lobster industry was poor. Five years ago it improved to "average" because the lobsters had grown and you could catch them legal size. Today, it's poor again. With the trap limit, there are too many traps spread through the water and too many lobstermen. It's anticipated that five years from now, it will also be "poor."

It is harder to make a living, there are too many greedy people and not enough conservation. There's also a decline in the quality of living, wives working full-time; stress, violence, alcohol and guns have increased.

### **Changes in fishing effort**

Fishing has changed drastically; haulers went from winchheads to 14-inch hydroslaves. Boats have improved, you don't have to haul out your boat and paint it every year 'cause everybody's got fiberglass and they last forever. You can fish heavier weather; you don't have to worry about beating your boat apart. Engines have gone from gasoline to diesel. Now all the big fishermen have at least one sternman, some have two. Wire traps also changed the fishery.

For quahogging, the dredges have been redesigned and are now much more effective (i.e., efficient). What used to take 24 or 25 boats to land, 6 or 7 boats can bring in now.

### **Effects of recent management**

Trap limits put more traps in the water by 50 percent. When the limit was set at 1200, people with fewer thought they better buy all the tags they could and are now trying to build up to the limit. Several new trap shops have opened, "they're tickled to death."

Cod and other groundfish are said to be coming back to the Gulf of Maine. Lobster fishermen note that that may be bad for their industry since codfish eat lobsters.

Zone management is the best thing that has happened to us. For example, southern Maine catches the bulk of their lobsters by October. Downeast, the bulk of lobsters is caught between September and November, so southern Maine lobstermen may be finished at the time we're just getting started. Also the southern Maine lobstermen tend to fish many more traps than are generally fished Downeast. "They fish trawls, 20 to 50 trap trawls. Here we fish 10 to 20 trap trawls, or single pots. One captain was complaining about what a bad year it was last year, that their sternman made only \$30,000. That's what the people [owner-operators] up here make, if we're lucky."

Some fishermen who quahogged in the past did not learn about limited entry requirements in time to qualify or apply for a license. Evidently there was some confusion among the fishermen about the Maine vs federal requisites. Some probably could have successfully appealed the denial, but it is expensive to attempt.

Regulations restricting the use of gillnets in order to protect harbor porpoise forced gillnetters out of finfishing.

### **Other**

There is a change in the ecosystem. It is much warmer now than it used to be. We regularly had seven or eight feet of snow, now the water doesn't even freeze. The water is warmer along the whole coast. Stripped bass, pogies, tuna are all more common. We used to get shedders in July; they now are caught in June.

### **Characteristics of local fishermen**

A good fisherman looks ahead, is conservation-minded, and loves the ocean.

#### *Safety*

Fishing is much safer now. "Hardly ever hear about someone losing their fingers."

#### *Job satisfaction*

Ninety percent of the fishermen wouldn't do anything else. "It's easy to love, you're outdoors, your own boss in the most beautiful place...." "It used to be at least, if you wanted to work hard, you could get ahead."

Nevertheless, some informants noted that many fishermen feel that there's too much gear around, too much gear conflict. "The big people don't want to cut back unless the little guy does and the little guy don't want to cut back 'cause he don't figure he's the problem."

### **Fishing families**

While children often help with lobstering, going out as sternmen during summers, the general consensus that seems to be evolving is that fishing is not a job that parents want to see their children do. "There's no future in it, it's slowly being pushed out." Most children are continuing with school through college or going into military service. Fifteen years ago 50 percent of the children in fishing families would get lobster licenses, now perhaps two out of 30 or 40 do so. Unfortunately, there are few job opportunities other than fishing in the area. "You can build a restaurant, everybody's got to eat," but generally, "you're either a fisherman or you're gone."

Some women take a bus to Milbridge to work in the factory packing sardines, though most that still do are getting old, no young people are involved anymore. It was hard, smelly work. You had to learn to cut and pack fast in order to earn more than minimum wage.

Some women do crab-picking at home, but the HACCP regulations force them to have a separate room with stainless steel sink and other equipment, no animals around, etc. Not all the regulations make sense and many women cannot afford to comply with all the requirements, so few are able to maintain their place in this cottage industry.

Perhaps as many as 60 or 70 people, mostly women, work as nurses or nurses' aides in the area if you include the hospital in Machias, the nursing home in Milbridge, boarding home, the Alzheimer place and home nursing.

Washington County, Maine  
Downeast region

### 5.11.1.2. Cutler

#### *Background*

Cutler has a deep harbor with an island lighthouse at its mouth. Steep cliffs, few harbors, huge tides, deep water and its proximity to the Hague Line are defining characteristics. It is a small fishing village with a population of 779, a small general store-restaurant and an historical commitment to fishing. In fact, fishing, lumbering and other resource extraction activities such as growing and harvesting blueberries provide just about the sum total of Cutler's economic opportunity.

Cutler is representative of the highly specialized fishing communities with small populations and limited occupational options found in Downeast Maine. People do their own book keeping, entertain themselves at home, save money and leftovers of anything and everything, and maintain a sense of self-reliance that harkens back to an era when rural America was where most Americans lived and small town values guided peoples lives:

*"You have to do everything and anything to make a living around here – there are all kinds of opportunities – heck yes – when I was young fella around here – when someone got a pile of wood in their doorway – people would ask to cut peoples wood on their porch – kids do know the value of the dollar – today kids don't have no choice – they don't have cows and chickens, We had wood to cut, we had water to haul, we had hay to cut- kids don't have it today, so they are lost, now today in this town there is not a house. There is nothing for the kids to do – the videos are the worst thing to happen the country – kids are spoiled by that damn mess- keeping things up yourself – doing your own work – need to save things. If you don't do it, there will be no jingle in you pocket."*

There is no town center to Cutler, and it exists as little more than a curve in the road linked to a small cove, with docks for local lobster crews and a small storage warehouse for their gear. It is a true NRC with a strong connection to local fishery resources. Cutler ranks 32 on the infrastructure differentiation scale, having little beyond what is necessary to support their small lobster fishing operations. It also ranks 35<sup>th</sup> on gentrification, meaning little movement towards alternative economies threatens the small-scale town and its fishing occupations. There are no bars, specialty restaurants, marinas, dockside hotels, or other resources to support a local tourist industry. However, Western Head and Cutler Coast trails do offer hiking along the rocky coastline and there is one Bed & Breakfast. Furthermore, "ten miles off Cutler is Machias Seal Island, a mecca for birdwatchers and photographers during the summer with large populations of puffins, razorbills, terns and other birds. A charter service is available from Cutler to Machias Seal Island."<sup>21</sup> Cutler is thirteen miles off U.S. Route 1 via Maine Route 191.

Talking with locals means talking about lobsters, about independent thinking and action, self-reliance and little direct interaction with the outside world. Although the primary fishing activity now is for lobster, with some occasional urchin fishing, crab fishing, and shellfish fishing, locals talk of the time not more than ten years ago when cod, flounders, and other finfish could be regularly caught nearshore and added to the local catch of lobsters. Any fish caught nowadays are often kept for local in-house consumption. Key respondents see declines in finfish as one reason why there are so many lobsters. Finfish prey on lobsters, but with their decline, the lobster population has exploded in nearshore waters off Cutler.

Key respondents also report that for the Cutler region changes have been noted in the weather, which seems to be more extreme over the last ten years, particularly with precipitation events and winter storms. This is consistent with the trend reported by Quayle (1998) that shows an anomalous increase in severe weather events in New England over the last decade.

<sup>21</sup> "Machias Bay Area" 1997 (brochure) Machias: Machias Bay Area Chamber of Commerce.

## *Demography*

### Population

1997 population was 779.

### Education

Cutler has an elementary school; the high school (Washington Academy) for the area is in E. Machias.

## *Governance*

Board of Selectmen and town meeting

## *Economic Context*

### Alternative job opportunities

Maine Wild Blueberry Company of Machias became the largest single processor of wild blueberries in Maine. Independent growers specialize in gourmet grade blueberries, sold through Fresh-Pack Cooperative in Machias.<sup>22</sup>

Woodlot owners supply lumber and paper mills and a seasonal wreath industry is centered in the Machias Bay region.

## *Fisheries Profile*

### Commercial fishing and fisheries-related employment

#### *Harvesting structure*

Cutler has approximately 25 fishermen, and a local representative of the Maine Lobstermen's Association. The average boat is 35 feet in length. There are two 40 footers that go 9-10 miles off shore. Trap numbers set by fishermen range from 180 to 800. Three individuals are known to scuba dive to harvest the modest population of sea urchins. Eleven vessels appear in the federal permit files of 1997 with Cutler addresses. In 1997 scallop and quahog draggers shared the harbor with the lobster boats.<sup>23</sup>

#### *Support Services*

Cutler has a harbormaster. Divers must go to Lubec or nearby Jonesport to get their air tanks filled. Although the icehouse closed years ago, and locals must go outside for fishing supplies to Machias, the importance of lobstering is apparent in the presence of three bait houses. Locals fish from a common wharf connected to five small docks.

Two local dealers buy lobsters and the occasional finfish and sea urchins, and fishermen on the wharf can sell to anyone who passes by. Lobsters are offloaded locally and shipped in crates. Lobsters are sold wholesale or retail, and can keep for two days if shipped in wood crates and are kept moist using flake ice shoveled on top of crates.

Fishermen do local boat repairs themselves, or boats are repaired by one individual who has a small wharf that can handle boats up to 50 feet in length.

#### *Employment (year-around and seasonal)*

In the winter, those who don't fish sea urchins may work lumbering for home firewood.

Nearby Salmon Nordic, a Norwegian corporation, runs aquaculture pens. Employees from Cutler monitor the pens and harvest the fish when ready, using large dip nets.

In the summertime, one lobster fisherman will take the occasional visitor whale watching.

<sup>22</sup> Ibid. Maine wreaths hold over 20% of the entire wreath market, selling about 3 million wreaths and making millions of dollars over an approximately 8 week period.

<sup>23</sup> Ibid.

*Species, Seasons*

Summertime is the height of the lobstering season, and most folks have little time for recreation: *“Most of us, especially in the summer, don’t take vacation – that’s when we make our money”.*

Out of the 25 fishermen, maybe 15 fish in the spring. As a rule only one or two will fish in the winter. Only some landings of urchins and quahogs were recorded in the federal landings data for 1997.

Landed species include:

Crustaceans: lobsters, crab

Pelagics: herring

Shellfish: urchins, quahogs

Other: striped bass, sea cucumbers, seaweed (Irish moss)

Cultural role of fishing*Religion and values*

There are only two churches in Cutler, one Baptist and one Methodist.

Like a Midwest farming community, the work ethic and related Protestant values are strong in Cutler. Those who don’t work in Cutler find little else to do. They often will join those who become “from away”- the young seeking new opportunities, those who decide to retire in Florida, or those for whom there simply is no room to stay. Fishing – and hard work - will certainly remain the primary option here:

*“When I got 65, my doctor asked me if I was going to retire, and I said no – so he said thank God – I have people coming in here who retire and then have all kinds of things wrong with them, well I don’t feel good here and I don’t feel good there. I tell them, well, when you were working there was nothing wrong with you – do you think I can put you back together with pills? Do that for yourself- go out there and work— as long as you keep these things busy (your hands) your head is OK – don’t let your head get ahead of your hands.”*

*Training*

As younger folks come into the fishery, lobstermen are mentoring them through an apprenticeship program. Yet, the experience gained through many years fishing is often hard to impart in the span of a year, and as conditions change, what fishermen think and know and predict today about fishing conditions, weather, and the tides can change with time:

*“Fred was sitting on his doorstep when a guy with New York plates come up and says he wanted to know all there was to know about fishing. What Fred told him was that all he knew was that it changes from year to year – you can fish one area one year and do real good- and next year there may be nothing...All I can tell you is that from year to year things change, but we somehow make a living – my philosophy is to spread my traps around – not put all your eggs in one basket. – No one man can tell you all there is to know about fishing – fish traps in different areas – since lobsters move about from year to year.”*

**Perceptions of the Fishing Community<sup>24</sup>****Importance of fishing to the community**

Fishing is very important to Cutler.

<sup>24</sup> Based on key informant interviews

### **Boundaries**

Going out of town means going to Machias – shopping, banking, eating, visiting friends and relatives, going to the doctor, all take place in Machias. Social and family networks are abbreviated in Cutler, and few extended families are around to help with activities such as childcare and health emergencies. However, many of the existing families are related to each other by common descent. They also share a small common place and space that leaves life in the open. As one key respondent said, *“You have to be careful what you say- everybody will hear it”*.

Sharing of information at sea is a common activity. Lobster gangs in Cutler consist of 4 to 5 people, who will share information on lobster densities, weather and the tides. Because there is a 3-4 foot tide and rough water off Cutler, that doesn't leave much time to engage in casual chat over a cell phone, and most conversations are short and to the point. : *“We don't say much because with the tides at 3-4 feet you must really work when the traps have to be taken out – most of the time you are so busy there is no time for talking – you only have time for your work.”*

### **Communication Issues**

Cutler is geographically and politically isolated from the mainstream of fisheries politics in Maine. Local fishermen complain about poor communication with regional managers, with a major complaint being proposed changes in the vent size on lobster traps. On 1-5 scale, communication with fishery managers rates a '3', with state managers a '2', and with federal managers a '1.'

### **Assessments**

Fishermen and scientists are said to “strongly disagree” on the science of local fisheries. The complaint given is that they rarely go out to see *“ changes that occur from day to day – sometimes these changes are good – sometimes they are bad – but they occur very quickly – faster than the scientists can measure them.”*

### **Local management practices**

Locals attribute the disappearance of groundfish stocks to the intrusion of large trawlers in nearshore coves and inlets. Prior to the regulations that encouraged larger vessels to fish in grounds closer to shore (e.g., DAS), these populations were always underfished. Traditionally, they were taken with small net gear and hook and line, never in large tonnage. This was part of a mixed fishing strategy that changed with the season and included shellfish (clams and mussels), lobster, halibut, cod, and other species such as sea urchins and quahogs.

### **Economic Change**

On a one to five scale, fishing was ranked as average (3) ten years ago, five years ago was good (4), and good today due to the abundance of lobsters. There is concern that this abundance can't last, and that five years from now the fishery could collapse.

Other changes include a decline in squid and shrimp, taken by purse seiners out of the local bays. A collection of other species are caught in small quantities, including crab, herring, striped bass, and sea cucumbers. Seaweed and Irish moss are also harvested around Grand Manan Island. With the exception of lobstering, all other fisheries are rated on a one to five scale by key respondents as a “one”.

### **Changes in fishing effort**

Some significant changes in the coastal fisheries have been noted over the last ten years, and these have resulted in changes in the seasonal strategies and aspirations of local residents. The biggest change noted has been an increase in the numbers of lobsters and a decrease in the availability of codfish:

*“I think that the codfish is like a vacuum cleaner. I think that when there were so many codfish here, they ate a lot of the lobsters. Once there was trawler offshore of the lake. These were big fellas*



*(boats) – they pretty much cleaned out the Bay of Fundy and the cod there have never bounced back. I remember one guy took 20,000 pounds off the mouth of the lake. Fishing after that was never the same. This is because the head of the Bay of Fundy was a great spawning ground for big codfish – some weighing 50 pounds apiece. Another thing that has increased is the number of seals. Seals can eat a lot of lobster and finfish. Around here on the point you can sometimes see up to 75 seals on the rocks.”*

Another noted increase has been in the sea urchin population. There is an active market for urchin roe overseas, and the sea urchin population is still abundant in Cutler waters because the roughness of the water and topography of the bottom make it difficult to trawl for urchins here as is done elsewhere. The best way to get the urchins in Cutler is hand picking them by diving over the bottom for them.

### **Characteristics of local fishermen**

*“What makes a good fishermen is a fellow who is a good worker – somebody who is willing to get out of bed in the morning. To be successful as a fisherman you have to be willing to work – if you are just in it for the dollar – you won’t do any good. You must be careful to put some things away for a rainy day – because they will come – Work is the spice of life – work is what keeps your body in shape.”*

### **Safety**

Changes in fishing technologies and gear have made fishing safer, but the increasing competition and increasing number of pots used have put fishes farther out for longer periods in sometimes bad weather. Fishing characteristics of sharing information through the use of cell phones has made it easier to contact others when you are in trouble – either other fishermen or the U.S. Coast Guard if it is a real emergency. Unlike the days when your gear could kill you, things are now a bit easier.

### **Fishing families**

Women will raise children until they are old enough for school (it goes only to the eighth grade locally, with high school in Machias), and then seek shoreside employment, usually in Machias, as clerks, bank tellers, or in other comparable jobs.

In Cutler, there has been good recruitment into the fishery in recent years, and with the good quality of environment and a healthy fishery, there are younger fishermen in Cutler and the surrounding region than in many other parts of the coast. Thus, the social, cultural, economic and human capital of the region are being replenished and sustained by a local robust lobster fishery (biophysical capital).

Washington County, Maine  
Downeast region

### 5.11.1.3. Eastport

#### *Background*

Founded in 1780 and known as Plantation 8, incorporated as a town in 1798, and incorporated as a city in 1893, Eastport is an island city—comprised entirely of the islands of Moose, Carlow, Dog, Treat, Burial, Spectacle, Matthews, Goose, Dyer, and numerous islets. Moose Island is connected, by way of a tidal-dam causeway to Carlow Island, which is in turn is connected to Pleasant Point Passamaquoddy Reservation on the mainland.

“During the War of 1812, the islands and mainland of the area were claimed by both Great Britain and the United States. A shotless battle occurred at Eastport’s then-existing Fort Sullivan, when the British Navy sailed in. With overwhelming troop strength, and without a shot fired, they seized the fort and Moose Island. After being held by British troops for four years, the Treaty of Ghent settled the boundary between Canada and the United States, making Eastport American, once again.”<sup>25</sup>

Eastport represents an intra-regional port of the Downeast sub-region. This most eastern city in the US is a frontier (border) community with a history of mixed adaptations and economy, including boat building, lumbering, fishing, and shipping. In 1883 Eastport was the second busiest port in the US, with 1,820 entries of which 1,784 were foreign vessels. Shipping by water stalled in the 1940s with the end of the Eastern Steamer line during WWII. Today, the municipal pier is again being utilized by ocean-going freighters to transport products to foreign ports. The vast majority is forest products such as paper and paper pulp.<sup>26</sup> This provides important income to dockside stevedores, although income varies with international market demand for paper products. In the first part of 1998, there was an average of three vessels per month calling in Eastport, serviced by two tugs in the port, and the port authority is striving to gain new shipping contracts. In order to provide even more service, a new port facility is currently under construction at Estes Head on Moose Island, which will be able to simultaneously accommodate two ships at that location.

Citizens of Eastport, both now and in the past, survived and prospered by mixing occupational strategies and roles. Because of this mixed economic activity, fishing represents a seasonal and variable part-time activity. According to key respondents, twenty years ago, before the advent of layers of regulations, and with healthier inshore fisheries, some Eastporters did survive by fishing full-time, but never on just one stock. Seasonal switching of fishing could include groundfishing, scalloping, clamming and a small lobstering effort. In addition, many fishermen would tend coves for herring using stop seines or weirs, of which a dozen are still in operation. This included the use of spotter planes to identify shoals of herring in tended coves.

The opinion of several key respondents is that people can do quite well for themselves if they are willing to work hard. Finfish such as mackerel, cod, flounder, and others now represent a minor catch effort in comparison to fishing for lobster, clams, sea urchins and sea cucumbers. In the winter, boats go out into the local bays to drag for scallops and sea urchins. Sea urchin roe is sold to Asian markets, and scallops go south to a dealer in Milbridge.

Although 12 weirs are still in operation for herring, the canning of herring as sardines has collapsed as a local industry. The last remaining U.S. company (Stinson Seafood) was bought out in 2000 by Connors Bros., a Canadian company that is a division of Westin Corporation. Connors Bros. still has canneries in Lubec, Bath, Belfast, and Prospect Harbor (Maine) and in New Brunswick (Canada). In 1882, Eastport had 18 canneries. In 1904, 87,224,524 pounds of

<sup>25</sup> Chamber of Commerce web page

<sup>26</sup> Chamber of Commerce web page

herring were packed out of Eastport. By the 1960s, the canneries had been reduced to two, and by 1983, the last cannery in Eastport, Holmes Packing Corporation, closed its operation. The loss of herring processing has been replaced to some extent by salmon aquaculture. Key respondents estimated that 150 people work in salmon aquaculture, a third of whom are women, compared to 75 in fishing. Another sea farming operation, the first commercial Nori seaweed (used in sushi) production and processing facility in North America resides here.

Aquaculture was introduced here in the 1970s, with the first home-style salmon pens put in place in waters off Eastport. In March 1982, Ocean Products came to Eastport and set up pens in Deep and Broad Coves. By October, they were breeding some 20,000 salmon hybrids for market. In 1983, they expanded their operation with acquisition of a freezer plant. In 1999, Ocean Products was gone, but has been replaced by Maine Aqua Foods, a British Columbia-based operation and other smaller firms. You can now see extensive salmon pens at several points around Eastport, and salmon farming has expanded into other areas such as Deer Island, Machias Bay, Campobello, and New Brunswick. The same strong flushing action of the tides in Cobscook and Passamoquoddy Bays that constrains the lobster fishermen works to the advantage of the aquaculturalists by removing wastes from around the floating pens twice daily.

Before the collapse of the nearshore finfish fisheries, tub trawling was a predominant fishing technology. In tub trawling, a groundline secured on both ends is set out on the bottom. The ground line could be as short as a few hundred feet or as long as a mile, with anchors at both ends that have lines to the buoys. Feeder lines called “snoods” or “gangions”, two or three feet in length with hooks at their ends, are attached to the ground line about six to twelve feet apart. The hooks are baited with anything from herring to cod. When the trawl is not in the water it is coiled in a tub – hence the name. Tub trawling occurred from the first of May until the middle of January. Two decades ago, tub trawlers could bring in several thousand pounds of fish, but today is no longer practiced.

## *Demography*

### Population

According to the 1990 census, Eastport had a population of 1,965, down from its peak of 5,300 in 1900.

### Age Structure

Eastport had 426 children, 374 of whom were enrolled in school.

### Education

Known internationally for its outstanding marine-oriented programs—especially boatbuilding—Washington County Technical College is a non-profit, residential, post-secondary, associate degree granting institution supported, in part, by appropriation from the Maine State Legislature.<sup>27</sup>

### Racial and Ethnic Composition

92.37 percent of the population in 1989 was white. American Indians (or Eskimo/Aleut) constituted 5.7 percent, 1.17 percent were Asian/Pacific Islander, and .76 percent were Hispanic.

## *Economic Context*

### Employment

Key respondents emphasized that most people were “doing well”, with fishing being only one option among a variety of diverse regional activities. For example, some fishermen work for the Federal Marine Terminal, where wood products are loaded for export. Besides the active port, salmon and nori aquaculture, and the traditional fishing industry, other industries include fiber extrusion and a textile mill. Other jobs include working in town (one in a hardware store), carpentry and painting of houses, and wood cutting – cutting wood for others on private lands.

<sup>27</sup> <http://www.wctc.org/about.html>

### *Transportation and Access*

In the summertime, Moose Island is connected by way of toll ferry to Deer Island. For those travelling further, another toll ferry sails to Campobello Island, while a free government ferry operates between Deer Island and L'Etete on the New Brunswick mainland.

Currently under development is a proposed year-round car ferry between Eastport and Lubec, which would reestablish the former method of travelling between these two communities, and would compliment the number of existing ferries in the Quoddy Loop.

### *Fisheries Profile*

#### Community

Eastport fulfills the basic definition of a fishing community developed by ASMFC since fish are legally sold ex-vessel to a dealer, processor or the public; fishing support services are provided; there are public facilities providing dockage; fishing people satisfy their daily and weekly social and/or economic needs here, and some fishermen and their representatives participate in fisheries resource management. However, fishing is just one of the myriad of activities individuals engage in to make a living.

#### Commercial fishing and fisheries-related employment

##### *Harvesting structure*

Approximately 75 individuals are employed full or part time in fishing. Twelve weirs are still in operation for herring. Only 2 vessels on the federal permit list of 1997 list Eastport addresses, but for 1998 the State of Maine listed 15 lobster/crab permits, 19 scallop permits, 6 commercial shellfish, 12 commercial fishing, 14 urchin, 4 seaweed, and 1 eel/elver in Eastport.

##### *Processing structure*

Engelhard's Specialty Pigments and Additive group maintains a production facility with 15 employees in Eastport for the manufacture of Natural Pearl Essence. The facility has produced their specialty effect pearl pigment from herring fishery by-products since 1933. The pigment is used in cosmetics, coatings, and plastics.<sup>28</sup>

##### *Employment (year-around and seasonal)*

Fishing has never dominated the port as it does in Maine communities such as Beals Island. Instead, it exists as part of a mixed economy, with most fishermen having one or more alternate jobs besides fishing' *"No one here makes their living solely from fishing."*

Key respondents estimate that 150 people work in salmon aquaculture, of which a third are women. This contrasts with an estimate of only 75 individuals employed full or part time in traditional fishing.

Some of those who work for the aquaculture (salmon) industry use a boat (salmon tender) that removes fish from the pens. Using a floating net reel, the pen is raised up on all sides and then the salmon is dipped out into totes which are lifted by crane on a tender.

Clamming is enjoying a resurgence of interest. Cobscook Bay Resource Center has been working with local residents to increase the viability of local flats.

##### *Species, Seasons*

Scalloping is the dominant fishery in Cobscook Bay. However, because the season opens two weeks earlier here than in the rest of Maine, boats "from away" steam here to take advantage of the opportunity. Because the local vessels are used primarily as day boats and therefore cannot

<sup>28</sup> <http://www.cobscookbay.com/Eastport.htm>

travel long distances to explore alternative grounds, the local fishermen feel that the opening should be synchronized with the rest of Maine to make the local fishing sites less attractive to boats from away.

In Eastport lobster fishing is a minor part of a mixed strategy of adaptation to limited economic opportunity. The ecology of the bays is very different from that of other areas in Maine, so the fisheries options for these fishermen are quite different. Passamoquoddy and Cobscook Bays are not productive lobster habitat. The few lobster fishermen (there are 6 boats – but only two fish more than 50 traps) include two boats with 800 traps, though one normally only fishes 600 traps. The four 50-trap boats go out only on occasion, when there is nothing else for the owners, who all work other jobs, to do. Clams are still dug, and occasionally periwinkles, while harvesting sea cucumber is the most recent niche fishery. Recent efforts to rejuvenate clam beds have resulted in 1,000 acres of productive flats around Cobscook Bay, as local clam committees have taken a more active role in managing their own resources.<sup>29</sup> No landings were recorded for Eastport in the federal landings data for 1997.

Finfish such as mackerel, cod, flounder, and others now represent a minor catch effort in comparison to fishing for lobster, clams, sea urchins and sea cucumbers. In the winter, boats go out into the local bays to drag for scallops and sea urchins. Sea urchin roe is sold to Asian markets, and scallops are sold to a dealer in Milbridge.

#### Cultural role of fishing

##### *History and museums*

The Quoddy Maritime Museum

##### *Festivals*

The Salmon Festival is held the first Sunday after Labor Day.

#### Fishing-related programs and services

##### *Training institutes*

Washington County Technical College's Marine Technology Center is in Eastport. It offers courses in wooden boat building as well as marine technology and sciences.

##### *Other NGOs*

Sustainable Cobscook Community Alliance—volunteer group of citizens whose goal is developing sustainable communities on Cobscook Bay.

## **Perceptions of the Fishing Community<sup>30</sup>**

#### **Changes in fishing effort**

A major complaint is that all of the fisheries have declined, mostly due to over-fishing, and the influence, according to some, of large offshore purse seining and trawling operations on inshore fishery stocks.

Aquaculture and scallop management are issues significant to the Eastport fishing industry. (See Lubec profile for a discussion of scallop management issues.)

<sup>29</sup> Cobscook Bay Resource Center is working with residents in the area to reclaim clam-flats.

<sup>30</sup> Based on key informant interviews

Washington County, Maine  
Downeast region

#### 5.11.1.4. Lubec

##### *Background*

Lubec is the easternmost town in the United States of America, at the southern entrance to Cobscook Bay. Lubec is geographically a large area, divided into the 'village' to the east, North Lubec on a north-extending peninsula to the west of the village, and South Lubec to the south. Its population has hovered around 1,850 for the past decade. Lubec's history is rich with fishing. In 1880 the first sardine canning facility was built in Lubec, the Lubec Packing Company. Interestingly, this is also the only remaining sardine cannery in Lubec. At one point as many as 17 different canneries operated within the town of Lubec. The supply of herring for sardine canneries in Maine came from local weirs, fixed gear that corral schooling herring. While the herring industry in Lubec has been in decline for more than 50 years, aquaculture, lobstering and some other fisheries have grown, leading to a community that is once again on the up-swing. Groundfish are not targeted by many in the Downeast region. The most common fisheries are dragging and diving for both scallops and sea urchins and pot fishing for lobster.

##### History of the Sardine Industry

The sardine canning industry was created in the Quoddy region by Julius Wolff, a German-born New York sardine importer. During the Franco-Prussian War of 1870, his supply of French sardines diminished. Then, when a gold-based government duty was imposed on imports he began looking for alternative sources of sardines and found the Passamaquoddy area to be an abundant supply of superior product.<sup>31</sup> He established the Eagle Preserved Fish Company at Eastport in 1875, packing and selling 60,000 cans the first year. As other importers became interested, new canneries were built and by 1880 there were 18 factories in Eastport and one in Lubec. In the following two decades, 23 sardine plants started up in Lubec.<sup>32</sup> The original West Indies market for sardines began to decline, but was quickly replaced by growing sales to the American West, and as a food source for cotton workers and coal miners.<sup>33</sup> The herring industry boomed around World War II when sardine purchases by the Federal government to feed US troops accounted for 80 percent of the industry's annual pack.<sup>34</sup> There were 50 plants along the coast of Maine in 1950. As markets developed for herring by-products such as fish oil, pearl essence, pet food and lobster bait, 16 more plants were constructed. But by the 1960s, the domestic market for sardines had diminished, production was low and stocks were depleted by foreign fleets. Cheaper imports and costly mandatory pollution controls further constrained the industry. By 1975 only 15 packing plants were left in Maine.

##### Aquaculture in the Area

Salmon aquaculture first began in Canada and quickly spread southwest to the United States during the mid-1980s. Pen aquaculture succeeded in the region in large part because of the flushing action provided by the unusually high tides (>20 vertical feet) in the region. These tides are a product of the synchronous timing of the lunar tides and a seiche caused by the unusual geography of the area. The flushing limits accumulation of harmful waste materials from the aquaculture sites.

The technology of aquaculture was first adopted by families and small groups of individuals who built pens by hand and undertook the experimental phase of establishing aquaculture as a commercially viable marine enterprise. They were helped initially by the high prices pen-raised Atlantic salmon garnered in the marketplace. As aquaculture flourished in Maine and other areas, including Chile and Norway, the price of Atlantic salmon decreased and the profit margin was too narrow to run pens on a

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<sup>31</sup> *Lubec Herald* article

<sup>32</sup> <http://seagrant.gso.uri.edu/region/noreaster/noreasterFW97/Sardine.html>

<sup>33</sup> Informal interview

<sup>34</sup> Kaelin, J. 1996. *The Maine Sardine Industry*. January.

small scale. This led to the buy-out of pens, aquaculture leases and businesses by Canadian corporations who compensated for the small profit margin by handling large volumes. The current owners in the Lubec area are Maine Aquafoods (a division of International Aquafoods), Stoltz Seafarms, Atlantic Salmon of Maine and Heritage Salmon (formerly Connors).

Five to seven years ago, R. J. Peacock Co. processed for 10 salmon farms. Since some of the companies have moved, there are fewer to process for. Peacock currently processes for 2 farms, owned by Maine Aquafoods. The Medric 2, a pen-tender made from PVC, holds the contract to unload the pens and deliver the fish to Peacock's Cannery. The fish arrive at the cannery where they are filleted to order and quick-frozen using a patented process involving propylene glycol. The product of this processing method is marketed under the name 'Tru-Fresh', and is considered a superior value-added product because the process does not cause cell damage to the fillets during the cryogenic process. Peacock processes 10,000 fish per day, three days per week. Hannaford Bros., a grocery chain in Maine and up state New York, buys the entire production by Peacock from Maine Aquafoods.

Salmon, steelhead trout, mussels, and oysters are currently produced in Maine, as well as some seaweed. Three vertically integrated companies are responsible for ninety-five percent of the state's cultured production. Halibut, clams, groundfish, urchins and scallops are "in development." Most shellfish farms are family-owned and operated.<sup>35</sup>

#### Sea Urchin Industry

Sometime in the 1980s, Japanese came to Lubec looking for an alternative source of sea-urchins should their preferred choice, the red urchin of the west coast, become unavailable. They experimented with the local sea urchins and kept the industry active. Soon, diving for wild sea urchins became a sustainable business. The harvested product was sold to buyers who took them to Boston or Portland for final processing.

Urchin harvesting is not as profitable today as before. There has been a decline in the quantity of sea urchins landed annually and the numbers of people harvesting sea urchins. Some of the buyers for sea urchins have gone out of business (although some say it was not for lack of urchins, but other reasons). R.J. Peacock Canning Company, which processes salmon from aquaculture farms, has a "special projects division" that is conducting a research program experimenting with raising sea urchins in an attempt to get them to marketable size as quickly as possible. They believe they have found a viable way to reduce mortality and increase the yield.

Another company, UniFarms, is attempting to increase the roe percentage in "junk urchins" (legal-sized urchins with low roe content) by holding them and feeding them in indoor tanks.<sup>36</sup>

Acadia Seafood International is working on both increasing roe quality and replenishing the stocks through a hatchery and grow out program.<sup>37</sup>

#### Annual Round

The annual round is still a way of life in Lubec. Most jobs do not provide year round employment. Jobs often need to be subsidized by seasonal work. As noted above, both urchin fishing and scallop fishing are seasonal fisheries limited to winter months. Lobster fishing is a year-round fishery, but is slower and more difficult in winter. Cannery work exists all year, but not forty hours a week. Non-fishing-related jobs have become part of the annual workload for many people, both those involved in fishing and those not. In August and September people are hired to rake blueberries, still the only means of harvesting them. It is common for people to actually leave their other jobs until blueberry season is over. In fall people work cutting 'tips', pine boughs, and making wreaths from them for sale throughout the country. This is usually done in addition to another job. Additionally, some people

<sup>35</sup> <http://www.maineaquaculture.org/industry/profile.htm>

<sup>36</sup> <http://www.bangornews.com/specialreports/gulf/lubec.html>

<sup>37</sup> [http://www.mainescience.org/quest\\_success.01.ASI.html](http://www.mainescience.org/quest_success.01.ASI.html)

supplement their income in various parts of the year by digging for soft-shell clams or collecting periwinkles. Both species are sold to local buyers who then sell most of the product outside the local area. One key-informant described the harvest of periwinkles as 'cigarette money'.

## *Demography*

### Population

According to the 1990 Census, 1,833 persons lived in Lubec.

### Age Structure

The Census counted 389 children, 347 enrolled in school.

### Housing

The median housing value of the 1,014 houses was \$53,305 in 1989.

### Racial and Ethnic Composition

Of the population of 1,833, 98.8 percent were white. A very few blacks, American Indians and Hispanics composed the remainder.

## *Economic Context*

### Income

The median household income was \$14,398 and the per capita income was \$8,761 in 1989. According to the Census, 25.9 percent of the population lived in poverty.

### Employment

Though marine-related employment dominates in Lubec, non-fishing-related jobs are part of the annual workload for many. Blueberry harvesting, tipping and wreath-making are popular seasonal jobs.

## *Transportation and Access*

Lubec is 11 miles from the intersection of US Route 1 and State Route 189, across a portion of Cobscook Bay from Eastport and a bridge from Campobello Island, New Brunswick.

## *Fisheries Profile*

### Community

Lubec is a community that is very dependent on fisheries. The three major employers in the town are Lubec Packing Company, R.J. Peacock Canning Company and three aquaculture farms, which together provide about 250 jobs.

### Commercial fishing and fisheries-related employment

#### *Harvesting structure*

Groundfish are not targeted by many in the Downeast region. The most common species landed are scallops, sea urchins and lobster. Seven vessels in the federal permit files for 1997 list a Lubec address. There were no landings listed for Lubec in the 1997 federal landings data. However, according to State records, Lubec shows 53 lobster/crab licenses; 57 commercial shellfish licenses; 43 scallop permits, 32 commercial fishing licenses, 42 urchin licenses, 3 permits for marine worms, 7 eel/elver permits and 6 seaweed licenses in 1998 (243 total). In 1999, there were 50 lobster/crab licenses, 89 commercial shellfish, 54 scallop permits, 38 commercial fishing, 42 urchins, 2 marine worms, and 2 eel/elvers for a total of 278 permits.

Scallops are harvested in state waters by divers using scuba or by small (<50') boats towing dragging a steel dredge. Dragging is by far the more common method. Scallops are fished in winter, with the exact dates of the season set annually by the Maine Department of Marine Resources.



Sea urchins, called “whore’s eggs” in Maine, are harvested using the same methods as scallops. Indeed, there is some overlap in the fisheries. Initially, the same dredges were used for both scallops and urchins. Only within the last few years have specialized dredges for urchins been developed, which do less damage to the fragile urchins. The seasons for both are controlled by DMR and roughly the same, but have slightly different dates. Further, while the same gear is used to harvest both species and both species regularly come up in dredges, fishermen are only allowed to fish for one species or the other at a time. Opinions differ on whether dragging urchins or manually harvesting urchins is more effective and economical. Some contend that urchins are so sparse now you must drag to cover enough ground. Others say there are still enough areas thick with urchins to make diving more lucrative. The “dwindling wild urchin population and lower quality roe—or uni— compared to that sold by California exporters to Japan” is being addressed by a least two companies who are experimenting with feeding urchins and developing a hatchery.

Herring is caught in local weirs in the summer.

Lobsters: Lobster fishing is a year-round fishery, but is slower and more difficult in winter. Unlike southern/western Maine where it is common to fish trawls of 10-15 pots, Lubec area lobstermen fish ‘doubles’ and ‘triples’, i.e., only two or three traps per set of buoys. The environment around Lubec limits the number of traps that can be efficiently handled in a trawl. Lobstermen here typically put 100 lbs. of weight in a lobster trap to keep it from being moved around the bottom by the unusually high tides and strong currents. These same tides and currents limit lobstermen to a window of about 45 minutes to pull traps outside of Passamaquoddy Bay. The currents are so strong that the trawl buoys are irretrievable except in slack water. These conditions make it difficult to fish large numbers of traps.

Rockweed: Some Canadian processors have shown increasing interest in harvests of seaweed.

#### *Processing structure*

The Lubec Canning Co. is strictly a processing facility, working under contract to companies who provide the herring and packaging and market the product. Until recently the Lubec Canning Co. was under contract to the Connors Bros. of Canada. When Connors Bros. elected to move their operation to Canada, Stinson Seafood of Prospect Harbor, Maine contracted to buy Lubec Canning. Connors Bros. is now in the process of buying Stinson. During the summer herring comes from local weirs. When the herring migrate south seasonally they are trucked to the cannery from wherever they are caught in S. New England. This results in year-round operation of the cannery, leading to about 180 working days.

In addition to cutting and canning herring as sardines, Lubec Canning also cans herring ‘steaks’ cut by machine at another facility. As a value-added process, Lubec Canning also packs sardines in a variety of flavorings including water, soybean oil, Cajun sauce and mustard. The Cajun sauce is bought from Louisiana and the mustard is purchased from Raye’s Mustard Factory in Eastport, Maine. Undesirable fish, cut heads and tails and herring not packed before spoiling are collected and sold as lobster bait or for processing into fishmeal. The herring oil is collected, pure, from processing and used in packing and burned as a fuel for heat.

A by-product of removing herring from weirs with suction pumps is that it removes their scales. This provides herring that are more marketable, and creates a side-industry utilizing herring scales for making mother-of-pearl and pearlescence for use in cosmetics. The scales from herring processed by Lubec Canning are sold to a pearlescence plant in Eastport, four miles away by water.

Currently there is one other processing plant operating in Lubec, the R. J. Peacock Canning Company, which no longer cans sardines, but instead exclusively processes pen-raised salmon. The Peacock family has owned a controlling interest in a Lubec plant since 1894. Currently the Peacock family is in a partnership with financiers from New York State and Morocco.

### *Support Services*

Lubec lacks many of the commonly associated infrastructure elements of a fisheries-dependent community. This seems to be related to the proximity (4 miles by water) of Eastport, a fisheries-dependent city that provides many of the necessary services. Eastport is considered the main contact for purchasing fishing gear, followed by Harrington (50 miles south) or delivery from Bangor (100 miles west). While there is no bait seller in Lubec, the sardine cannery produces herring as bait that can be bought by locals in large quantities only. One respondent from the lobster fishery said that they drive to Blacks Harbor, Canada to purchase bait (2 hours away).

Most boats are not hauled out in the normal sense. In Lubec people take advantage of the large tidal range to beach vessels to work on them. The owners often do their own boat repair. New boats can be purchased in Harrington, or many other places in Maine, but most buy used vessels from other fishermen.

Catches are sold locally. Salmon from one company's aquaculture pens is offloaded at the Peacock Cannery where it is processed. A local trucker holds the contract for shipping all of the salmon production. Other species (scallops, urchins, lobster) are sold locally to dealers. In the case of urchins, these dealers are not local individuals, but people who come from southern Maine in season to purchase product that is then shipped to Portland for processing.

While one key informant did note the importance of tourism, citing the presence of at least six hotels and Bed and Breakfast establishments, there is a paucity of marine activities catering to tourists. Lubec has only one excursion boat. This is a unique case for a second reason as well. The owner/captain of the excursion boat was a fisherman who took advantage of a state-funded retraining program last year to earn his captain's license. There are no commercial ice sellers in Lubec, but the Peacock cannery makes ice for its own use. This is for sale, but there are very few buyers.

One cannery still packs sardines exclusively; the other exclusively packs salmon products.

### *Employment (year-around and seasonal)*

There are approximately 100 to 125 fishermen in Lubec.

The Lubec Canning Co. currently employs approximately 120 people, half of them cutting and packing sardines, the other half in related processing roles. Contrary to popular belief, 'the problem in the area is not unemployment, but under-employment.'<sup>38</sup> The Lubec Packing Co. cannot find enough employees to work at full potential. It should be noted that a new group of employees is growing in the cannery- young fathers who are required by welfare to find employment. The majority of the employees are still women, ranging in age from 16-83. Employees are paid by the piece, with minimum wage (\$5.15) guaranteed. Employees working as packers almost always earn above the minimum wage, while other plant workers are constrained by the minimum hourly wage. In contrast to other employment opportunities in the area (restaurants, retail), cannery work is very difficult work for an equal wage. One tactic employed to gain and keep employees is the pick-up and return of employees by company van. Without the free transportation, no one would come to work.<sup>39</sup>

The Peacock Cannery employs 75 people "full-time."<sup>40</sup> The aquaculture farms provide another 50 or so jobs.

<sup>38</sup> Peter Boyce, Manager, Lubec Packing Co.

<sup>39</sup> Key respondent interview.

<sup>40</sup> "Full-time" in Lubec means that the job provides the main source of income for the individual. It does not necessarily mean a 40 hour/week, 50 weeks/year job.

Cultural role of fishing*History and museums*

McCurdy's smokehouse, part of a defunct cannery, is in the fundraising stages of being restored as a museum.

Fishing-related programs and services*Training institutes*

The local high school has an aquaculture program with its own building. They are raising brook trout, a fresh water fish, and using the wastewater to grow hydroponic vegetables. In addition they have built a greenhouse that includes an algae culturing center used in shellfish projects and they maintain an experimental mussel lease site in Cobscook Bay.<sup>41</sup> There are also technical programs offered at the Washington County Technical College.

A boat building class is held in Eastport. Other programs include motor repair and are offered at other campuses.

## Perceptions of the Fishing Community<sup>42</sup>

Boundaries

According to a key respondent, Lubec has the most overall contact with Calais (25 miles north), followed by Machias (25 miles south). Calais offers a much larger selection of clothes than does Machias. The key respondent generally goes to Calais to shop for his family. There is also a Wal-Mart in Calais perhaps owing to the fact that Calais sits on the border between the United States and Canada. There is also a specialty store that sell health food, one that our key respondent must go to in order to buy his tea and broccoli sprouts.

Lubec has two good size food stores though. There are a few gas stations with accompanying convenience stores as well. Lubec also offers at least three full service restaurants, one of which is fairly 'upscale' despite being called Uncle Kippy's. There is one small convenience store that serves mostly the employees of R.J. Peacock. The store has a card table in back where people sit down and order eggs and toast, which is prepared in the kitchen. The kitchen is part of the store and suggests that the storefront is also the owner's home.

Community Contact List

Sell fish	Lubec
Offload fish	Lubec
Buy gear	Eastport, Lubec, mail order
Buy bait	Lubec (cannery), Canada
Buy ice	Lubec
Buy oil/fuel	Lubec
Haul-Out	Self
Bookkeeping	Self
Bank	Lubec
Shopping-food	Lubec
Shopping-clothes	Calais
Church	Lubec
School (K-12)	Lubec
Visit relatives	Lubec

<sup>41</sup> <http://www.maineaquaculture.org/new/lubec.htm>

<sup>42</sup> Based on key informant interviews

Visit friends	Lubec
Go for vacation	Lubec (local beach)
Recreation	Lubec (hunting/sportfishing)
Socialize	Lubec (VFW/restaurant)

### **Economic Change**

Reactions were quite different regarding perceived changes over time, depending on the occupation of the respondent. The plant manager at the sardine cannery was very upbeat about the economy. "The best in fifteen years," he said.

A key respondent was indifferent. His viewpoints were tempered by the industry he was in at the time. Ten years ago, he was still diving for scallops. He rated that period as "average" stating that the fisheries economy had "...never been great, supplies were high and price were low. Five years ago, he also rated as "average" suggesting that fluctuations always even the industry out, one up and another down. Today, the key respondent also rated as "average." The future was the worst rated among the time spans. Noting that the "volume of catches will decline and markets will be lost," he anticipated a rating five years from now as "poor." He continued to say "*fishing will be poor, but something else will make it up.*" He displayed a surprising optimistic outlook considering the rather bleak nature of the statement.

The key respondent said 'life is better now' if one is content about "living low." "If one owes a lot of bills, you are shit up a creek..." Life is worse than five years ago "because taxes are higher, prices are up and wages are not in sync with the rest of the country. Our prices go up with theirs, but not our pay." There is not much difference between the 'better' and 'worse' perceptions. Both rest on a rather negative perception that life in Lubec is good as long as there are no 'ifs.'

### **Effects of recent management**

Herring: Currently the state government of Maine is/has deciding/ed to include weirs (fixed-gear) with mobile gear (purse seines and stop-seines) for management of herring in accordance with other states. Peter Boyce, Plant Manager for Lubec Canning, felt this was unfair, not based on science and would spell the end of weirs. The legislation for herring management concentrates on closed seasons to allow herring to spawn. Herring spawn offshore, away from all weirs. Further, because weirs are fixed constructs, rather than mobile gear, removing them from the water, or even dismantling their nets is a far greater burden (physical and economical) than shipping mobile nets. "It would be fair if they made the purse seiners take off all their gear, and winches and cable. That would take them about two weeks to take it off and put it back on, just like the weir fishermen." Mr. Boyce went on to comment that only Washington County would be affected by the legislation because all the remaining herring weirs are there. He felt that the state government was willing to sacrifice Washington County in political dealing with other states. "They (state government) think 'just send them (Washington County) their checks (welfare) and they'll be happy.'"

Scallops: A major point of contention in the fishery has been the practice of opening scallop season in the Downeast area several weeks before it opens in the rest of the state. This has led to great numbers of boats initially fishing the Downeast region until the rest of the state opens. At the opening, all but the local boats travel to new areas to fish. The local Downeast fishermen are left fishing the remainder of the season for the scallops not taken by the full force of the state fleet during the first weeks. Downeast fishermen feel this practice is not fair because they lack the ability/will to live aboard their boats and fish other parts of the coast. Downeast fishermen have repeatedly called for a synchronized opening to the scallop fishery throughout the state of Maine. This was to be the case last season until heavy lobbying from southern/western scallopers caused the DMR to change the dates.

Urchins: Major points of contention in the urchin fishery are the battle between wild harvesters

and those interested in sea urchin aquaculture, and between draggers and divers. Currently there is a moratorium on both new urchin aquaculture lease sites and diving permits. At least one individual who drags for urchins has attempted to swap his dragging license for a diving permit, contending it is less damaging to environment, but has been refused because of the moratorium. This person has attempted to work through local officials and has even called his Washington representative. He said that "they don't give a damn...a moratorium is a moratorium." This has left him quite critical of a system that claims to promote environmentally safe fishing but does not work with the fishermen.

## 6.0 Summary

### 6.1. Defining the Community

The traditional definition of a “fishing community” as a parochial place is rarely reality now. Even the most isolated settlements in Downeast Maine have some capital networks that lead in and out of the community for regional, national and international exchange. Indeed, the stereotype of an independent, self-sufficient fishing community may never truly have been accurate. Some portion of the harvest has always moved outside the community in exchange for products and services otherwise unavailable. It is true that at one time fishing-dependent communities more uniformly recognized the importance of the industry to their community and valued each sector. Furthermore, when fishing was viewed as a prosperous industry, more children in fishing families naturally gravitated to some aspect of the industry. Today, parents are encouraging children to finish high school and attend college so that varied career options are open to them. In rural areas such as Downeast Maine the consequence has been that children out-migrate.

Economies of communities have purposely been diversified so that no single industry dominates. Facing the loss of young educated people, Maine is actively engaged in economic development of alternative industries. Nevertheless, the fishing industry continues to contribute to the viability of coastal communities. Contributions are not always easily traced to the fishing industry since they may be indirect. For example, it is obvious that gear suppliers, vessel services (e.g., repair), fuel suppliers, grocers and ice producers generate income from the harvesting and processing sectors. But what value does a community place on the existence of competing oil companies? In some places, a community has more reasonable-priced heating oil because the existence of the fishing vessels' fuel needs is sufficient to support more than one oil supplier, so the competition keeps prices from sky-rocketing.

One of the ways that reductions in fishing days has affected communities is that there has been a net loss of jobs in the industry. The reductions also resulted in a lower demand for services and supplies. Consequently, the numbers of suppliers at the community level have been reduced and there is less competition acting as a price check. In some cases, the loss of locally available supplies has driven fishing industry participants to broaden their networks to seek supplies regionally, nationally and even internationally.

Some of the fishing industry services have concentrated in urban settings, enabling the suppliers improved access to labor supply and to a more diversified network of total capital flows. For example, except for minimal quantities for local restaurants, the bulk of fresh fish processing moved to Boston. These processors not only have access to a diverse labor pool, but they can obtain product from vessels all along the coast, and importantly, they can ship their product nationally and internationally out of Boston's airport.

While the urban based fisheries services may not be sufficiently grand to make that urban area dependent on fishing, the fishing industry may be dependent upon the urban area and the fisheries services available there.

## 6.2. Themes

Different levels of fisheries dependency for each of the eleven sub-regions we considered in this research were suggested by indices of occupational dependency, infrastructure differentiation, levels of gentrification, and descriptive profiles. What was particularly intriguing, however, was that not every sub-region with similar statistics evaluated their fisheries in the same way. In some cases, the historical association with fishing is appreciated and enlarged upon, incorporated even while change is embraced. In others, it is abandoned for newer, cleaner pursuits. There were common themes, however, that arose throughout the region.

### *SCIENCE & MANAGEMENT*

#### Communication issues and assessments

Fishermen were virtually unanimous in their agreement that communication with federal managers was less than ideal. Stock assessments were also almost universally considered wrong (i.e., fishermen and scientists “strongly disagree” about stock assessments). Fishermen signaled very clearly that they do not understand the way scientists assess stocks. The lack of interaction among scientists, managers and fishermen has contributed to misunderstandings as well as suspicion about managers’ and scientists’ motives. The research team commends recent efforts to promote collaborative research and suggests that all avenues for increasing interaction and communication among scientists, managers and fishermen be explored.

Despite the disagreements with scientists about the assessments, fishermen almost universally agreed that some regulation is necessary and that some of the management measures have been effective in helping the stocks recover. Conservation is now considered rational and many of the fishermen’s complaints about management revolved around the inability of the existing system to react quickly (real time) to observed changes or situations. Many are hopeful that collaborative research will lead to improvements in management.

#### Sustainability

Fishermen frequently point out that traditionally fishing was pursued cyclically. Particularly among the inshore and smaller vessels, flexibility was key to making a year’s pay. The gear used or species targeted by a given vessel often changed seasonally or annually. Prices, availability of target species and skills of the individual fishermen would influence the choices made. Furthermore, some fishermen did not fish year round, but had other trades they pursued at different times of the year.

Today, the reliance on single species management with license limitations is criticized as severely hampering the resilience of the fleet and fishermen’s communities. Those communities with small but active fleets indicate that fishing contributes to the overall productivity and total capital flow of the community, even if it is not necessarily a dominant feature in the community. Most fishermen do agree that regulation is necessary and that there must be some controls on access.

#### Environmental factors

Some fishermen are concerned that there are anthropogenic sources of environmental impacts that are ignored because they are complicated or difficult to assess. Instead, fishermen and overfishing are blamed for every problem. Chlorine and the plethora of other cleaning products, nutrient run-off, sewage outfall pipes, antibiotics, etc. are all possible contributors to the downturns in stocks. Like overfishing, these are believed to be part of the problem and therefore, should be considered when solutions are sought.

### Equity

Fairness is a constant theme in fishermen's discussions of fisheries management. A perception of inequity in regulations has been cited as contributing to a breakdown in a sense of community among fishermen even within ports. Fishermen within a port may use different gear and target a variety of species, but with a few exceptions, most tolerate other's choices and criticize management for unfairly benefiting one type of fishing over another, or one sub-region over another.

## COMMUNITY

### Working Waterfront

As our nation's working capital growth increasingly is bound to the service sector and white-collar pursuits, a working waterfront devoted to fishing is appealing as an exotic, little understood enterprise. Like any primary producer of food, though, the fishing industry is also messy and smelly. A community with a small population that is highly dependent on small-scale fishing may successfully combine housing and working waterfronts, especially in those places where fishing is valued as a "way of life" that has been passed on family to family. In larger communities, especially where the associated vessels are also large, the working waterfront is fascinating, but like any industrial zone, is not meant to be residential.

When the harvesting sector was bringing in larger quantities of fish, the shoreside services expanded. Waterfront property owners generated income from the harvesters that used their services based on the quantity landed. They also made a profit from the supplies they offered. As fishing days were restricted, the income of the waterfront property owners fell. At the same time, the tourist industry expanded. Economic growth that generated an increase in disposable income has led to the inflation of coastal property values.

Except where the waterfront property is protected by zoning laws or special legislation (Massachusetts' Chapter 91 and Designated Port Areas), the demand for housing, restaurants and other non-water-dependent use has increased. Because much of the demand is for seasonal property, where the community has allowed unfettered sales of waterfront property, they have sometimes effectively lost their off-season community "center." Seasonal property is often shuttered in winter and businesses once used as gathering places for year round residents are transformed to appeal to tourists. In addition, areas available to the harvesting and processing sectors have become less convenient, crowded and more expensive.

As demand increases from "wash shores," people "from away," people with sufficient funds to buy second homes, or those who can afford seasonal business ownership competing for limited waterfront property, the prices escalate. Some of the waterfront property owners find their taxes have leaped or the costs of repairing old wharves has become prohibitive. Where the waterfront property is not confined by zoning or other restrictions to water-dependent use, the fishing industry tends to be squeezed into narrow confines with higher costs.

Nevertheless, there are some communities that have decided that support of their fishing industry is beneficial, both because it provides year round productivity and because it can be used to attract additional commerce in season.

### Ethnicity and/or religion

Where ethnic or religious associations are identified with the fishing industry, there seems to be a greater inclination to replicate the social and human capital invested in the industry.

### Children

Most of the key respondents who were harvesters indicated a high level of satisfaction with their job. Nevertheless, most questioned the wisdom of selecting fishing as an occupation for the future. Few recommend the industry to their children, particularly as harvesters since



the both the conditions of the stocks and the management regime are unpredictable. Thus the social capital is not being replicated. Children are not going into fishing due to anxiety, attraction other pursuits, and because there are fewer opportunities (fewer crew sites).

### Education

Key respondents in at least two ports noted that fisheries educational programs had been an important source of reliable entrants into the industry. In one case, it was a high school vocational program and the other case it was a college program. When these ended, it immediately became more difficult to find and hire reliable and knowledgeable crewmembers.

Education is acknowledged as playing a more important role than was recognized in the past. Gloucester Fishing Family Assistance Center is helping fishermen to obtain their captain's license. All the members of the first class succeeded in obtaining their 100-ton license from the Coast Guard after the course. The license is attractive both because the Coast Guard and other fisheries agents treat the holder with more respect and because it allows the holder to compete for collaborative research funds. (On the research projects, the boat is paid and thus is considered "for hire" which means the captain must be licensed.)

### Ties that bind

Fishing has an attraction that sometimes lasts through college or retraining, causing individuals to return to fishing even after trying other occupations. A majority of the key respondents argued that fishing is "very important" to their community, though many added that those outside the industry might not necessarily agree.

Nevertheless, some of the camaraderie that used to exist among fishermen has disappeared. Fishermen comment that they now have little opportunity to meet and relax with fishermen from other communities or fishermen who use other gear, etc. in a social setting. Conflicts that may have been worked out in the past over a beer cannot be easily resolved. There are, in general, fewer opportunities for social interaction among the fishermen and their families both within communities and between communities.

### Women

Traditionally, spouses of fishermen acted as "shore captains," often providing such services as keeping the books, contacting marine supply houses for parts, delivering food, etc. In addition, several of the ports have well-organized groups of fishermen's wives who attend, or send representatives, to fisheries management meetings to provide input to the managers and return with information for their community. Some women also worked as sternmen or crewmembers (especially on day boats). Spouses of Maine lobstermen developed a "value-added" industry of crab picking, but HAACP regulations have all but eliminated this cottage industry.

Changes in the economy of both fishing and the society at large, perhaps also changes in values, have affected this pattern. More women now work outside their homes in jobs unrelated to fishing. Key respondents noted, however, that the primary motivation for many is to work in order to obtain health care benefits.

## *BEYOND THE OBVIOUS*

### Importance of the networks-subsidiary occupations

While the frozen fish sector of the fishing industry, with its imported blocks of fish (i.e., "borrowed" biophysical capital), does not directly support the harvesting sector of the New England NRR, some of the sector's inputs do derive from local suppliers. Packaging, dry ice, equipment maintenance and labor are just some of the inputs often purchased locally. Trucking and some supplies associated with batter and breeding may be purchased

regionally or nationally. As with some of the communities that have been found by this research to be “essential providers,” it may be that the frozen fish sector of the industry plays an unrecognized role in assuring the viability of secondary industries that in turn contribute to the success of the fresh fish sectors.

In addition, some of the larger frozen fish processing plants are unionized, thus offering higher wages and a more stable work force than similar plants. In contrast, some of the non-unionized firms rely on a handful of salaried employees and contract labor for working the line. The unionized companies thus have a greater impact on the local economies through workers’ expenditures and taxes than via raw product purchase.

### *CAUTION*

#### Fail Safe Fisheries

Lobstering has been the fishery that groundfishermen have turned to when restrictions on days, on gear (gillnets), and catch quotas have made it difficult to continue “paying the bills.”

### 6.3. Sub-region Summaries

#### Connecticut

Connecticut's fishing industry is smaller in number and boats are more widely dispersed among communities characterized by a devotion to the tourist industry than is true for most of the New England NRR. Neither the sub-region, nor the ports profiled appear to be fisheries dependent since other industries predominate. Nevertheless, the industry makes an important contribution to several coastal communities.

Lobsters, some groundfish and whiting are currently the primary target species for Connecticut's fleet. One of the most intractable problems for the fishing industry in Connecticut seems to be waterfront access. Gentrification of the coast has driven up prices and made fishing industry-related businesses unwelcome in some areas. For even the current level of modest fishing effort to continue, protection of existing infrastructure should be a priority for coastal communities.

Despite a crisis in the lobster fishery associated with catastrophic event in Long Island Sound (a lobster "die-off"), there are some indications that the numbers of fishermen are actually increasing. In 2000, there were 497 fishermen listed on the license database, an increase of 100 fishermen since 1999.

#### Rhode Island

Its location at the southern reach of many Gulf of Maine fish species and the northern reach of mid-Atlantic species has created a fishing industry that is flexible and wide-ranging. While Rhode Island has become gentrified, relegating the fishing industry to relatively few ports, the port of Point Judith remains strikingly successful. In 1999, Pt. Judith landed 72.5 million pounds worth \$51.2 million dollars, second only to New Bedford among New England ports.<sup>1</sup> It also ranked 8<sup>th</sup> in value of landings among major U.S. ports in 1999 (9<sup>th</sup> in 1998). Rhode Island itself was ranked third among the New England states in both landings and value in 1998 and 1999.

Of the eleven sub-regions this research has identified, Point Judith ranks fifth on the fishing infrastructure differentiation scale, in keeping with the landings and their value. What is somewhat misleading, however, in considering Rhode Island as a sub-region is the occupational dependency ratio. Rhode Island ranks 7<sup>th</sup> out of the eleven sub-regions on this index. The sheer size and value of the landings in Point Judith would seem to argue for a higher ranking, but since so little of Rhode Island outside of Point Judith has significant fishing employment, the ranking is low. This is one case where the sub-regional perspective, if considered without reference to the details pertaining to individual ports, could mislead investigators.

The tourism emphasis in Rhode Island affects fishermen most seriously through the competition for land use (water access). Competition with recreational fishermen was also noted. And competition for fishing grounds among fixed gear fishermen also exists (lobster pots kept out year round to hold bottom). The smaller ports of Rhode Island, limited in numbers of boats and infrastructure, rely on Point Judith for supplies and services, Newport relies on New Bedford for whatever is not available in town.

Several niche fisheries are found in Rhode Island, including live-fish fisheries for sea ravens and sea robins. Shellfishing is also an important part of their annual fishing cycle for some and is particularly noteworthy in Tiverton.

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<sup>1</sup> *Fisheries of the United States*, 1999. U.S. Dept of Commerce, NOAA, NMFS. Prepared by Fisheries Statistics Division. Available at <http://www.st.nmfs.gov/st1/fus/fus99/index.html>

### New Bedford/South Shore

Ranked second in the nation for the value of its commercial fishery landings in 1999, New Bedford/Fairhaven continues to play a critical role in the fisheries of the subregion. The city of New Bedford has experienced periods of boom and bust in a variety of industries including whaling, textiles and fishing. Though landings fell sharply in 1994 due to severe restrictions on scallop fishing, the fishing industry showed an unusual willingness to work together and contributed funds to a research effort that ultimately made it possible to revamp management regulations for the scallop sector. The success of management and fishing industry cooperation is reflected in the \$129.9 million worth of fishery landings in New Bedford in 1999.

The New Bedford/Fairhaven fleet has strong ethnic affiliations with the Portuguese dominating the dragger sector and Norwegian and Yankees most common among scallop-boat owners. The Portuguese in New Bedford have developed extensive neighborhoods with shops and services that cater to Portuguese-speaking customers. Consequently, English language acquisition was not a high priority among immigrants. This hinders some efforts to move fishermen out of the industry.

Until recently, New Bedford had a relatively depressed economy. The city's median household income and per capita income were both well below the state average. Fishing however provides a relatively good income, especially when compared to alternative jobs requiring similar skills and levels of education. So, while the employment indices we used ranked New Bedford/South Shore fifth out of the eleven sub-regions for fishing dependency, the alternative jobs available that theoretically make the city less dependent on fishing than three Maine sub-regions and Massachusetts' Cape and Islands may not be strictly equivalent in income and prestige.

New Bedford does tie Portland (Maine) for highest on the fishing infrastructure differentiation scale. Given the quantities of landings, vessels, etc. this is certainly to be expected. It also ranks 10<sup>th</sup> on the gentrification scale. This is consistent with it being a city with diverse tourist industry-related attractions and services.

In addition to the high level of landings and their value, New Bedford's fishing industry has a highly developed processing sector. There is diversity in this sector of large international firms, medium and small firms, including both companies that handle only frozen imported product and firms that buy local fresh product.

### Cape Cod and the Islands

The Cape and Islands is third, following Downeast Maine (1) and Upper Mid-coast Maine (2), on the fishing dependency index that is based on the employment indices used in this project. As in Maine, fishing is a natural occupation for those who live in such proximity to fertile fishing grounds. Furthermore, also similar to Maine, distances to major population centers with diverse alternative employment are significant. Consequently, only the tourist industry rivals fishing in importance. Because tourism is limited to the mild or warm seasons, fishing is often regarded as an appropriate year-round enterprise.

The fishing infrastructure differentiation scale developed for this project looks at individual ports, but several of the Cape Cod & Islands ports are listed among the top ports. For example, Chatham has a ranking of four, Vineyard Haven is ranked as nine, and Sandwich is 14 out of the 36 ranked. On the gentrification scale, Vineyard Haven is ranked 5<sup>th</sup> and Provincetown and Chatham are ranked 13<sup>th</sup> and 14<sup>th</sup> respectively. Despite gentrification, these ports are actively engaged in the fishing industry.

Provincetown-Chatham are lumped together by *Fisheries of the United States, 1999*.<sup>2</sup> In comparison to other major U.S. ports 1998-99, Provincetown-Chatham numbered among

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<sup>2</sup> *Fisheries of the United States, 1999*. U.S. Dept of Commerce, NOAA, NMFS. Prepared by Fisheries Statistics Division. Available at <http://www.st.nmfs.gov/st1/fus/fus99/index.html>

the top 50 ports with landings of 17.8 million pounds in 1998 and 20 million pounds in 1999. The value of these landings was \$10.2 million in 1998 and \$12.9 million in 1999. While the price per pound was approximately the same as found in Pt. Judith, a port to which Chatham is often compared, the quantities landed were much smaller.

Chatham is the most active port of the Cape Cod & Islands sub-region. Though small, the town has an important longline/hook fleet in addition to gillnetters and lobster fishermen, a thriving shellfish industry and a well-developed support industry. Innovation and flexibility are hallmarks of Chatham fishermen. The development of niche fisheries (e.g., dogfish and now, selling to the live fish market) is something that respondents reported with pride.

Chatham also has a large retired population (almost a third of the whole). As noted elsewhere, increased cost of property and lack of year round rental property is a major concern.

Provincetown with its predominantly Portuguese and Portuguese-American, day-boat dragger fleet has been severely constricted in the past decade or two. A proud history of family boats has not been sufficient to retain more than a modest presence in the town. Nevertheless, the attraction of a working waterfront to the artists and tourists who flock to Provincetown, as well as a few innovators in the industry keep the small numbers of fishermen going.

Vineyard Haven on Martha's Vineyard also boasts historical attachment to the fishing industry, but like Provincetown has diminished in size and importance. Nevertheless, Vineyard Haven does retain adequate fishing infrastructure and has a demanding market in the tourist season.

### Boston Area

The city of Boston presents an interesting dilemma for assessing fishing dependency. While once there were thriving harvesting and processing sectors, very few boats tie-up in Boston now. A handful of draggers and a small lobster boat fishery are all that is left of the harvesting sector. Furthermore, Boston is not numbered among the top fifty ports of the U.S. for landings; it is ranked low (10 out of 11) in terms of employment dependency and low for fishing infrastructure differentiation (29 out of 36). It does not, however, rank high in terms of gentrification (26 out of 36).

Boston is a complex urban environment, the metropolitan center of a cluster of neighboring cities and towns, the state capitol with a robust economy featuring a multiplicity of industries ranging from biotech to farmers' markets. The medical industry, higher education facilities, and tourism are just a few of the businesses that engender the flow of all forms of capital in and out of the area. Therefore, fishing-related business is dwarfed by some of the others. Even so, we maintain that it is significant not only for its role as a component of Boston's economy, but also for its importance in serving dispersed, smaller communities that are more obviously dependent upon fishing and fishing-related businesses. Boston remains an **essential provider** of fishing-related support services.

The importance of Boston to the New England region is very significant, since it is a nexus for the international transshipment of fishery products throughout New England. The only other major point of transshipment is from New York through Fulton's Market. However, Boston is more central to the overall flow of produce, and boasts a large number of seafood brokers as well as larger seafood companies with fleets of trucks and major facilities.

In addition to its role in transport, Boston also has an active processing sector, brokers and wholesale marketers.

As far as the other ports in the sub-region are concerned, small but significant activity centers in Plymouth and Scituate. Plymouth has primarily lobstermen.

### Gloucester

Gloucester and the North Shore Sub-region is ranked, according to the employment indices used herein, eighth (out of eleven) for fisheries dependency. The reason for its low ranking compared to the other sub-regions is the availability of alternative employment in the area. This ranking is countered by the other indices we have been using in the study and confirms our intuition that employment indices tell only a portion of the story. Significantly, Gloucester itself ranks third (following New Bedford and Portland) in the index of fishing infrastructure differentiation. Furthermore, it is 21<sup>st</sup> (out of 36) on the gentrification scale. The profile of Gloucester describes a community that is committed to its fishing industry, whose cultural, human and economic capital are all linked to the industry.

Pure numbers of fish landed and the value of those landings also indicate the significance of the fishing industry to Gloucester. *Fisheries of the U.S., 1999*<sup>3</sup> reports that Gloucester landed 107.1 million pounds of fish in 1998 (11<sup>th</sup> of the 50 major U.S. ports) and 49.7 million pounds in 1999. Though the lower weight slid the port down to a ranking of 22, the value of the landings per pound doubled in 1999. In 1998, the landings were worth \$28.4 million whereas in 1999, the landings were worth \$25.9 million.

The city of Gloucester is committed to the fishing industry, regarding it almost as a sacred heritage since its founding in 1623. Politicians and other community members also regard the fishing industry as important to their community. A Sicilian and Sicilian-American population is particularly prominent in the dragger finfish fleet.

Other ports in the Gloucester sub-region are important components of the fishing network. Rockport's fleet moored in Pigeon Cove has an unusually good relationship with both the townspeople and recreational boaters with whom they formed a non-profit corporation to retain control and access to the waterfront. Marblehead's very small fleet has a ready market for its product in the local restaurants and markets. The small ports surrounding Gloucester rely on the city's fishing infrastructure to enable their fishing effort to continue. Like Boston and New Bedford, Gloucester should be classified as an essential provider to New England's fishing industry.

### New Hampshire

New Hampshire ranks low on the scale of fishing-dependency (9<sup>th</sup> out of the 11 sub-regions). Nevertheless, the sub-region has a small, but active fleet. The short length of New Hampshire's coastline condenses the marine-dependent uses into a small area, relieved by access to river waterfront areas. Historically, New Hampshire's harvesting sector benefited from proximity to rich fishing grounds, adapting their fishing techniques and patterns accordingly. A recent closure of nearby grounds for management therefore has made fishing less accessible to the moderate-sized boats typical of the area. Fishing more distant grounds demands larger (i.e., safer) vessels and more intense periods of fishing (longer trips) than what the New Hampshire fishermen were accustomed to undertake. Furthermore, closure of familiar grounds makes success in fishing more difficult.

Although none of New Hampshire's ports rank in the top 50 of the major ports of the U.S., Portsmouth's fishing infrastructure is sufficiently developed to rank it 6<sup>th</sup> out of 36 New England ports whose infrastructure was analyzed for this project. The key element of the infrastructure is a state-owned pier that protects waterfront access and provides the focal point for fishing support services. Such protection of the land-based services is critical since Portsmouth ties Kennebunkport, ME and Plymouth, MA for the most gentrified port in the New England NRR. As long as their necessary service industries are protected, it may be said that the fishing fleet of Portsmouth benefits from the town's gentrification. The product the fleet lands is very fresh and often finds a market in the local restaurants or stores.

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<sup>3</sup> *Fisheries of the United States*, 1999. U.S. Dept of Commerce, NOAA, NMFS. Prepared by Fisheries Statistics Division. Available at <http://www.st.nmfs.gov/st1/fus/fus99/index.html>

Gillnets and lobster pots are the gear types most often employed by New Hampshire's fleet. In addition to groundfish and lobsters, the fleet also targets shrimp and/or tuna in the appropriate seasons. Before being hemmed in by regulations, more of the fleet counted on being flexible, switching target species and gear as opportunities presented themselves. Now, one company is starting to get more involved in the herring industry.

### Southern Maine

Southern Maine ranks 6<sup>th</sup> on the occupational fisheries dependency scale developed by this project. York ranks 21<sup>st</sup> on the infrastructure differentiation and Kennebunkport ranks 15<sup>th</sup>. On the other hand, Kennebunkport is first on the gentrification scale, tying with Plymouth, MA and Portsmouth, NH. York is ranked 17<sup>th</sup>.

Some respondents noted that some of the ports of Southern Maine could more appropriately be considered as part of the New Hampshire sub-region since their fishermen belong to the Portsmouth Cooperative where they land their fish. They also fish on the same grounds, using similar gear or techniques as the New Hampshire fishermen. While acknowledging the link of the fishermen who are in the Piscataqua River watershed, we retain the separate sub-region to accommodate the structure imposed by our colleagues' MARFIN-funded project in economics (IMPLAN).

Southern Maine is dominated by the lobster industry, but as in Portsmouth and Hampton, fishermen often switch to blue fin tuna in season.

### Lower Midcoast

Its geographic location demands that Portland be analyzed as part of Lower Midcoast Maine. Portland's characteristics however set it sharply apart from smaller fishing ports in the sub-region. Midcoast Maine is described by their Chamber of Commerce as primarily "small with annual town meetings, a sense of community, 'Yankee independence,' and rural lifestyles." In contrast, the inhabitants of Portland live in an urban setting, a city (and City Council) with an increasingly diverse population employed in a variety of enterprises. Portland is not the only anomaly in the sub-region. Some of the largest employers (e.g., Bath Iron Works) in the state are located in Lower Midcoast Maine, with jobs in industrial, military and service employment. The availability of alternatives to employment in fishing in the sub-region is sufficient to rank Lower Midcoast as 4<sup>th</sup> out of the eleven sub-regions for fishing employment dependency.

Portland is a primary fishing port and essential provider to the regional industry. Portland is tied for first place with New Bedford for fishing infrastructure differentiation and 8<sup>th</sup> out of 36 for gentrification. Portland ranked 21<sup>st</sup> among major U.S. ports in quantities of fishery products landed in 1999 with 55.6 million pounds but was 11<sup>th</sup> in value at \$42.4 million.<sup>4</sup> The value per pound of landings (about 76 cents) was second only to New Bedford (\$1.51) among New England ports (though followed closely by Point Judith at 71 cents).

Portland is perhaps most noteworthy for its role in bringing the first display auction of fish to New England. This caused a paradigm shift in the marketing of sea products with its emphasis on honest weights, purchases of specific lots of fish, quality handling associated with premium prices and fast payment. The Portland area also has several important fish processing plants.

Portland has also signaled its support of the fishing industry by building and maintaining a city-owned pier, creating zoning protections of the working waterfront and by hiring a fisheries program manager.

Gentrification is an issue of importance in the Lower Midcoast for many of the same reasons noted elsewhere, that is, the demand that waterfront property be used for tourist attractions,

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<sup>4</sup> Ibid.

attractive housing, or other non-water-dependent use drives up prices and concomitantly, taxes, diminishing available infrastructure for fishing- related activities.

The smaller ports in Lower Midcoast rely on fishing to sustain their communities year round. Though many have large summer populations, year round employment opportunities outside of fishing are often limited. While groundfishing was once an important part of an annual round of fishing activities marked by flexibility and diversification, restrictions have caused more fishermen to specialize in lobstering and shrimping (in season). Clamming, urchining and hagfish are of varying degrees of importance in the sub-region. Herring and herring processing are also significant.

#### Upper Midcoast

While there has been some effort to diversify the economy here, Upper Midcoast Maine is still highly reliant on marine-related enterprise. In fact, Upper Midcoast was ranked second out of the eleven sub-regions for fishery dependency based on occupational indices. The majority of coastal communities in this sub-region have significant fishing activity or a significant number of people who fish.

Stonington/Deer Isle (Hancock County) and Rockland (Knox County) were ranked 7<sup>th</sup> and 8<sup>th</sup> respectively on the fishing infrastructure differentiation scale. Furthermore, Rockland ranked 28<sup>th</sup> among major U.S. fishing ports in 1999 for quantities landed at 35.8 million pounds and 21<sup>st</sup> for quantities in 1998 with 39 million pounds. These landings did not, however, have sufficient value to permit Rockland to appear among the top 50 U.S. ports in landings' value in either 1998 or 1999.

Gentrification in this sub-region is both high and low. Rockland, for example, was 5<sup>th</sup> (along with Newport, RI and Vineyard Haven, MA) on the gentrification scale while Stonington/Deer Isle was 28<sup>th</sup> out of 36 ports.

With the downturn in groundfish coupled with severe restrictions on gillnetting, more Stonington/Deer Isle fishermen have turned to fishing almost exclusively for lobsters and crabs. In addition there is limited scalloping, urchining, shrimping, clamming and one herring purse seiner. Fishing as a "way of life" is highly valued here and fishermen take pride in their maintenance of a conservation ethic.

Both tourism and service-based industries have increased in Rockland. Once a significant groundfish port, Rockland's fishing industry has turned to other species. Lobsters and herring now predominate with landing, marketing and shipping taking precedence over harvesting and processing. Rockland plays a key role in the distribution chain of both herring for bait and the movement of product to larger markets (Boston and beyond). Rockland is another example of a community that is probably too diversified to be able to classify it as fisheries-dependent, yet it provides sufficient services to nearby fisheries-dependent communities to be classified as an "essential provider."

#### Downeast

Downeast Maine has a long history of devotion to the fishing industry and with it, periods of prosperity. Not all this sub-region's coastal communities are dependent on fishing, but a significant number rely on fishing as one contribution to a sustainable livelihood.

When sardines were popular, weirs and stop seines were used by fishermen to catch the herring and over 40 canning factories employed residents of Cobscook Bay. As the sardine industry declined, fishermen turned to urchin harvesting, clam digging, lobstering, finfish fishing and salmon aquaculture. Niche fisheries for sea cucumbers, elvers and periwinkles provide others with flexibility in their annual cycle. Blueberry harvesting and forestry products supplement incomes from marine enterprise. Boat building has also long been a tradition in this region with specific boat designs named for their original builder, e.g., an "Alvin Beal."



Downeast also faces serious constraints on economic prosperity, however. The extreme tides and currents create turbulent water in Passamoquoddy and Cobscook Bays limiting the types of fishing available in nearshore waters. The Hague Line limits access to rich fishing grounds offshore. The proximity to Canada increases competition for markets, supplies for processors, etc. At the same time, Washington County is sufficiently distant from U.S. commercial and urban centers to be at a disadvantage for economic development. In fact, Washington County is the poorest county in New England.

Nevertheless, there are economically successful fishermen, some with several boats that also package, freeze, market and truck their catch and employ a network of family members. Where lobstering is productive, young people are still going in to the fishery. Downeast is also the only subregion in New England to have a substantial aquaculture presence.

Though parents are encouraging their children to pursue education, they fear that this will lead to the children's' out-migration since there are few attractive jobs available in the subregion.

Downeast fishermen also have some concerns related to management that derive from their wanting to protect their more traditional "way of life" that is based on what they view as smaller-scale fishing, flexibility, lower environmental impact. For instance, while local fishermen may pick at a scallop bed all season, landing enough for their family's needs, large vessels may sweep in and devour the bed in a matter of days. Because of the days-at-sea regulations, large vessels that in the past consistently worked offshore grounds attempt to fish closer to shore to minimize steaming time. In some cases, the regulations seem to effectively encourage this. The date that scallop fishing opens off Downeast Maine is earlier than the rest of Maine, so for two weeks or so, all the scallopers in the state can head Downeast.

## 7. 0 Conclusions and Recommendations

We view the research that this report is based upon as a “work in progress.” Like the species they depend upon, fishing industry participants and community stakeholders are constantly adapting to change in their lives and livelihood. Static portraits drawn by individual community studies at single points in time cannot convey the dynamic dimensions characteristic of this industry or its people.

We feel very strongly that the collection of socio-economic data should be institutionalized. There is currently no database of consistently gathered information about fishing and fishing-dependent communities in the region. Certainly, there is nothing to correspond to the 30-year biological data that National Marine Fisheries Service has been collecting via their assessment cruises and landings data. Nevertheless, fisheries managers are forced to select among regulatory alternatives, knowing that they are supposed to weigh impacts on communities, but having little or no data upon which to judge potential effects. Furthermore, because of the complex nature of the industry and its complicated network of total capital flow, many coastal communities have limited information about the direction or consequences of change that affect the industry or their own community.

This project made an effort to reflect the goals and concerns of participants in the fishing industry and community members in the development of these profiles, however, we recognize that the generation of more complete profiles would require the active and on-going participation of a broad group of stakeholders. Fishing industry participants, managers, scientists and members of fishing communities could contribute information through participatory research that is not readily accessible to a researcher from outside the community being studied.

A community-based program for gathering and assessing data would be an excellent first step. This study, however, also reminded us that details collected at the community level apply well beyond the arbitrary political and geographic boundaries of any single community. Community studies that are limited in time and space provide some understanding of the impacts of regulatory change, for example, but are unlikely to address either the cumulative impact of multiple regulations, or the impacts of regulations in a wider geographic context. The capital flows must be charted over time at local, sub-regional, regional, national and international levels to trace effects and predict change.

The significance of the social structures and institutions described in the data collection effort may be lost if the data and the analyses are confined to single communities. For example, we have noted that Boston’s Logan airport is the predominant air freight center in the region. This could have critical regulatory import affecting both individual state’s rules and international agreements. By way of illustration, a lobsterman recently noted that Downeast Maine lobstermen are fighting proposed gauge increases and may decide to ignore interstate rules set by the Atlantic States Marine Fisheries Commission. However, he explained, if the Maine lobstermen do land lobsters that are smaller than those allowed by Massachusetts, they will not be able to air freight their smaller lobsters via Logan. The same restrictions would also apply to Canadian lobsters from the Maritime Provinces. While in theory, Canadians could ship from Halifax and Maine lobstermen out of Portland; neither airport has a significant air freight capacity and opportunities for airfreight distribution would therefore be limited.

Other cross-community impacts stem from both biological trends and regulations, for instance, the migration of vessels from one port to another may be associated with the movement of their target species, better marketing strategies, and/or simply access to fishing grounds unimpeded by regulatory closed areas. The effects of vessel migration are likely to be different for the homeport and the recipient port.

We encourage National Marine Fisheries Service to work with communities and regional groups to develop a database for social science that corresponds to their long-term biological database. We applaud recent efforts of the New England Fishery Management Council staff to learn from fishing communities about how they have been affected by amendments to the Multispecies Fishery Management Plan since 1994. The Council staff held a series of 10 meetings in the region during November and December 2000 that attracted about 400 people. Two reports, one on social impacts and the other on economic impacts, have been prepared and will be incorporated into the impact assessment required for the next regulatory change in the management of groundfish.<sup>5</sup>

The ideal is to work towards not only collaborative information gathering but also a review process for the analyses that brings together diverse stakeholders from a variety of communities and social scientists representing multiple disciplines. Again, the review of biological data in NMFS' annual SAW provides precedent.

We anticipate that the work reported here will serve as a baseline for the long-term collection of socio-economic data. The first step has been taken...

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<sup>5</sup> <http://www.nefmc.org/>

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<sup>5</sup><http://www.nefmc.org>

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<sup>1</sup> This does not include the web sites used for the profiles, please see the footnotes for individual port profiles.

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