

***Alexandrium fundyense* and PSP in the Bay of Fundy – 2005**

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The Bay of Fundy has a long history of blooms of *Alexandrium fundyense* and annual shellfish harvesting area closures due to unsafe levels of PSP toxins in shellfish tissues. These closures generally occur during summer months and last for several weeks, but during some years, closures can last for several months. In addition to closures of shellfish harvesting areas, herring mortalities occurred in 1976 and 1979. The salmon farming industry also suffered mortalities associated with *A. fundyense* in 2003 and 2004.

Data on PSP toxin concentrations in shellfish have been collected from the Bay of Fundy since the 1940s and provide an important perspective on the inter-annual and seasonal patterns of *A. fundyense*. These data indicate that PSP has been present throughout much of the Bay of Fundy, particularly the lower Bay, since the early 1940s. As well, native lore prohibiting the consumption of shellfish during specific months indicates a long term seasonal pattern in *A. fundyense* abundance. The toxicity data indicate that there are consecutive years of greater toxicities such as the mid 1940s, early 1960s, late 1970s and early 1980s and the early turn of the century.

Regular sampling of phytoplankton populations since 1988 at 4 locations has shown that *A. fundyense* cell concentrations are generally greatest in the offshore regions in close proximity to major cyst deposits and tend to be dispersed through the exposed regions of the Bay of Fundy through water movements and circulation. Highest cells densities observed since 1988 were observed in 2003 (8.8×10^5 cells•L⁻¹) in the Grand Manan Island area and in 2004 in Bliss Harbour (> 3 million cells•L⁻¹). Results indicate that 2005 cell densities of *A. fundyense* were an order of magnitude lower than the previous 2 years with the greatest numbers (5.3×10^5 cells•L⁻¹) observed in mid-Passamaquoddy Bay.