Mission 2015 GIS Workshop September 26, 2010

Mission 2015: Triage & Biodiversity

Daniel Sheehan

Outline for today

- GIS Resources on campus
- Data for the workshop
- Scheduling the GIS workshop (to be completed by October 5)

GIS Resources On Campus

- MIT GIS Lab
  - Located in Rotch Library, building 7 (second floor, off of Lobby 7 – technically in building 7A)
  - 6 Windows PC with Arcgis version 10 and Google Earth Pro
  - Staffed Monday through Thursday afternoons 12:30 – 6:00PM,m Friday 2:00-5:0PM, and by appointment
  - Spatial Data Repository
- 37-312 –starting in early October
  - 22 Windows PC with Arcgis
  - You need Athena combination and ID card for entry

GIS staff at MIT

- Anne Graham
- Heather McCann
- Jennie Murack
- Daniel Sheehan
- Lisa Sweeney
- Tyler Kreider

- Contact us at gishelp@mit.edu or stop in GIS Lab during lab hours

MIT Spatial Data Repository

Search Tools

- Geoweb, a web interface to 2,000 layers at MIT, 1,000 layers at MASSGIS, and 8,000 layers at Harvard
  - MIT licensed data are certificate protected
  - Harvard licensed layers are restricted to Harvard users
  - Layers can be drawn on the web interface or downloaded to local drives (in zipped folder)
- Paper maps in the Barton catalog are searchable

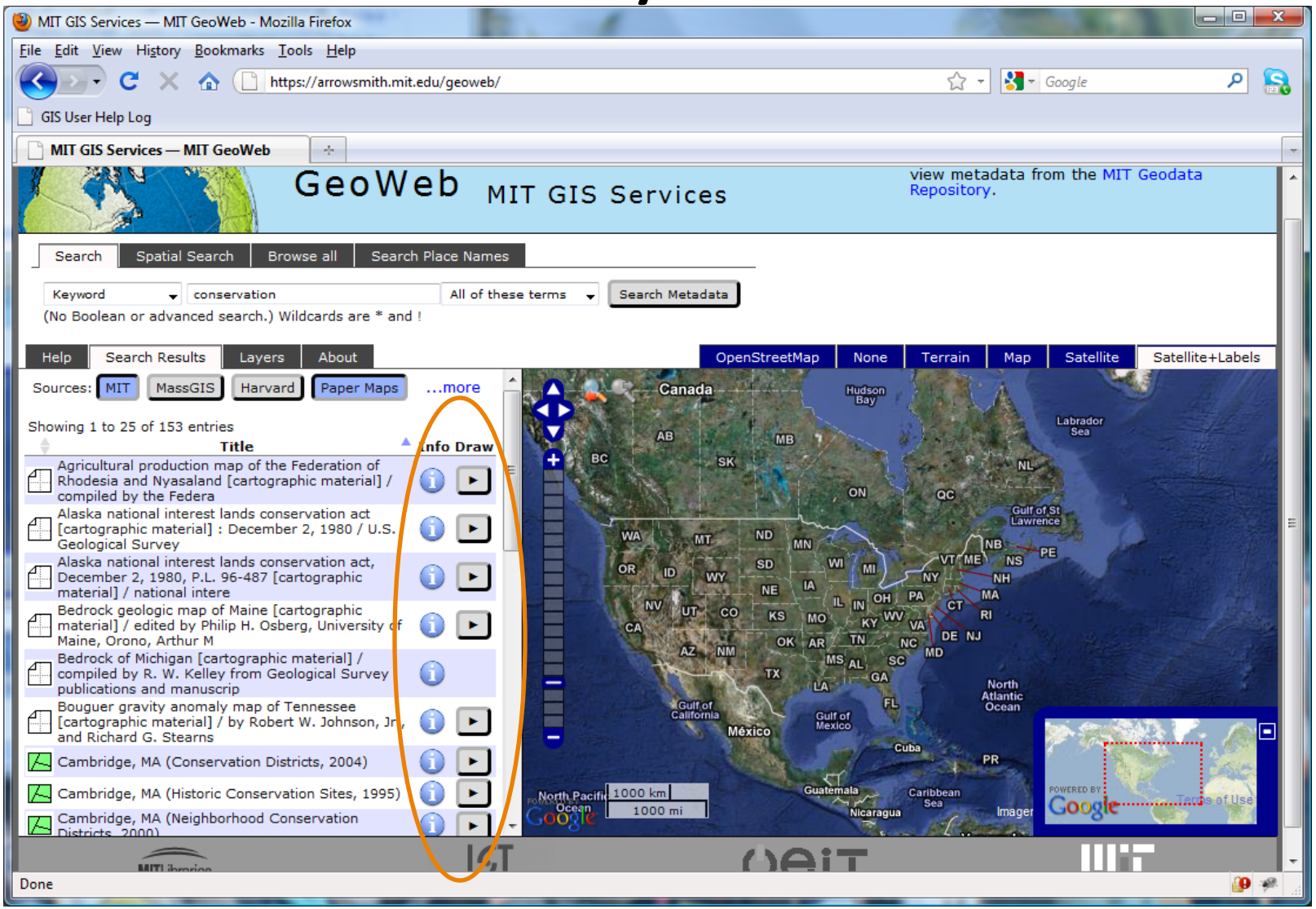
MIT Spatial Data Repository

Search Tools (continued)

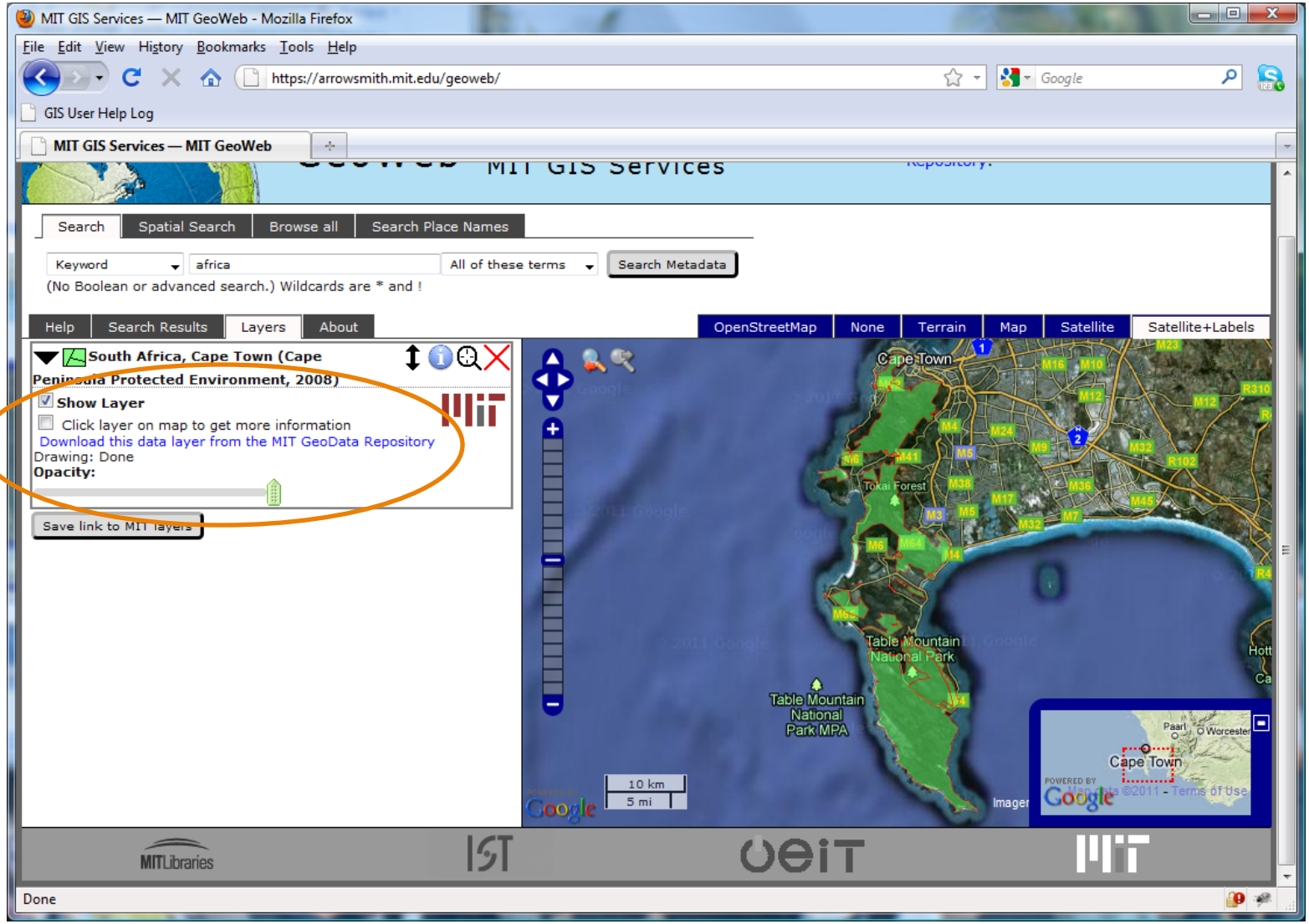
- Arcgis desktop version searches only MIT data
  - Data is downloaded to your Arcgis project and can easily be saved to local drives

MIT Geoweb: web.mit.edu/geoweb

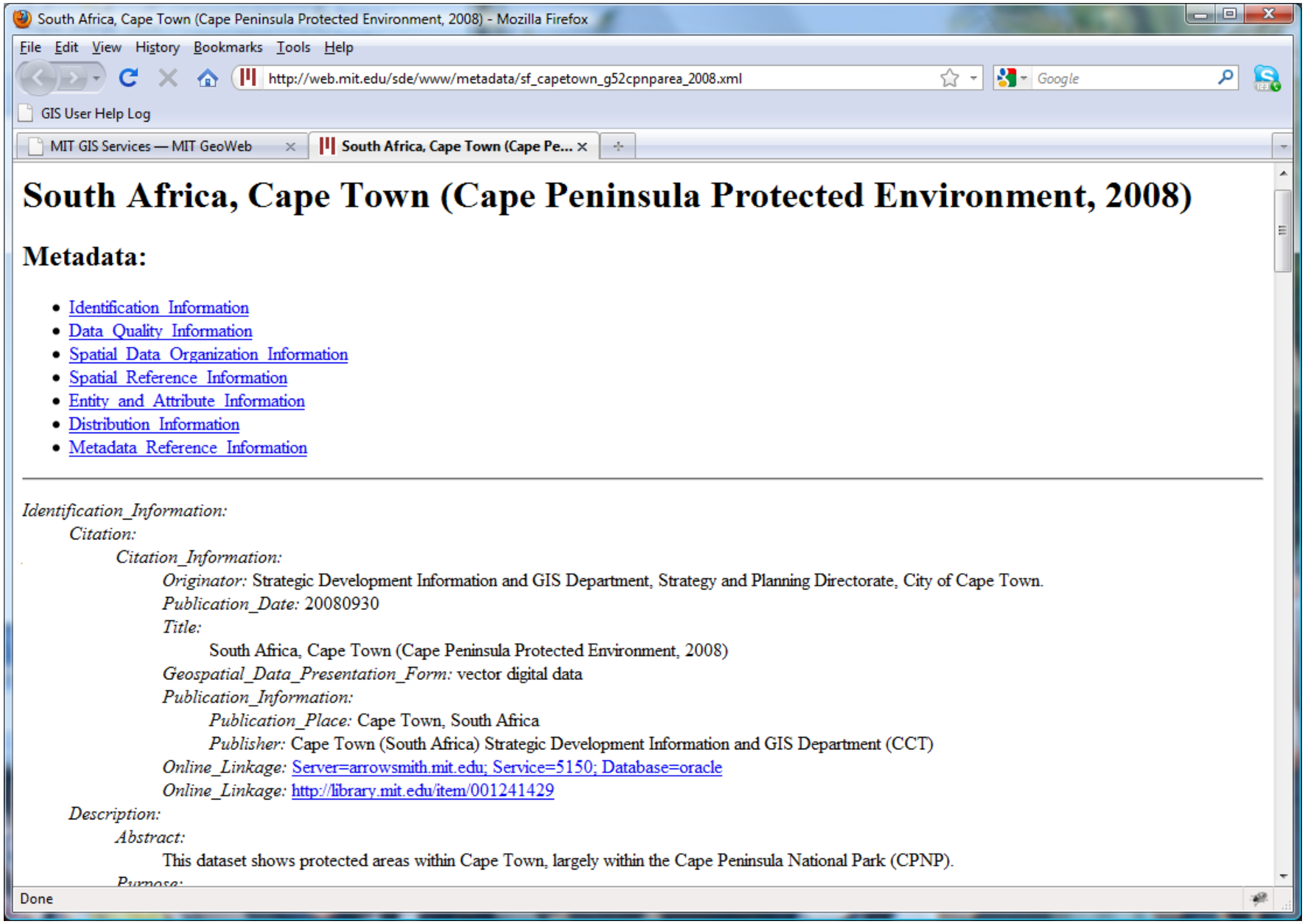
Geoweb: Keyword Search



Geoweb: Search Results



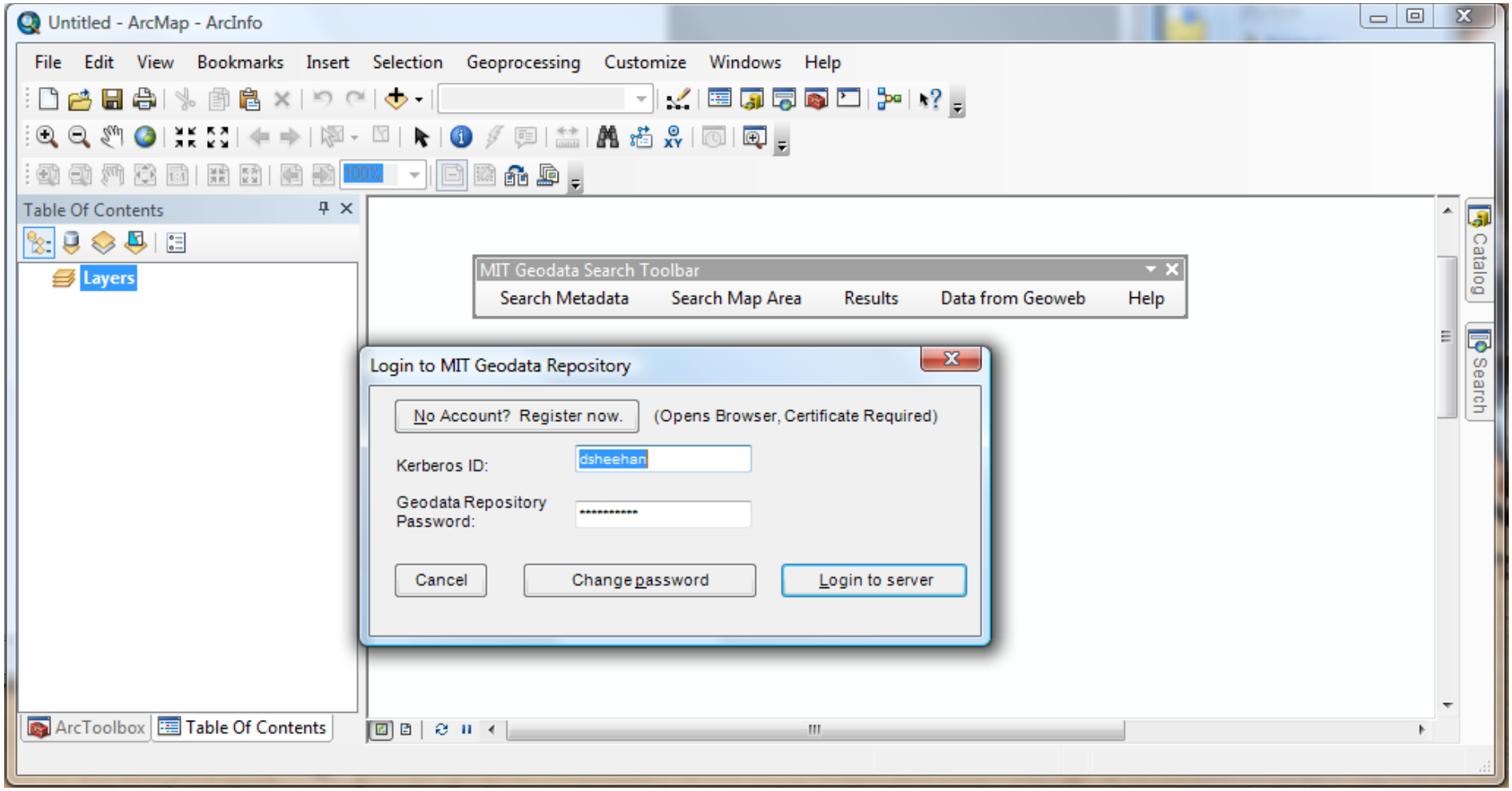
Geoweb: Metadata



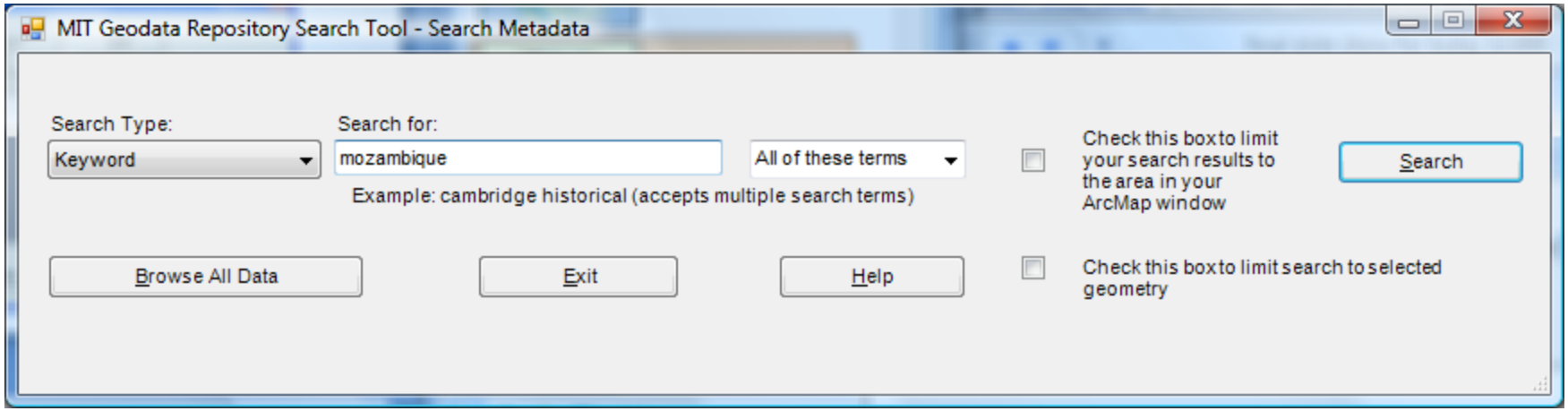
Arcgis Desktop Software

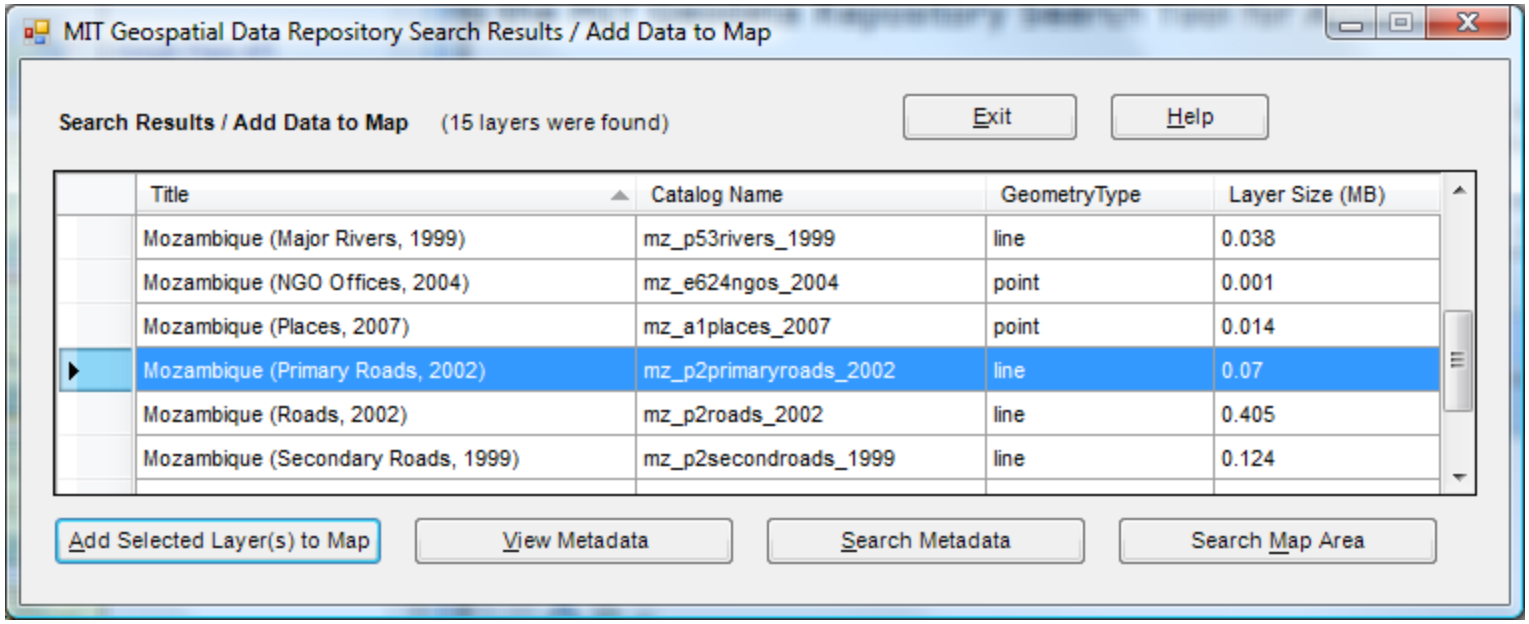
- Data Display
  - No data exists in software, you need to find and add data
- Data Processing
- Simple Cartography
  - Export maps to finish in Photoshop, etc

MIT Geodata Repository Login



Metadata Search and Results





Getting the Software for your personal machine

Getting Arcgis:
http://ist.mit.edu/services/software/esri/10

Download Arcgis_Desktop10_122519.zip and MIT_Geodata_Search_Tool_for_Arcgis10.exe (run search tool exe only after installing Arcgis).

Getting a repository account for Arcgis

http://libraries.mit.edu/gis/data/repository.html

Use Touchstone (which uses your kerberos ID)

Use a password other than your Athena/email password. Must be at least 8 characters starting with a letter.

GIS Workshops

- Should take you about 1 hour
- You will use Arcgis, the most common desktop GIS. MIT has a site license for this software.
- You will use protected places datasets to determine differences in what “protected” means.

Data for the workshop

- Protected places from:
  - http://www.databasin.org, a repository of the Conservation Biology Institute (http://consbio.org/)
  - http://www.protectedplanet.net/, a joint project of the International Union for Conservation of Nature and the United Nations Environment Programme, World Conservation Monitoring Centre (http://www.unep-wcmc.org/)

  - Registration is required for both sites

Metadata from www.databasin.org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        <abstract>This dataset is an extraction from PAD-US 1.1 (CBI Edition), by state. The PAD-US 1.1 (CBI Edition) data set portrays the nation&amp;apos;s protected areas with a standardized spatial geometry and numerous valuable attributes on land ownership, management designations, and conservation status (using national GAP and international IUCN coding systems). The PAD-US 1.1 (CBI Edition) defines protected areas to include all lands dedicated to the preservation of biological diversity and to other natural, recreation and cultural uses, and managed for these purposes through legal or other effective means (adapted from IUCN definition). The database represents the full range of conservation designations that preserve these natural resources in the United States. Protected areas are cornerstones of national and international conservation strategies. By way of these designations, lands and waters are set-aside in-perpetuity to preserve functioning natural ecosystems, act as refuges for species, and maintain ecological processes. Complementary conservation strategies preserve land for the sustainable use of natural resources, or for the protection of significant geologic and cultural features or open space. PAD-US 1.1 (CBI Edition) attempts to include all available spatial data on these places. It is our goal to publish the most comprehensive geospatial data set of U. S. protected areas to date.</abstract>
        <purpose>This GIS-based dataset was created to help people integrate protected areas data into their daily work (e.g. mapping, planning, analyses, and problem-solving). For example, this database makes it easy for users to address important conservation and resource questions pertaining to climate change adaptation, green energy development, infrastructure planning, and wildlife connectivity. State and regional planners and managers will appreciate this dataset as it provides critical contextual information for their work. Institutions responsible for national and international reporting will find this database full of reliable, accurate information for their purposes. The scientific and conservation community will similarly benefit from having this standardized base map to carry out their research and planning objectives.</purpose>
        <supplinf/>
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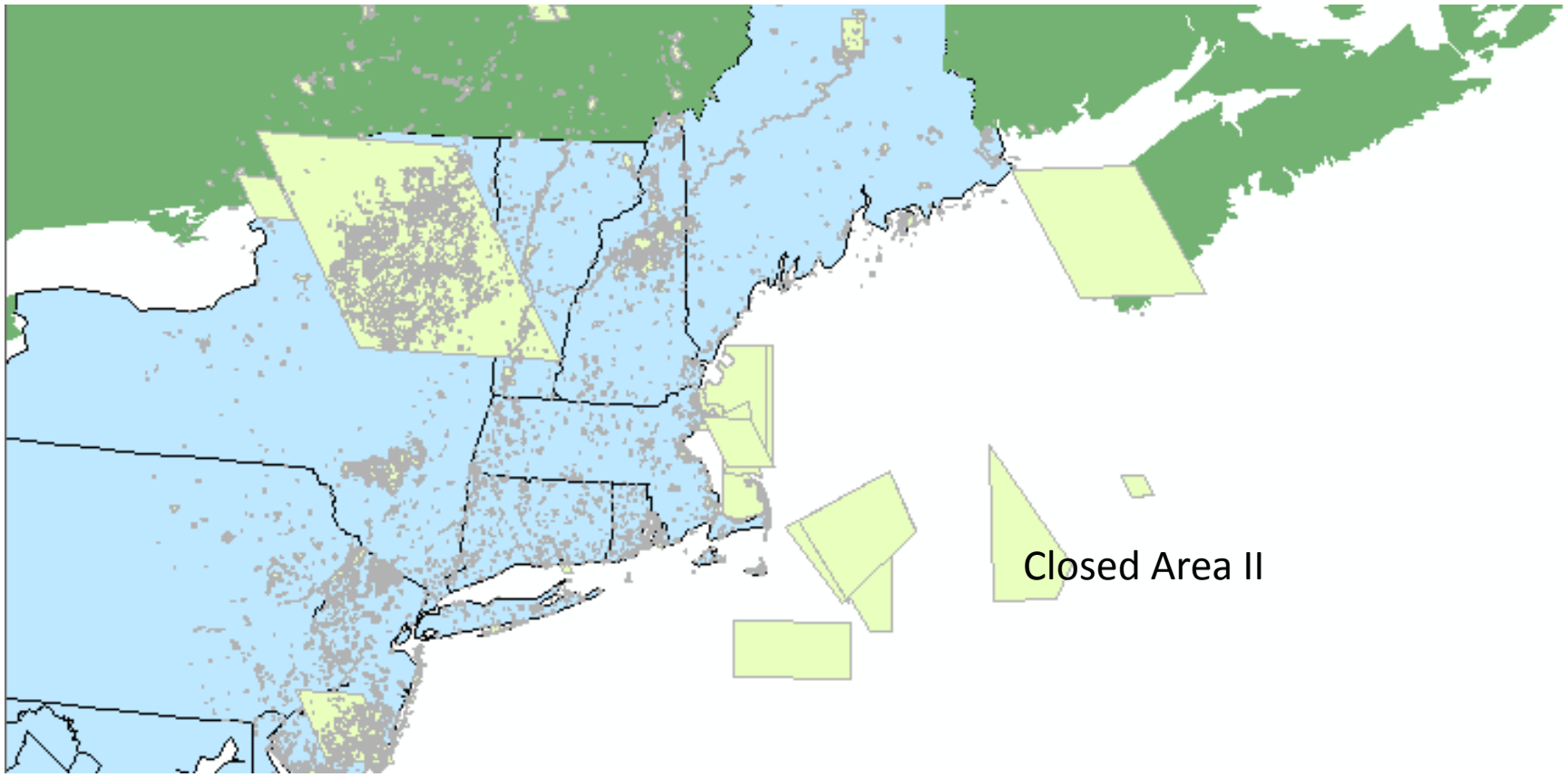
Protect Planet data



Workshops – when and where

- Wednesday (9/28) - instructor is Tyler Kreider
- Monday (10/3) instructor is Daniel Sheehan
- Tuesday (10/4) instructor is Anne Graham

- All workshops are 7:30-8:30PM
- All workshops are in 14N-132

Workshops – when and where

Workshops will be in:

- The Libraries' Digital Instruction Resource Center, 14N-132 (enter building 14 at the Music Library and go right, DIRC is on your right)

Workshop locations

Workshops – pick one!

- Use the doodle poll which I will email early this evening
- I will send email reminders.
- Pick by 5PM on Tuesday!

For the rest of your project:

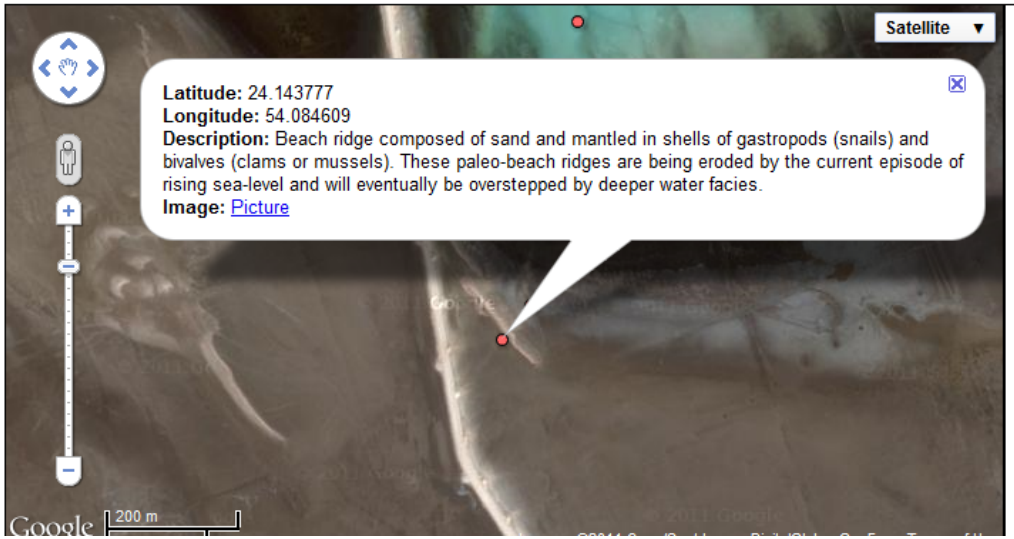
Data formats that work in GIS …

- shapefiles
- arcinfo coverages and grids
- jpeg
- tiff and geotiff
- Several other image formats with small fixes
- CAD (with conversions)
- CSV files with a unique ID for specific geographic regions (country codes or province names)
- KML files

Web mapping tools

Google Fusion tables and Google Maps API

Mission 2013 in Abu Dhabi



Massiah Foundation-Terrascope Mission 2013 Field Trip - Sabhka, Modern Analog for Ancient Oil

This map uses the satellite view to see the desert landscape from above. The satellite image shows the microbial mat facies, which we walked across.

Click on balloons to see information about our traverse.

Use the Zoom tool on the left to zoom in or out. Use your mouse to pan across the map. Clicking on the map both centers the map where you clicked and zooms in.

Latitude	Longitude	Description	Image
24.144255	54.08501833	Stepping onto the microbial mat which is a 5 cent...	http://web.mit.edu/dsheehan/www/abudhabi/microbialmat.jpg
24.14614667	54.08517333	Crossing water filled tracks in Microbial mat faci...	http://web.mit.edu/dsheehan/www/abudhabi/seismictracks.jpg
24.147025	54.08529667	Seaward edge of microbial mat facies. This is whe...	http://web.mit.edu/dsheehan/www/abudhabi/edgeofmat.jpg
24.14815	54.085745	This stream drains water from the previous high ti...	
24.14920167	54.08541333	A native Mangrove tree that survives in this salin...	http://web.mit.edu/dsheehan/www/abudhabi/mangrove.jpg

- MIT Geodata Reposity
  - http://web.mit.edu/geoweb
- Example Google Maps API
  - http://web.mit.edu/dsheehan/www/sirsi/geoblog.html
  - http://web.mit.edu/dsheehan/www/abudhabi/sabkha.html
- Download Google Earth
  - http://earth.google.com/download-earth.html

Where to get more infomation

- GIS Lab, Rotch Library, Building 7
  - 6 PCs with Arcgis and Google Earth Pro installed
  - Staffed Monday through Thursday afternoons 12:30 – 6:00PM,m Friday 2:00-5:0PM, and by appointment
  - email gishelp@mit.edu or dsheehan@mit.edu