

User Guide

The HTML version of this document is available at http://maps.massgis.state.ma.us/map_ol/moris_users_documentation.htm.

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***Please note:** MORIS is one of a family of applications, all built on the same template. Some of the other versions include OLIVER (the MassGIS Online Data Viewer) and SPOLIVER (the State Police Online Data Viewer). This user guide applies to all of these applications, so you may substitute OLIVER, SPOLIVER, etc. for MORIS as you read this guide.

Terms and Conditions: By using MORIS you agree to the following [terms](#).

Introduction

Background

MORIS, the Massachusetts Ocean Resource Information System, is an online mapping tool created by the [Massachusetts Office of Coastal Zone Management](#) (CZM), the [Massachusetts Office of Geographic Information](#) (MassGIS), the [Massachusetts Ocean Partnership](#) (MOP), [Applied Science Associates](#) (ASA), and [Charlton Galvarino](#). MORIS can be used to search and display spatial data pertaining to the Massachusetts coastal zone. Users can interactively view various data layers, create and share maps, and download the data for use in a Geographic Information System (GIS). MORIS connects to MassGIS' GeoServer-based [web mapping service](#).

What do I need to run MORIS?

MORIS is run through a web browser. At this time, the application fully works in Internet Explorer and Mozilla Firefox and has some limited functionality in other web browsers. The latest versions of both Internet Explorer and Firefox are recommended. Currently Internet Explorer 8 and Firefox 3.6.13 have been thoroughly tested, but the application also works in Internet Explorer 6 and 7 and Firefox 3.0 and above.



Getting Started

To start MORIS, go to <http://www.mass.gov/czm/mapping/index.htm>. Select “Yes” if you accept and agree to the terms and would like to view the online maps.

To start OLIVER, go to <http://maps.massgis.state.ma.us/map.ol/oliver.php>.

To start SPOLIVER, go to <http://maps.massgis.state.ma.us/map.ol/spoliver.php>.

Initial view of the MORIS application

Tools →

Map view →

Tools →

Available data layers

Active data layers

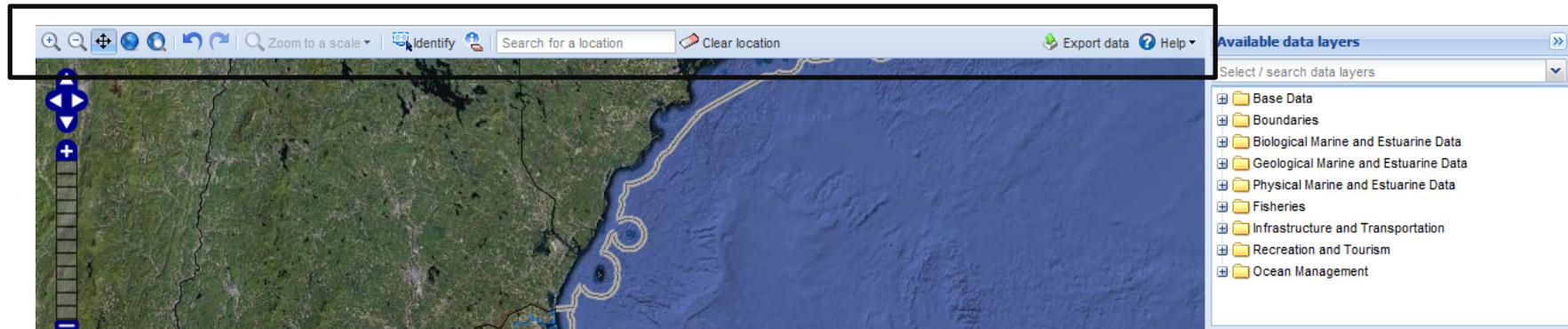
Legend

Settings ↑

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Tools



Zoom in. Click this button then click once on the map to zoom in to an area, or click on the map, hold down the mouse button, and drag to draw a box to zoom in to that area of interest. The box will be outlined in red as you draw it.

Zoom out. Click this button then click once on the map to see approximately twice as much area, or click on the map, hold down the mouse button, and drag to draw a box to zoom out from that box. The box will be outlined in red as you draw it.

Pan. Click this button then click on the map, hold down the mouse button, and drag to recenter the map.

Zoom to initial extent. Click this button to zoom to the initial map extent.

Zoom to full extent of active data. Click this button to zoom to the extent of all the active data layers that are checked.

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Go back to previous extent. Click this button to go back to the previous map extent.

Go to next extent. Click this button to go forward to the next map extent.

Zoom to a scale. Click this button to view a drop-down menu. Click one of the listed common map scales, or to zoom to an exact scale, enter a scale value (e.g., 7,500) into the “Custom scale” box. Press enter to zoom to that scale. This tool is only available for the Custom basemap.

Identify features by drawing a box. Click this button, click on the map, hold down the mouse button, and drag to draw a box to identify features of active data layers located within the box. The box will appear orange as you draw it. The query results will appear in a pop-up window.

Clear identified features. Click this button to clear identified features.

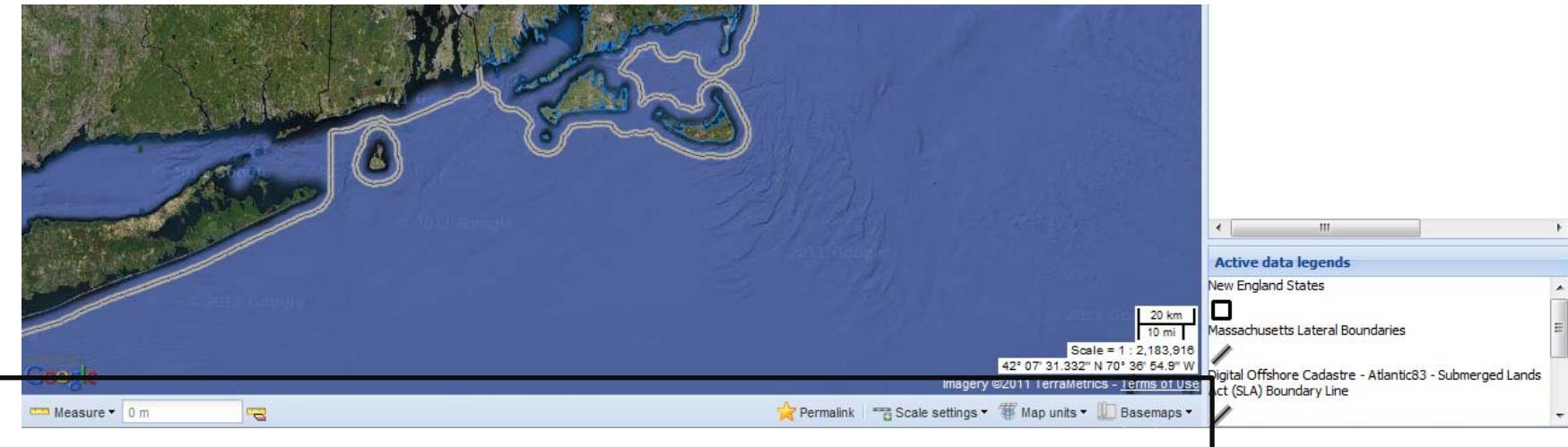
Search for a location. Type an address or location into the box and press enter to zoom to a location. This location feature is provided by Microsoft Bing.

Clear location. Click this button to clear the location search results (a blue balloon or blue rectangle) from the map.

Export data. Click this button to launch the data export wizard. This wizard may be used to export vector data as ESRI shapefiles or KMLs (Google Earth and other clients) and raster data as GeoTIFFs.

Help. Click this button to view a drop-down menu. Click “Help HTML” to view the user guide in HTML. Click “Help PDF” to view a PDF document of the user guide. Click “About MORIS” to learn more about MORIS.

Tools (continued)



Measure by length or area. Click this button to view the measure menu. Move the mouse cursor over “Units” to view a menu of measurement units options and click one of the listed units to select that unit of measurement. Click “By length” to measure the length of a line, click on the map to draw vertices of the line, and double-click to finish drawing the line. Click “By area” to measure the area of a polygon, click on the map to draw vertices of the polygon, and double-click to finish drawing the polygon.

Clear measurement. Click this tool to clear the measured line or polygon from the map and to clear the distance or area from the measurement results box.

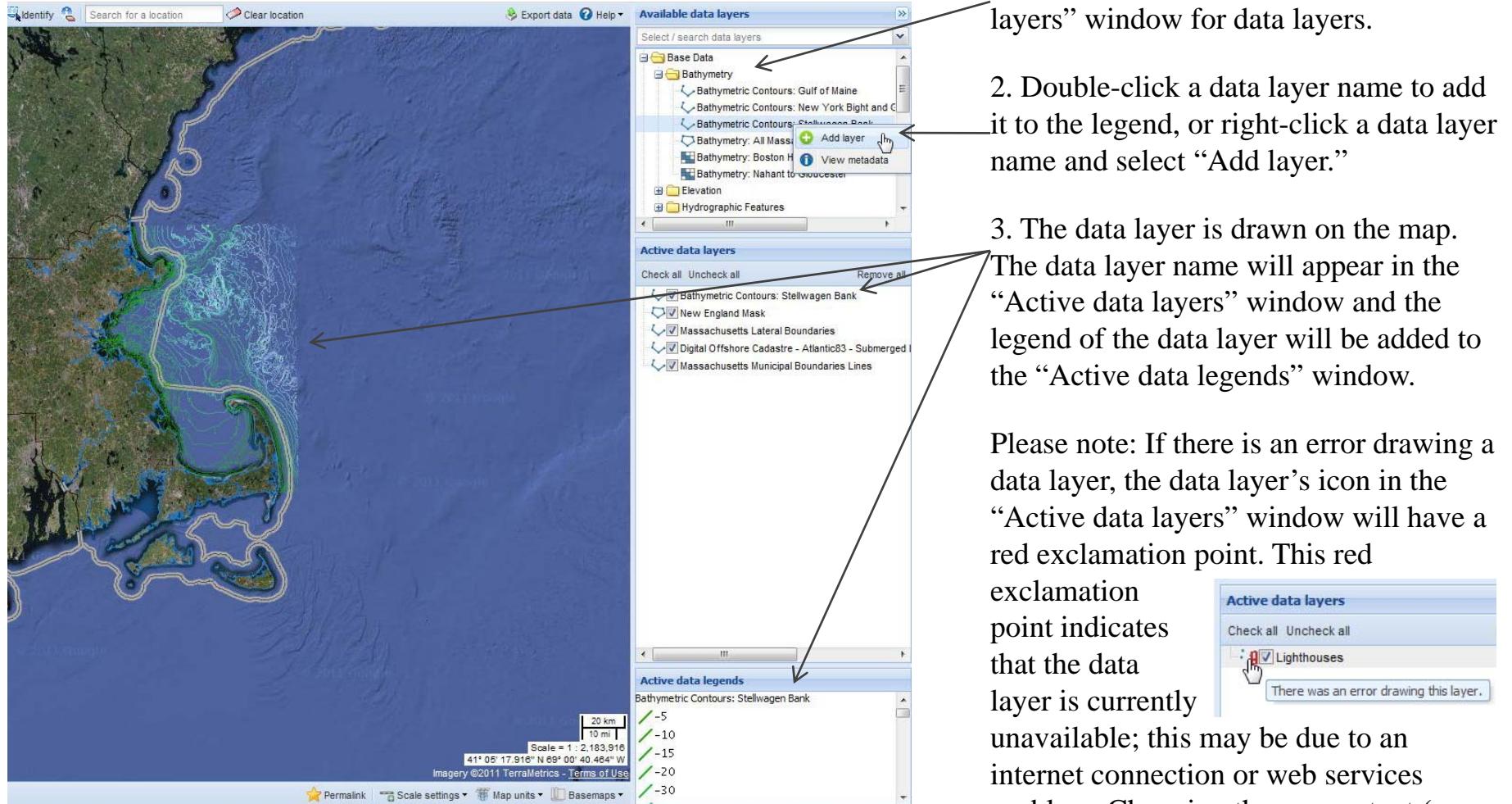
Permalink. Click this button to make a permalink for the map. Right-click the [permalink](#) and copy and save it as a bookmark to launch the MORIS application with the current map settings (data layers, extent, etc.) enabled.

Scale settings. Click this tool and click on or off the checkboxes to show or hide the scalebar and scale ratio.

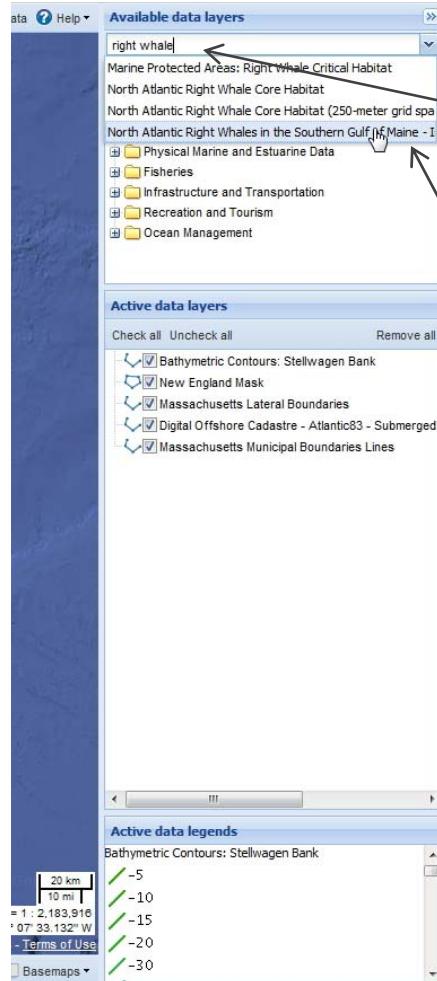
Map units. Click this tool and select one of the map units to change which units are displayed in the lower right-hand corner of the map.

Basemaps. Click this tool to change the basemap or the opacity of the basemap (except Custom – the opacity of Custom is controlled data layer by data layer in the “Active data layers” window).

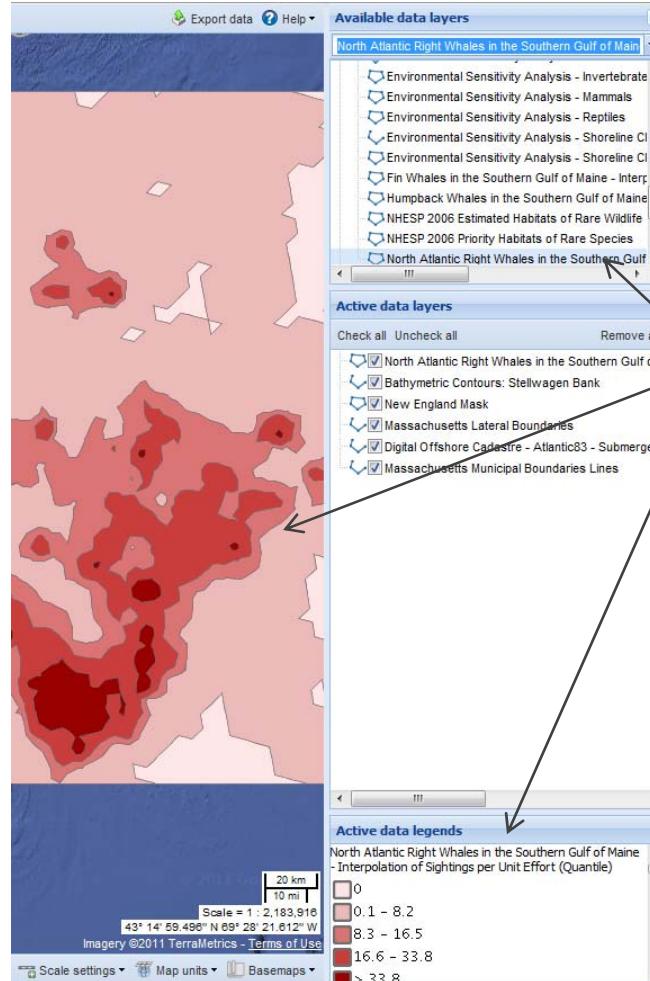
Adding Data Layers



Adding Data Layers by Searching

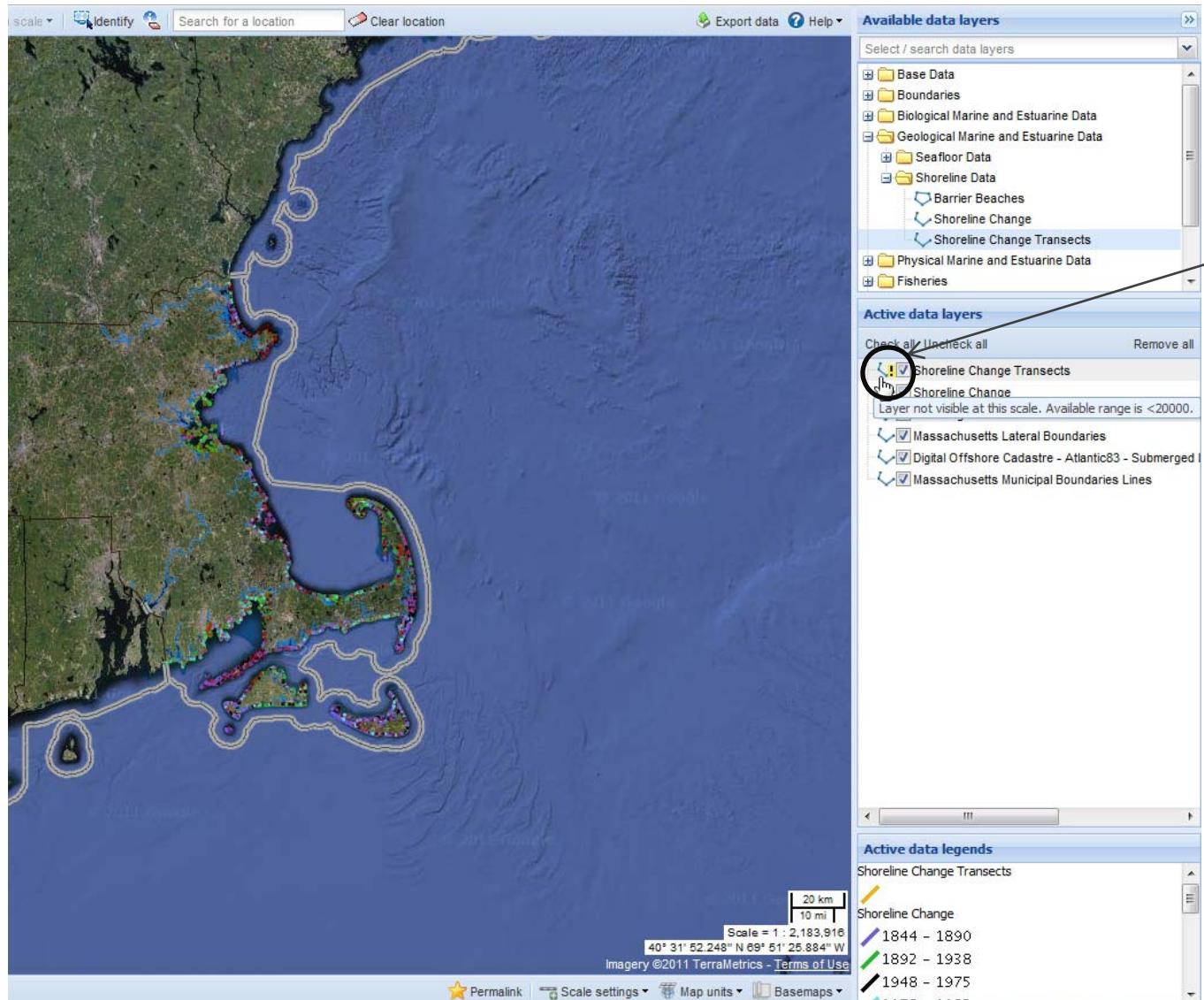


1. Type a search term in the box. The application searches data layer names.
2. Click the data layer name of interest.



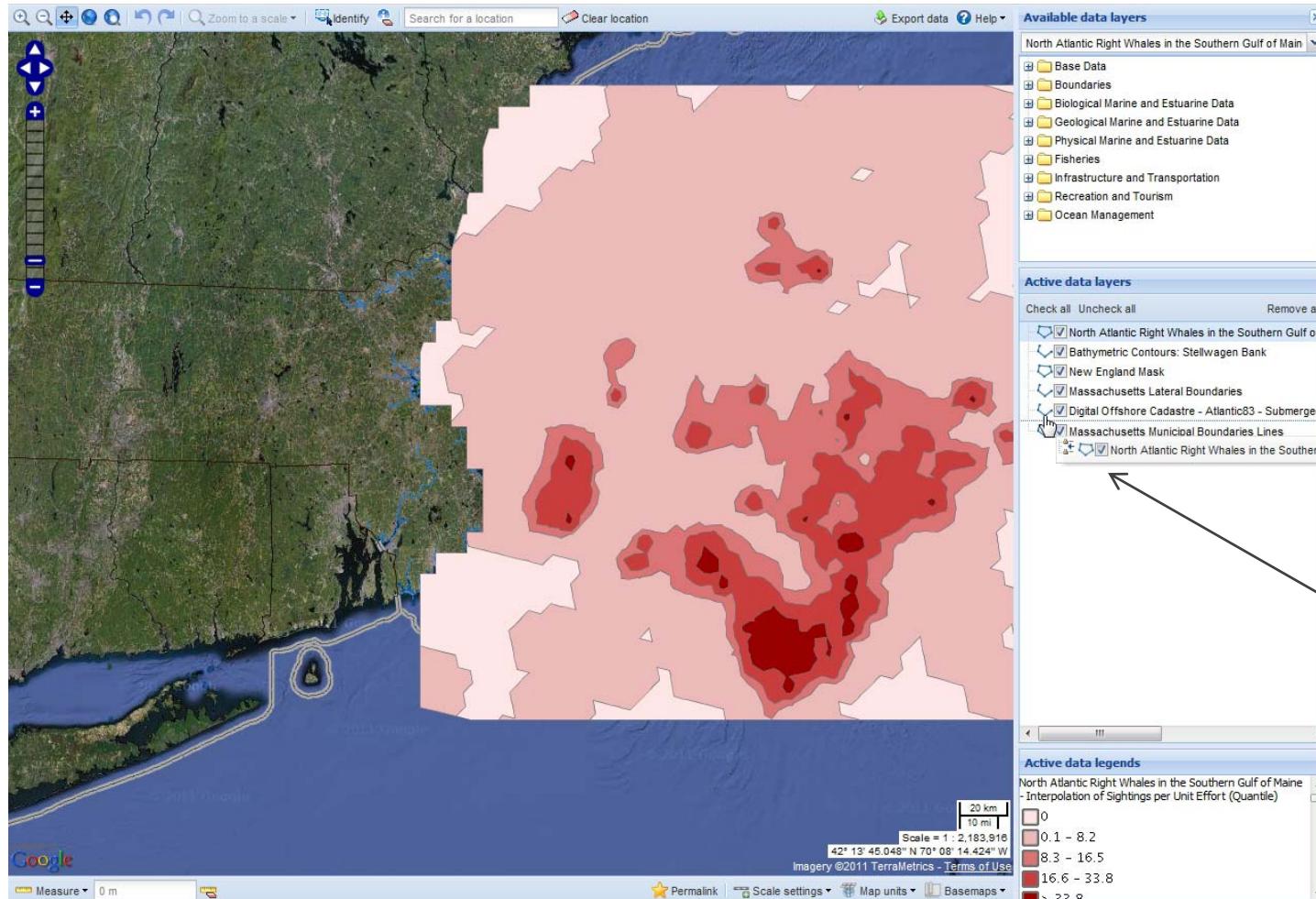
3. The data layer is drawn on the map. The folders in the "Available data layers" window will open to the first listing of the data layer. The data layer name will appear in the "Active data layers" window and the legend will be added to the "Active data legends" window.

Data Layers with Scale Dependencies



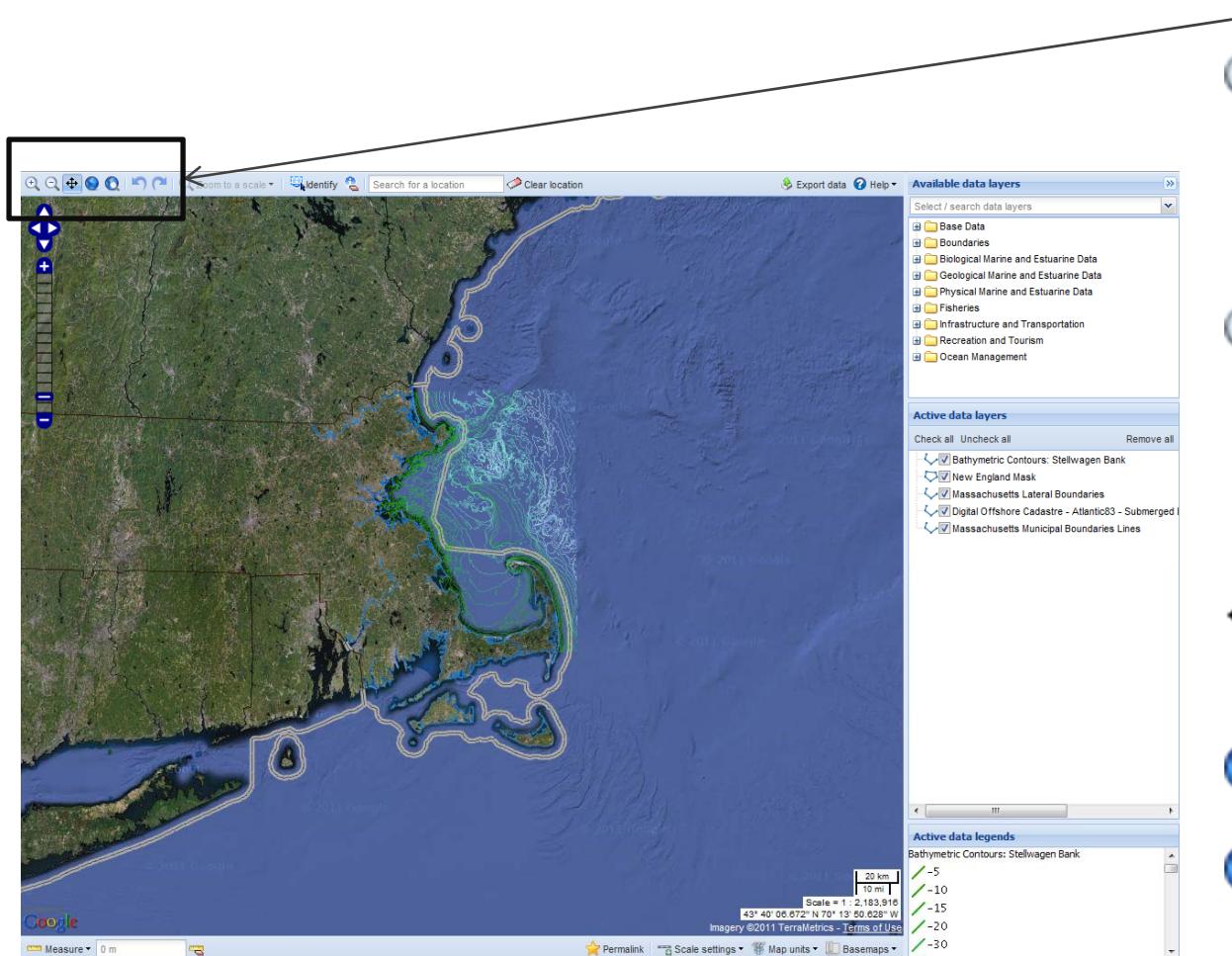
Most data layers are visible at all scales, but some data layers have scale dependencies and are only visible within certain scale ranges, such as greater than 1:1,000. If a data layer has a scale dependency and the map is not within the appropriate scale range, the data layer will not draw on the map and its icon in the “Active data layers” window will have a yellow exclamation point. Hover the mouse over the yellow exclamation point to see the range within which the data layer will draw. To view the data layer, zoom in or out to a map scale within the available scale range.

Reordering Data Layers



Data layers are drawn from the bottom to the top. To reorder the data layers, click on a data layer name in the “Active data layers” window, hold down the mouse button, and drag the data layer name up or down in the list.

Navigating the Map



Tools

Zoom in. Click this button then click once on the map to zoom in to an area, or click on the map, hold down the mouse button, and drag to draw a box to zoom in to that area of interest. The box will be outlined in red as you draw it.

Zoom out. Click this button then click once on the map to see approximately twice as much area, or click on the map, hold down the mouse button, and drag to draw a box to zoom out from that box. The box will be outlined in red as you draw it.

Pan. Click this button then click on the map, hold down the mouse button, and drag to recenter the map.

Zoom to initial extent. Click this button to zoom to the initial map extent.

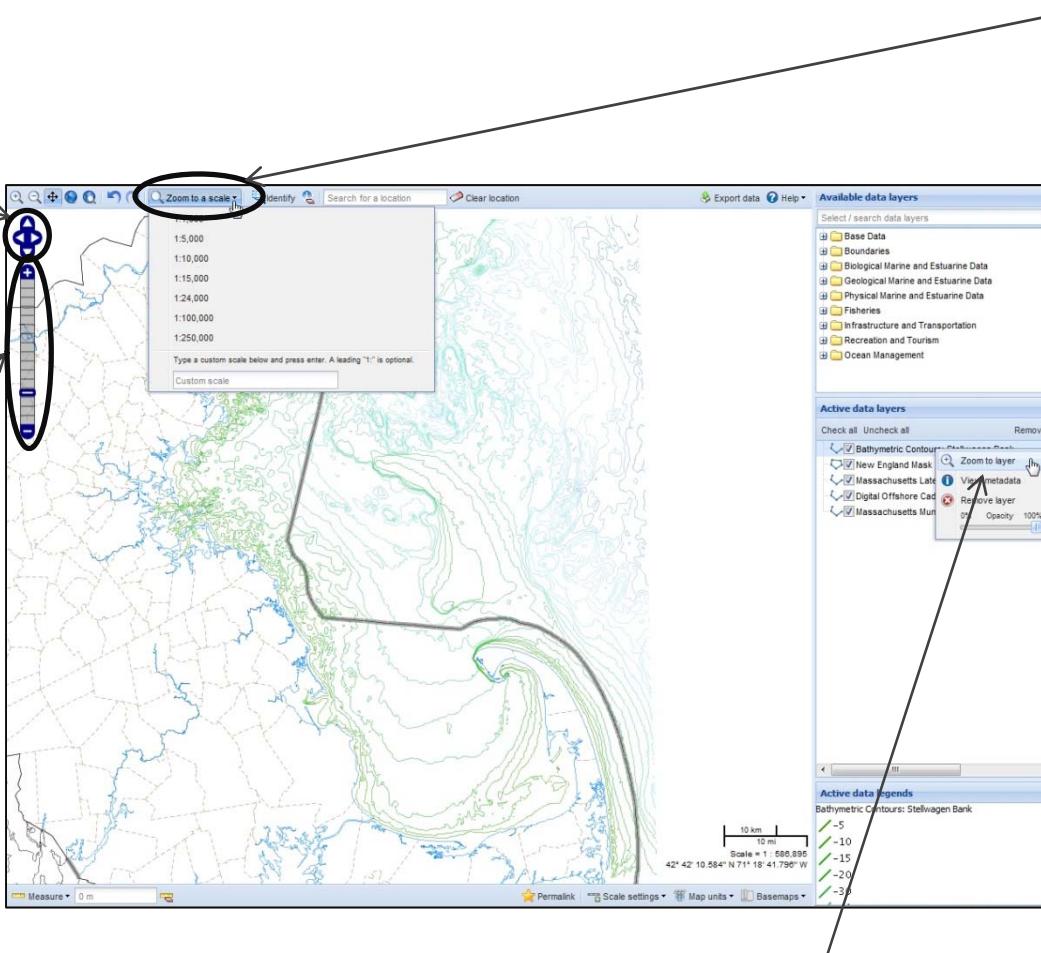
Zoom to full extent of active data. Click this button to zoom to the extent of all the active data layers that are checked.

Go back to previous extent. Click this button to go back to the previous map extent.

Go to next extent. Click this button to go forward to the next map extent.

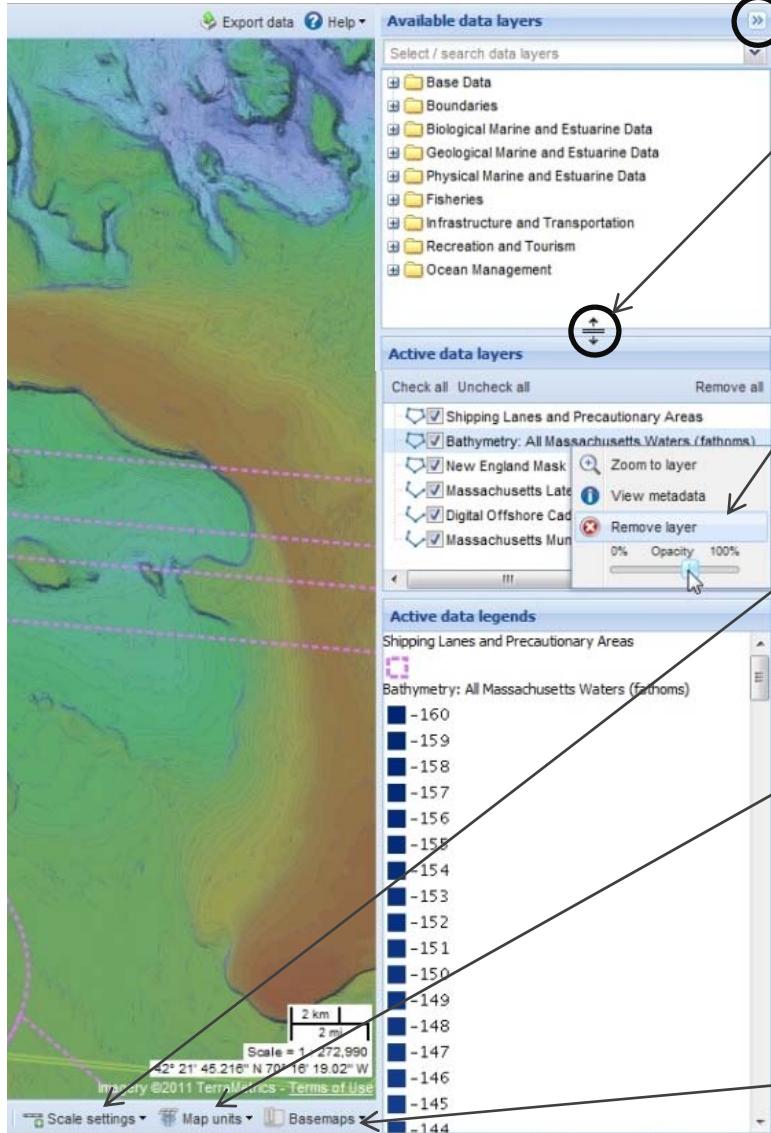
Navigating the Map (continued)

The arrows may be used to pan the map. Click an arrow to pan the map north, south, east, or west.



The “Zoom to a scale” menu is only available in the Custom basemap. The Google and OpenStreetMap basemaps may only be viewed at fixed zoom levels. The Custom basemap, however, may be zoomed to any scale from 1:100 to 1:5,000,000. To zoom to a particular scale in Custom, click the “Zoom to a scale” menu and select one of the listed scales or type a scale into the “Custom scale” box and press enter. The zoom in tool or zoom slider may also be used to zoom to an in-between zoom level in the Custom basemap.

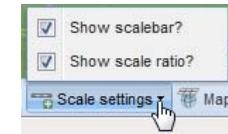
Customizing the Map



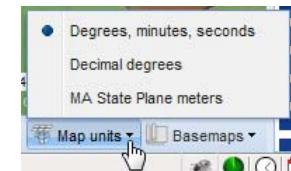
Windows: The “Available data layers,” “Active data layers,” and “Active data legends” windows may be minimized or resized. Click the arrows icon () to minimize the three windows. To resize a window, move the mouse cursor over the edge of a window, hold down the mouse button, and drag the window edge to the desired height or width.

Opacity: The opacity of active data layers may be changed. Right-click a data layer’s name in the “Active data layers” window, click the opacity slider, hold down the mouse button, and drag the slider to the desired opacity. Data layers with 0% opacity will be completely transparent and data layers with 100% opacity will be opaque.

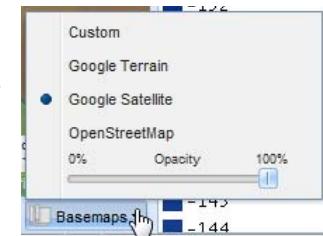
Scale settings: The scalebar and scale ratio in the lower right-hand corner of the map may be turned on or off. Click the “Scale settings” menu and click on or off the checkboxes to show or hide the scalebar and scale ratio.



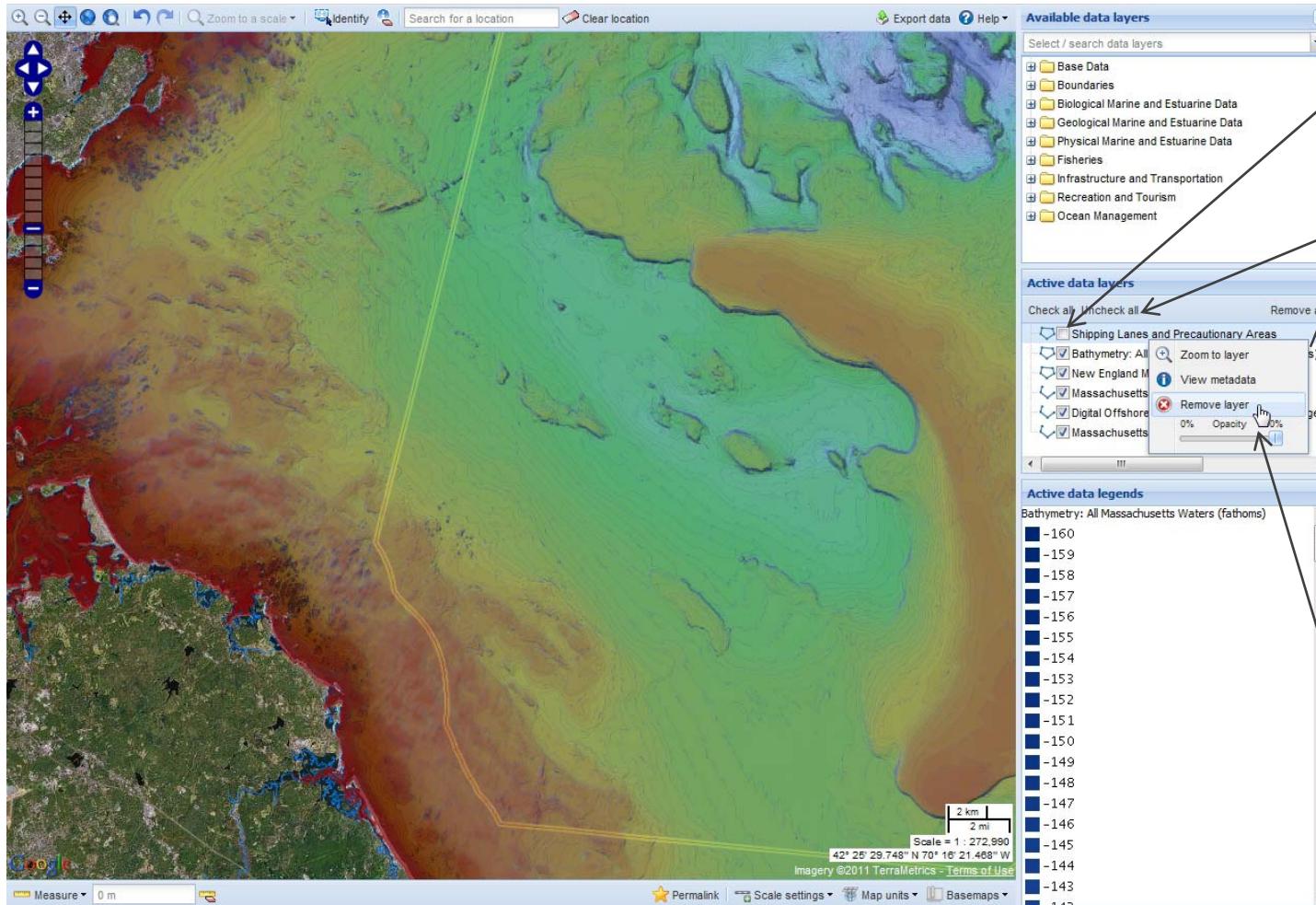
Map units: When the cursor is over the map, the latitude and longitude of the cursor’s location are displayed in the lower right-hand corner of the map. To change the units of the latitude and longitude, click the “Map units” menu and select one of the listed options.



Basemaps: To change the basemap, click the “Basemap” menu and select one of the listed options. The opacity of the current basemap may also be changed. Click the “Basemap” menu, click the opacity slider, hold down the mouse button, and drag the slider to the desired opacity. This feature is not available for the Custom basemap – the opacity of Custom is controlled by data layer in the “Active data layers” window.



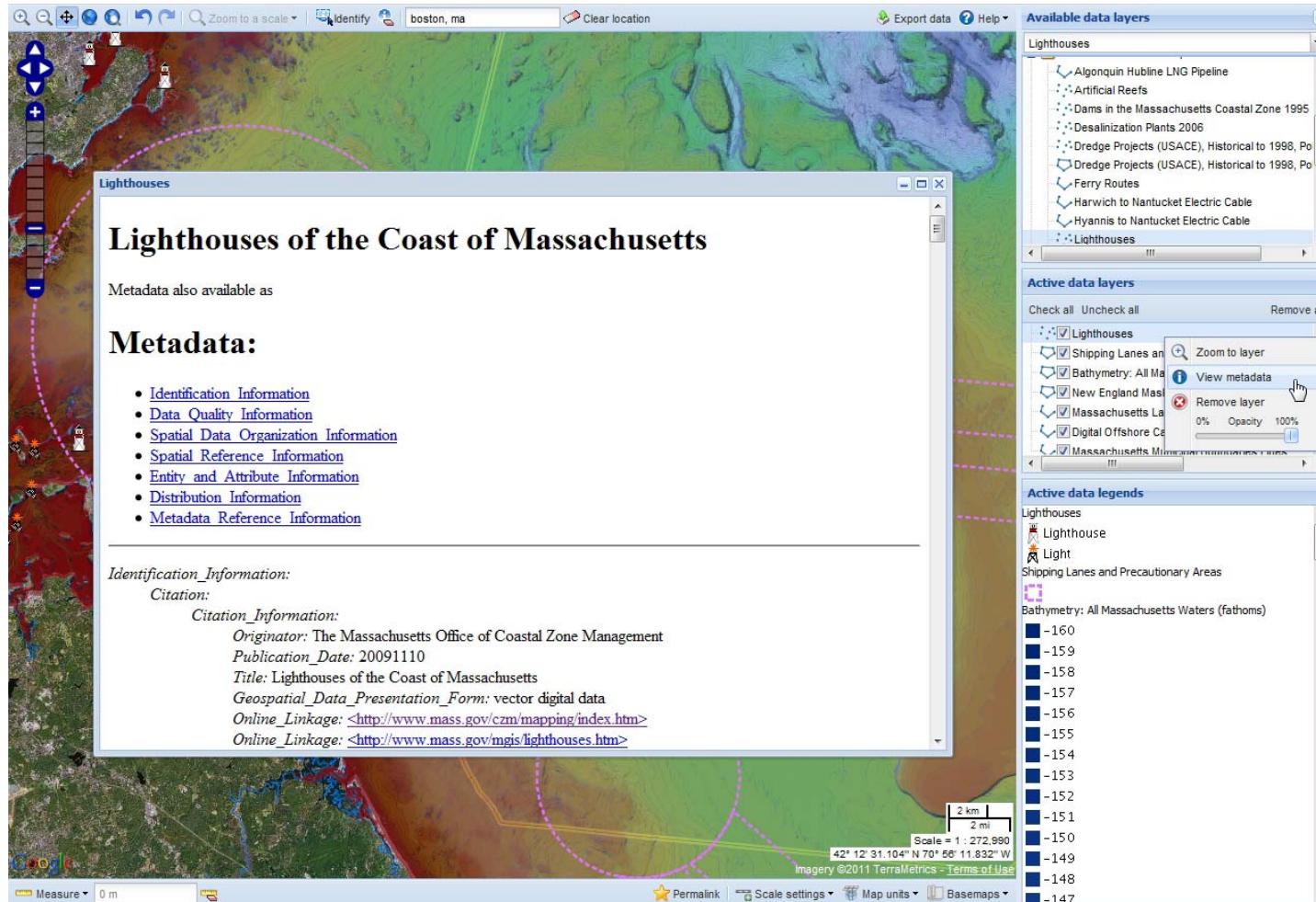
Removing Data Layers



To temporarily turn a data layer off, uncheck the box next to the data layer name in the “Active data layers” window. The “Uncheck all” button may be clicked to turn off all the active data layers. The legends of unchecked data layers will be removed from the “Active data legends” window.

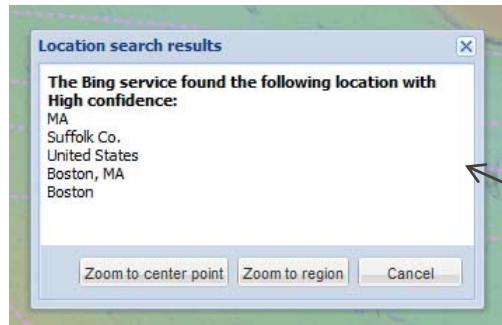
To remove a data layer, right-click the data layer name in the “Active data layers” window and select “Remove layer.” The “Remove all” button may also be clicked to remove all the active data layers.

Viewing Metadata

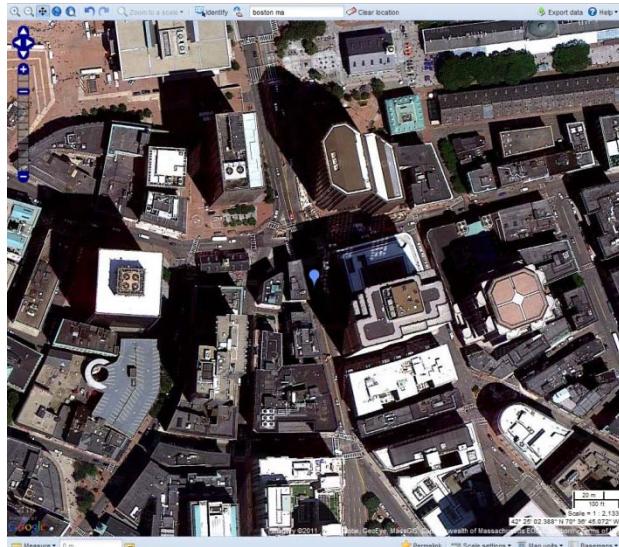


Metadata is text documentation about a data layer. Each available data layer has a metadata record. To view a data layer's metadata, right-click a data layer name in the "Available data layers" window or "Active data layers" window and click "View metadata." A pop-up window will appear with the data layer's metadata.

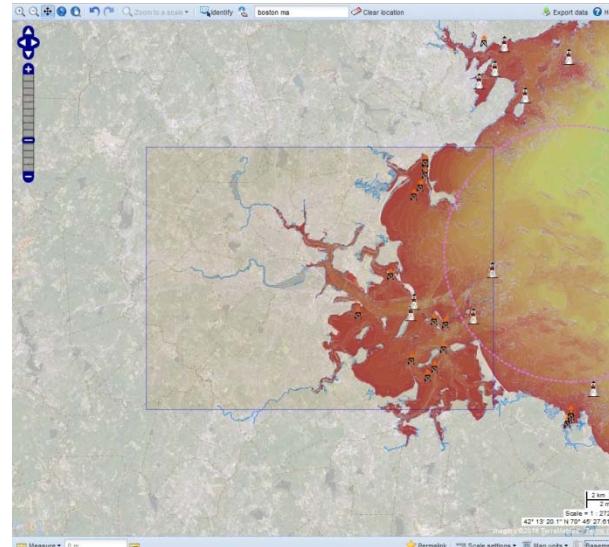
Searching for a Location



Zoom to center point



Zoom to region



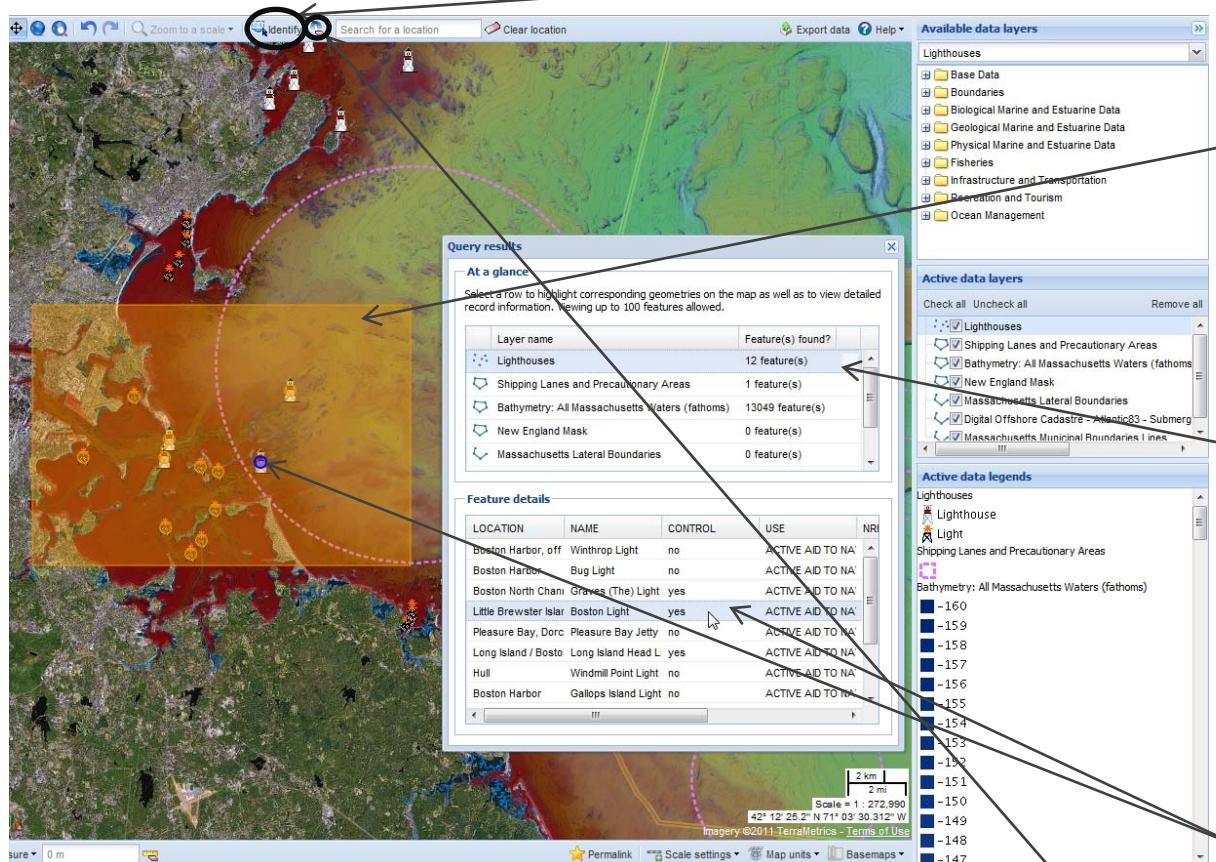
1. Type an address or location into the box and press enter to zoom to a location. The tool may be used to search a variety of locations, including street addresses, street intersections, municipalities, counties, and coordinates. This location search feature is provided by Microsoft Bing.

2. A pop-up window will appear with the location search results. Click "Zoom to center point" to zoom close to the results. A blue balloon is displayed at the center point of the location search results. Click "Zoom to region" to zoom to the region of the results. A blue rectangle is visible around the region of the search results.

3. Click "Clear location" to clear the location search results (the blue balloon or blue rectangle) from the map.

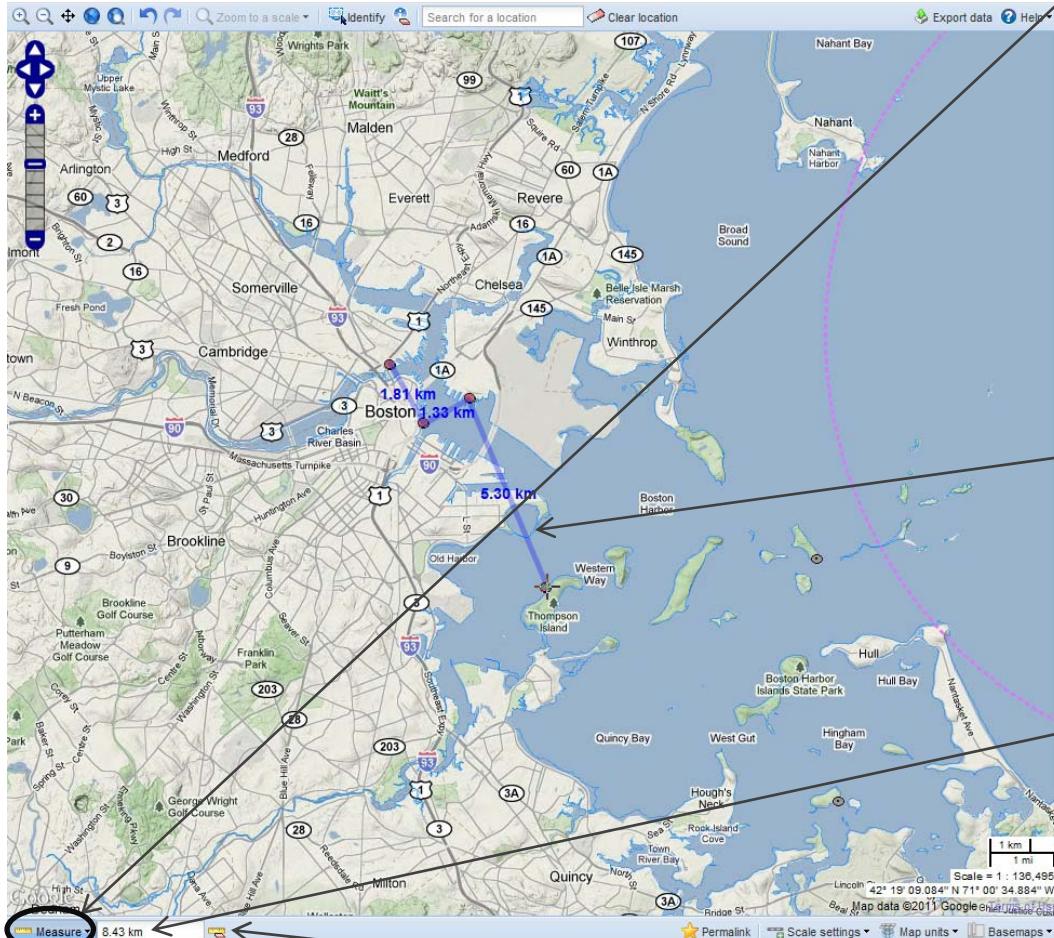


Identifying Features



1. Click the “Identify features by drawing a box” tool.
2. Click on the map, hold down the mouse button, and drag to draw a box to identify features of active data layers located within the box. This box will appear orange as you draw it.
3. A pop-up window will appear with the query results. You may view the attributes for up to 100 features per data layer. Click on the data layer name in the “Query results” table to view attributes for the data layer’s identified features.
4. Feature details for the selected data layer will appear. Right-click a column name to sort the attributes in ascending or descending order or to turn on or off a column. If a row is highlighted in the table, the corresponding feature will be highlighted in blue on the map. Hold the Shift or Ctrl button to highlight multiple rows. Right-click a row to zoom to a feature or clear a feature.
5. Click the “Clear identified features” tool or close the “Query results” window to clear the identified features and orange box from the map.

Measuring Length or Area



1. Click the “Measure” menu. The default is to measure length in meters/kilometers and area in square meters/kilometers. To change the unit of measurement, move the mouse cursor over “Units” to view a menu of measurement units options and click one of the listed units.

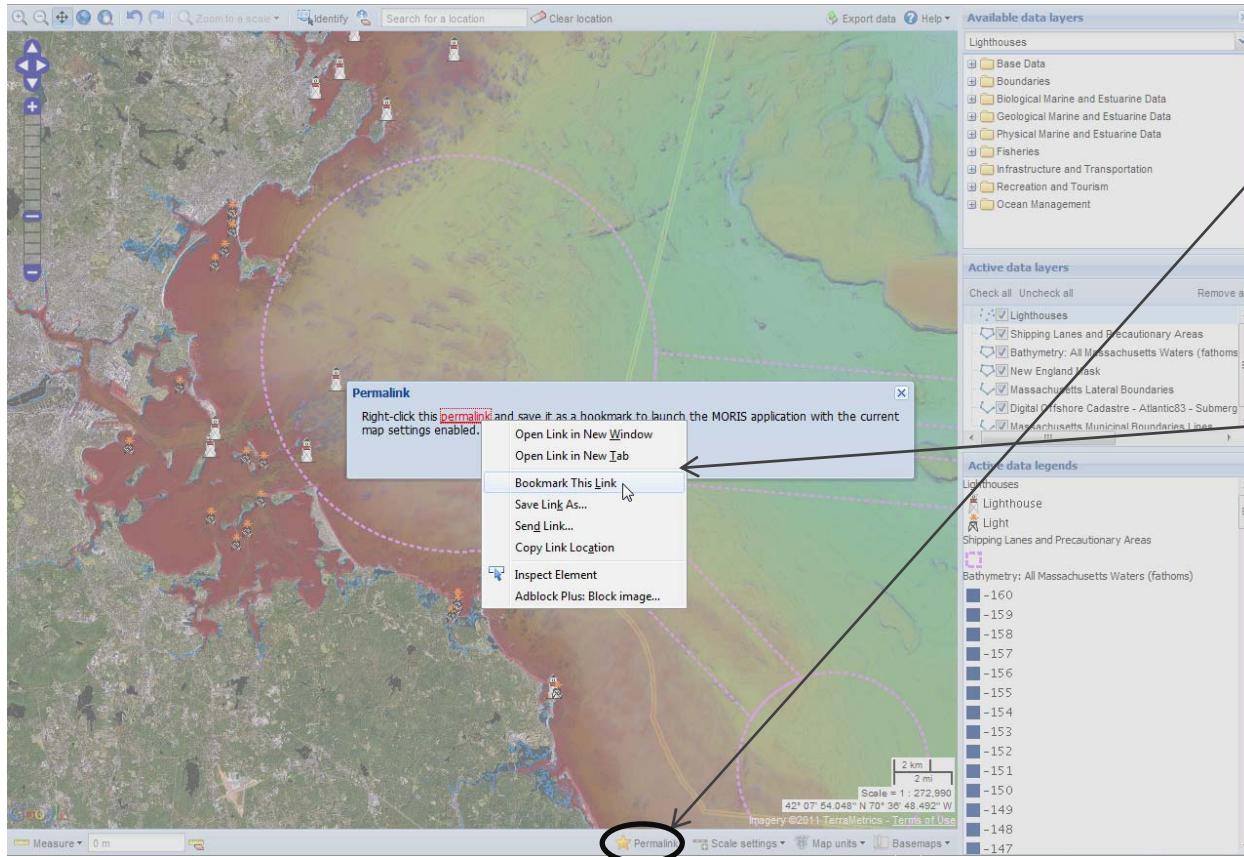


2. In the “Measure” menu, click “By length” to measure the length of a line, click on the map to draw vertices of the line, and double-click to finish drawing the line. Click “By area” to measure the area of a polygon, click on the map to draw vertices of the polygon, and double-click to finish drawing the polygon.

3. The results of the measurement will appear in the box next to the “Measure” menu. If measuring by length, the length of each line segment will be written on each segment on the map and the total length will be written in the results box.

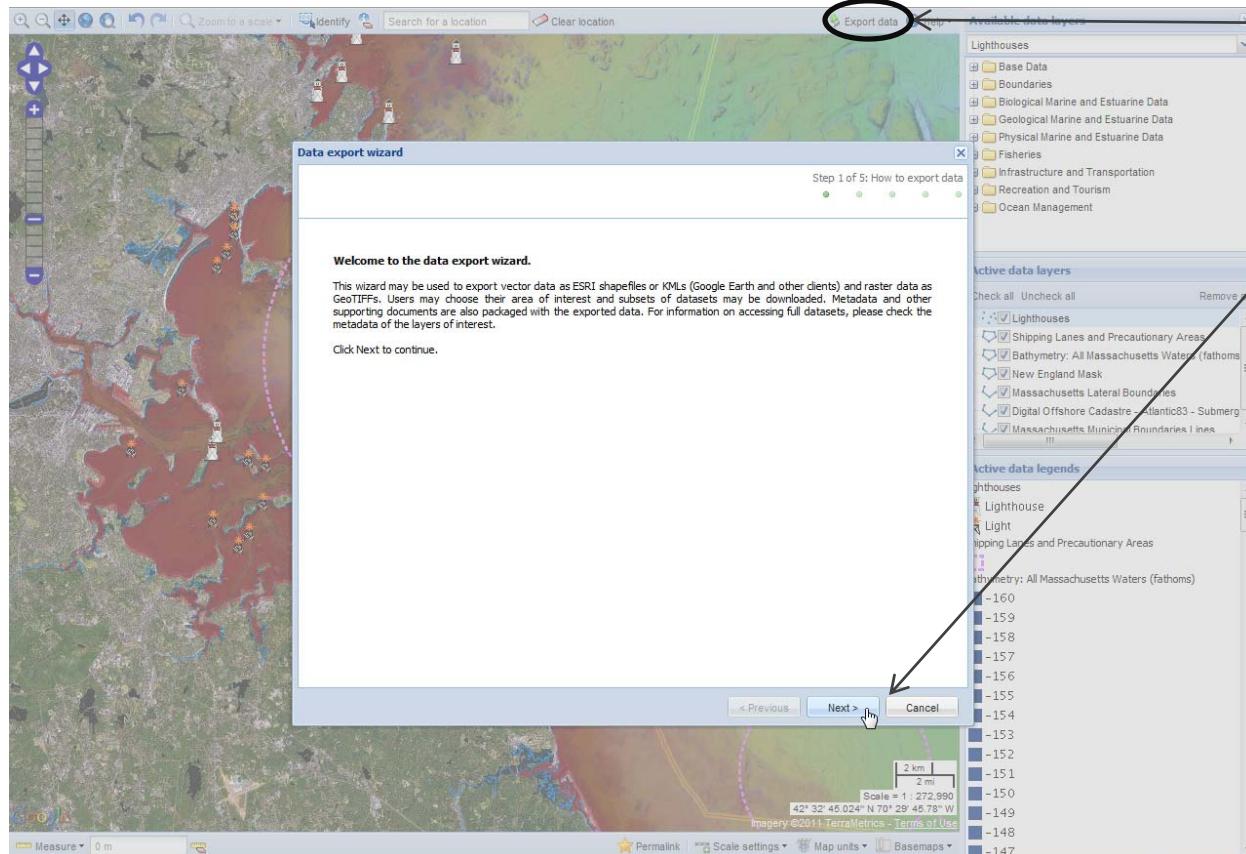
4. Click the “Clear measurement” tool to clear the measured line or polygon from the map and to clear the distance or area from the measurement results box.

Bookmarking/Sharing a Map



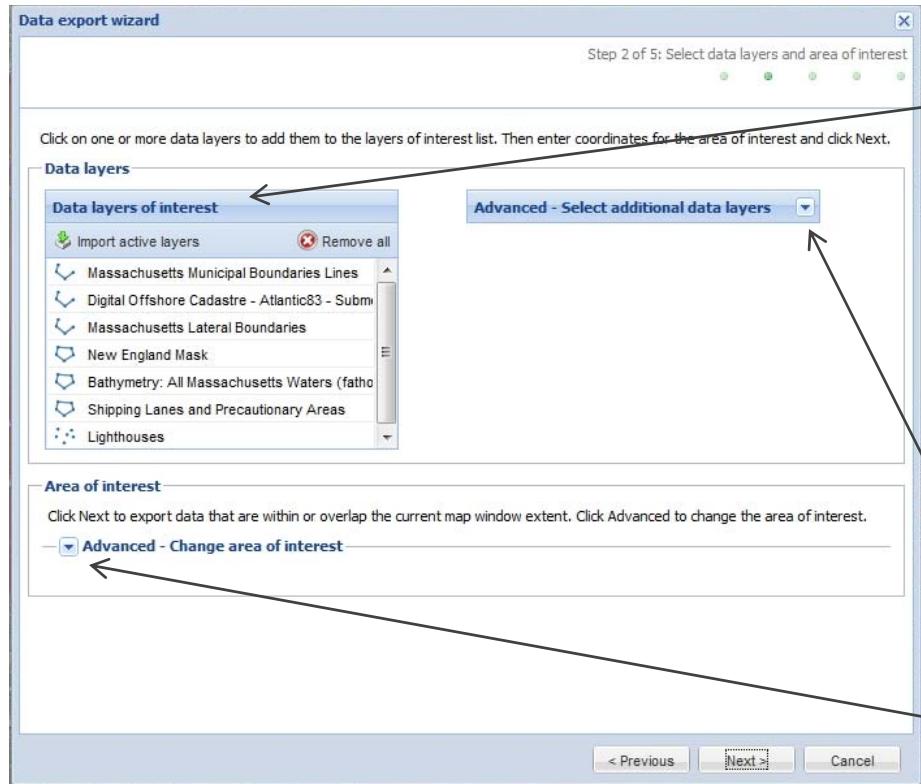
1. To create a bookmark to launch the application with the current map settings enabled, click the Permalink tool.
2. Right-click the blue permalink and see the options. In Firefox “Copy Link Location” will copy the URL to the clipboard. “Bookmark This Page” will create a Firefox bookmark. In Internet Explorer “Copy Shortcut” will copy the URL to the clipboard. “Add to Favorites” will create an Internet Explorer favorite. This URL may be saved as a bookmark in the web browser or shared with others in an email to launch the current map (includes data layers, extent, basemap, and map units only, but not selected features and opacity settings).

Downloading Data



1. Click the “Export data” tool.
2. The “Data export wizard” will appear in a pop-up window. Read the welcome paragraph and click “Next” to continue.

Downloading Data (continued)



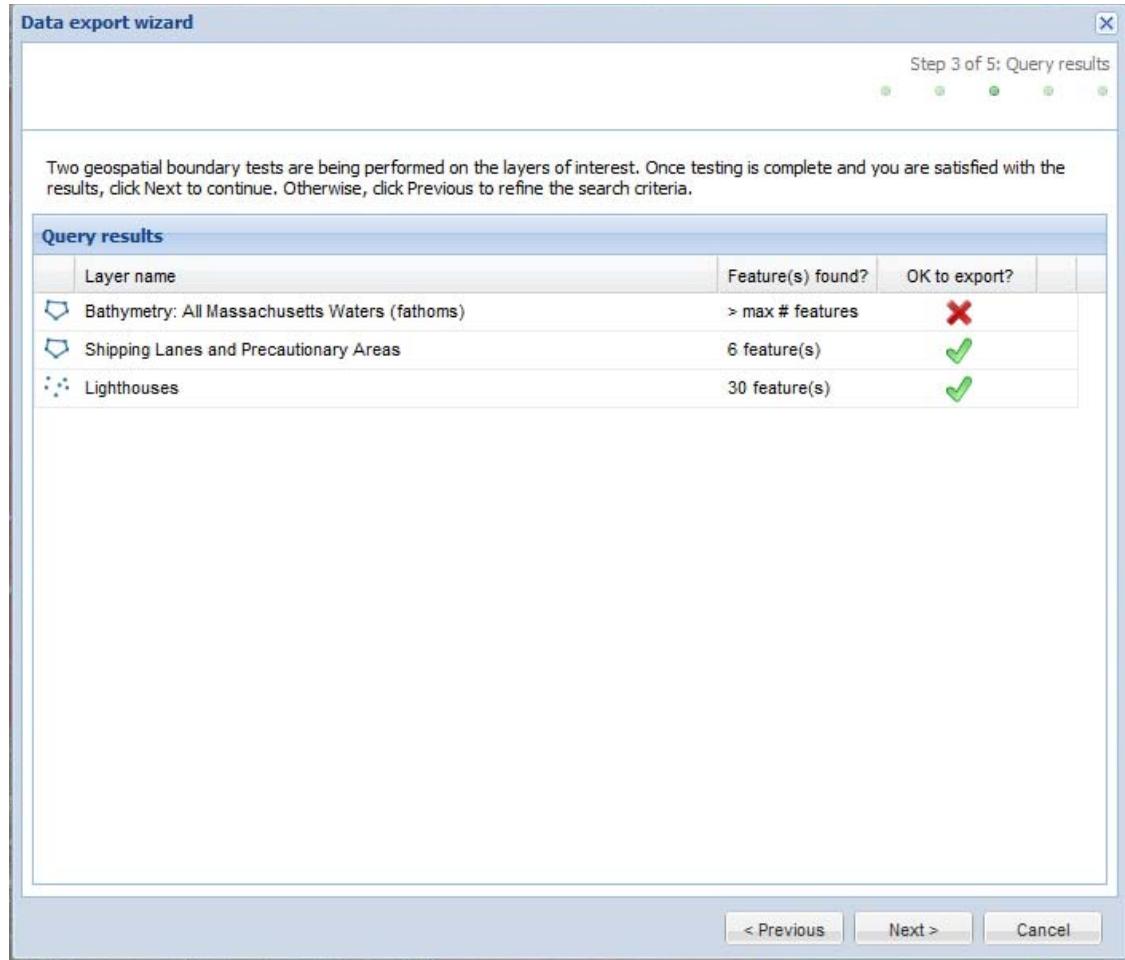
3. Data layers from the “Active data layers” window will appear in “Data layers of interest.” One or more individual data layers can be removed from this list by clicking the data layer name in the “Data layers of interest” table, right-clicking, and selecting “Remove layer(s).” Use the Ctrl button on your keyboard to select additional data layers to remove. To remove all data layers, click “Remove all.” Additional data layers not present on the current map can be added by using the “Advanced – Select additional data layers” drop-down menu.



Min X: -71 06 03.5579 Max X: -70 25 53.4322
Min Y: 42 07 52.2023 Max Y: 42 32 45.0106
Units: MA State Plane meters Decimal degrees Deg min sec
Import active map's bounding box

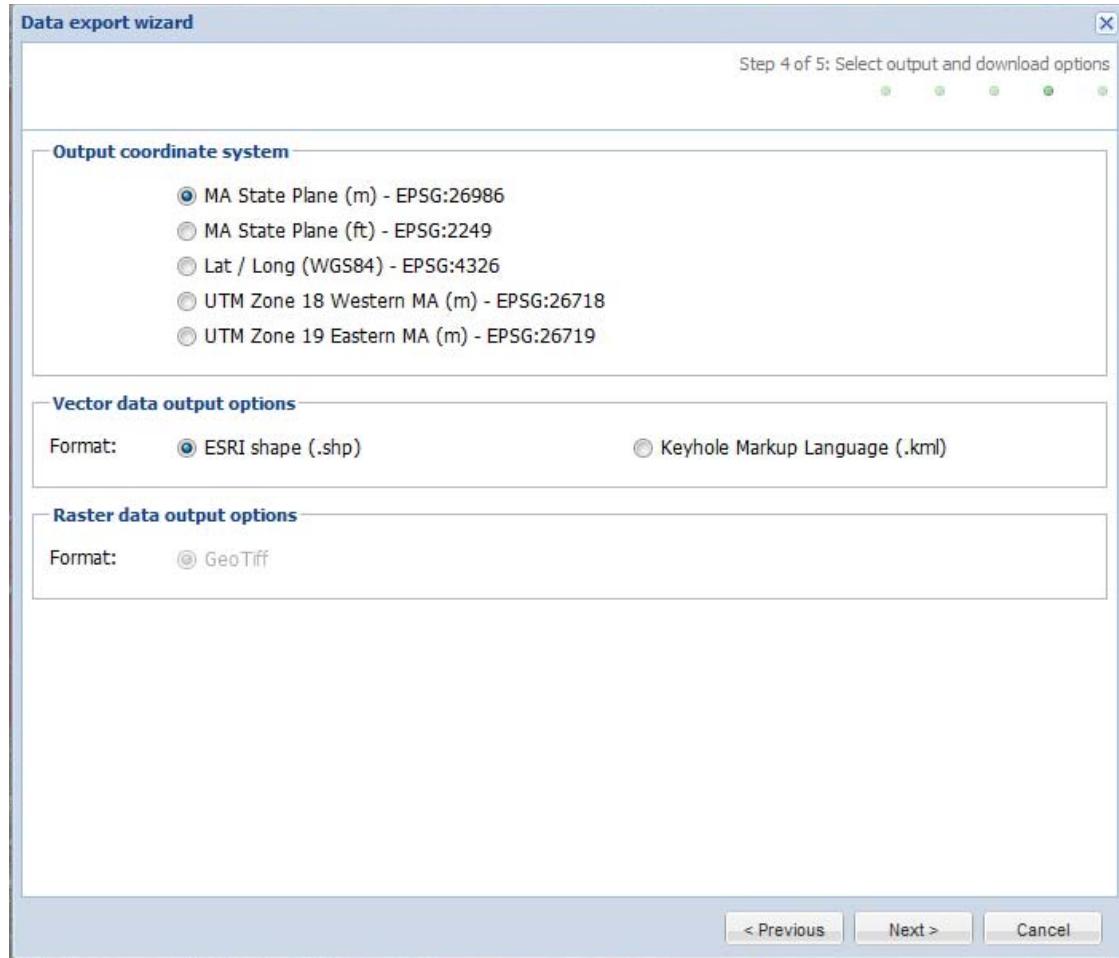
4. Click “Next” to export data that are within or overlap the current map window extent. Click “Advanced – Change area of interest” to change the area of interest. If changing the area of interest, select the units you would like to use (i.e., Massachusetts State Plane meters, decimal degrees, or degrees, minutes, and seconds). Then enter the Min X, Min Y, Max X, and Max Y coordinates you want to use to define your area of interest. If you prefer to go back to the original extent instead, select the “Import active map’s bounding box” button to import the current map extent. Click “Next” to continue.

Downloading Data (continued)



5. The “Query results” table lists the data layers for export and the number of features found for each data layer within your area of interest. A green check mark indicates that the data layer is okay to export. A red “X” indicates that the data layer will not download because zero features or greater than the maximum number of features allowed for download were found within your area of interest. Click “Next” to proceed.

Downloading Data (continued)

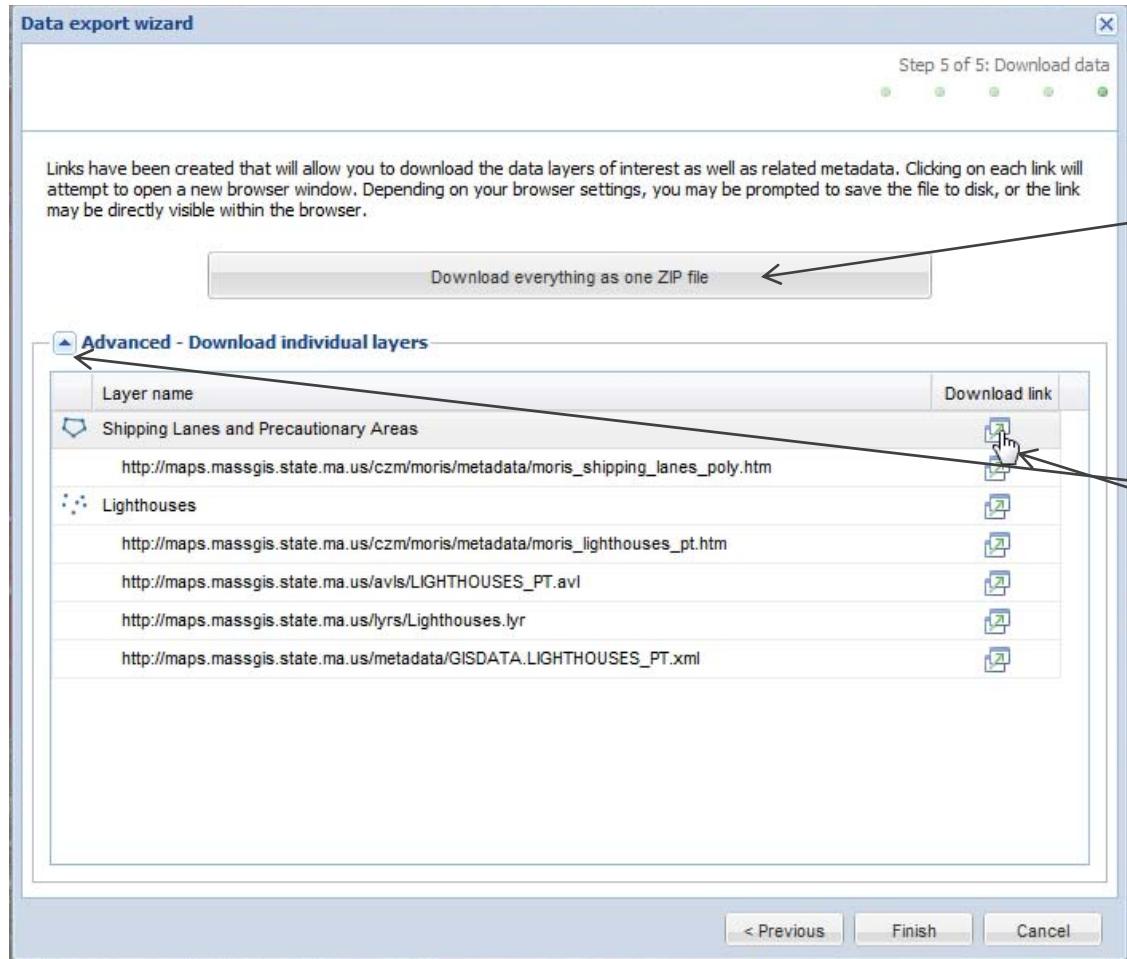


6. Select the output coordinate system for the data you are going to export. The default system is MA State Plane Mainland NAD83 (m) – EPSG:26986.

7. Select your preferred data output. The default format is ESRI shapefile (.shp) for vector data. Also available is Keyhole Markup Language (.kml). Please note that GIS data are not stored in the export KML files. Instead, a URL for MassGIS web services is embedded in each KML. MassGIS web services will retrieve the data specified when you open the KML in Google Earth. For raster data, the GeoTiff radio button will be selected by default, as this is the only raster format available at this time.

8. Click “Next” to continue.

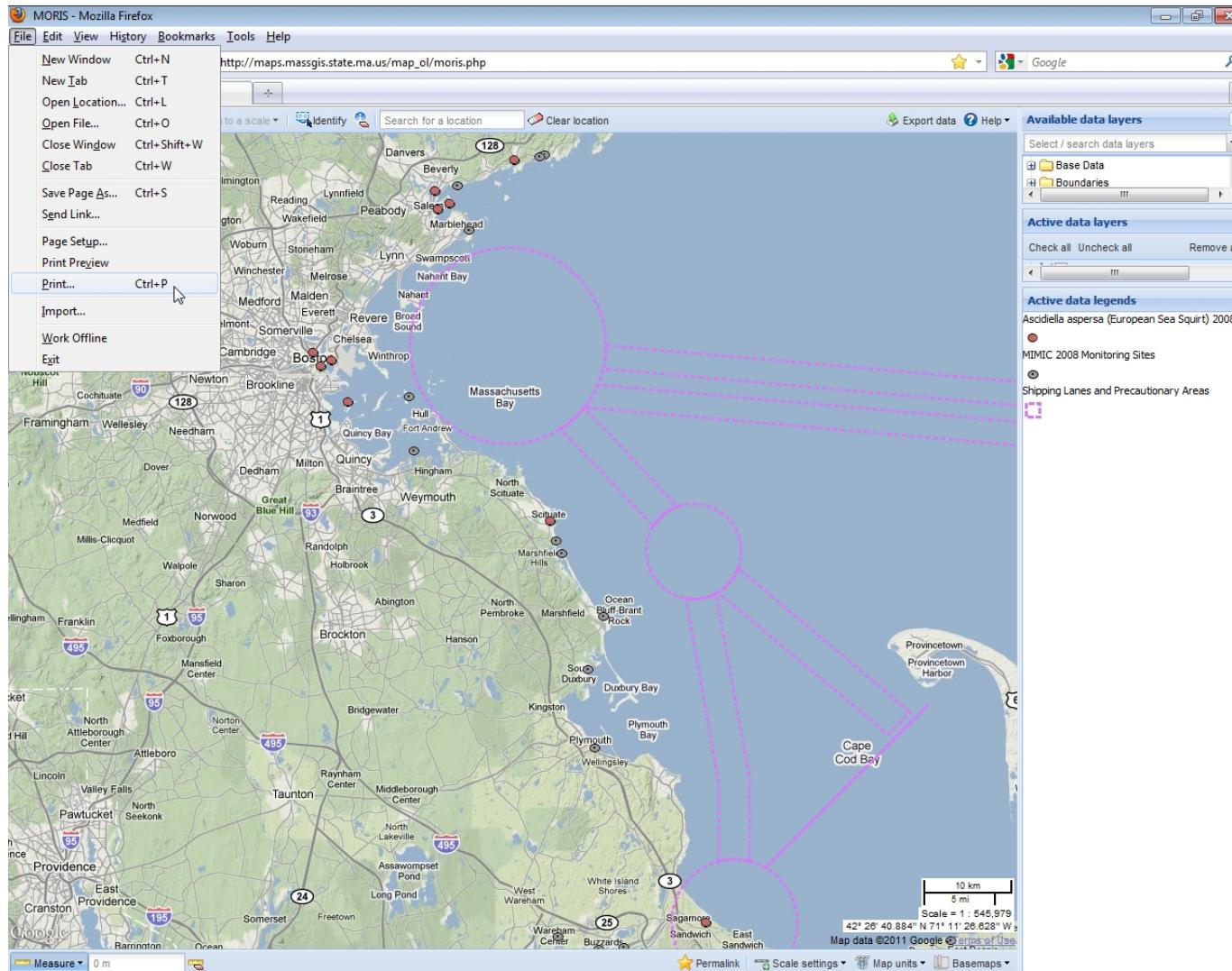
Downloading Data (continued)



9. You have the option of downloading everything as one ZIP file or of downloading individual data layers. If downloading everything as one ZIP file, click the “Download everything as one ZIP file” button, enter a name for the ZIP file, click “Download file,” click the blue “here,” and follow your browser instructions for saving the file. To download individual data layers, click the “Advanced – Download individual layers” drop-down menu. Click on the download link next to a data layer’s name to download that data layer’s shapefile. Click on the other download links below the data layer’s name to download the associated files (e.g., HTML metadata file, XML metadata file, symbology file, etc.). Follow your browser instructions to save the file to the desired directory.

10. Click “Finish” to close the data export wizard.

Printing and Saving a Map Image



There is currently no sophisticated print option. Printing from the browser is possible using the “File” menu and “Print” option. Use “Print Preview” to see the expected result. Choosing landscape orientation will work best. The three windows to the right of the map may be adjusted in size to, for example, make the legend area larger.

To insert an image of the map into other documents, capture a screenshot of the map. Press and hold Alt then press Print Screen (or PrtScn) on your keyboard to copy an image of your computer’s active window display to your clipboard. This image can be pasted into another software program, such as Microsoft Word.

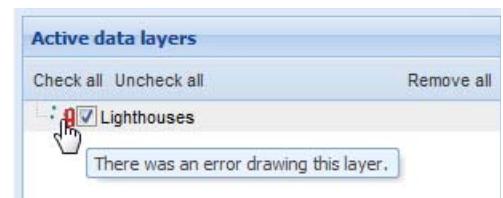
Problems? Questions? Comments?

Troubleshooting

If the map does not initially load in Internet Explorer, go to the “Tools” menu and click “Internet Options.” Click on the “Security” tab and click the button “Default level.” Click the “Apply” button and the “OK” button and then reload the MORIS page.

Errors Drawing Data Layers

If there is an error drawing a data layer, the data layer’s icon in the “Active data layers” window will have a red exclamation point. This red exclamation point indicates that the data layer is currently unavailable; this may be due to an internet connection or web services problem. Changing the map extent (e.g., panning), adding data, etc. will cause the data link to be refreshed. If this connection is restored, the red exclamation point will go away.



Please Report Problems and Give Feedback

To assist in the maintenance of these data, users are encouraged to report errors or omissions. To report a coastal data error, please contact CZM's GIS/Data Manager at daniel.sampson@state.ma.us. To report a non-coastal data error, please contact MassGIS' Education and Outreach Coordinator at paul.nutting@state.ma.us. We would also appreciate feedback, so please let us know of any suggested enhancements, bugs you experience, or any other comments you may have. To view a list of known problems or to check and see if a bug you experienced is documented, please see the [list of issues](#) on the [MORIS Google Code site](#).

Interested in learning more?

If you are interested in learning more about the technology behind MORIS, please view the MORIS developers documentation available at http://maps.massgis.state.ma.us/map_ol/moris_developers_documentation.htm.