

*Environmental Response  
Management Application (ERMA)*

# **User's Guide**

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# Introduction

## WHAT IS ERMA?

The Environmental Response Management Application (ERMA<sup>®</sup>) is a web-based geographic information system (GIS) tool that helps emergency responders and environmental resource managers deal with incidents that may adversely impact the environment. ERMA combines real-time and static data to display a single interactive map that makes it easy to visualize a situation.

Because ERMA is web-based, it offers the following advantages:

- It facilitates the integration and synthesis of various types of information.
- It provides a common operational picture to all individuals involved in a response.
- It improves communication and coordination among responders and stakeholders.

ERMA gives resource managers the information they need to make informed decisions when dealing with an incident. The maps it generates are worth the proverbial “thousand words” when communicating the status of response activities.

## WHAT’S IN THIS USER GUIDE?

This guide gives an overview of how ERMA works, and then describes how to use the different parts of ERMA’s user interface.

The guide contains these sections:

- [ERMA Basics](#) gives an overview of ERMA, including a brief history of the system’s origins and a discussion of ERMA’s software architecture.
- [Using the ERMA Window](#) explains how to use ERMA’s navigation controls, tool tabs, and display controls.
- [Layers Tab](#) describes the types of layers that ERMA uses, and provides basic information and procedures for working with layers.
- [Legend Tab](#) explains how to interpret the symbols displayed on the ERMA window.
- [Query Tools Tab](#) describes how to create and edit polygons that you can use to analyze the data available for an area. It also tells how to access data in the NOAA Environmental Sensitivity Index (ESI) maps and in the U.S. Fish and Wildlife Service Information, Planning, and Conservation Tool (IPaC).
- [Zoom Tab](#) describes the tools you can use to zoom in on specific map locations or on pre-selected groups of layers (called *bookmarks*).
- [Download Tab](#) tells how to save ERMA data to your computer.
- [Print Tab](#) tells how to print maps displayed by ERMA.

# ERMA Basics

ERMA is an online mapping tool and data management platform that integrates real-time data (such as ship locations, weather, and currents) and static data in a centralized, easy-to-use format, acting as a “one-stop shop” for spill response information. ERMA gives environmental responders and decision-makers ready access to data relevant to spill drills, planning, response, assessment, and restoration, as well as for other incidents and natural disasters. The system incorporates data into a fast, user-friendly Geographic Information System (GIS) that can be accessed by a command post and by people in the field and at other locations.

ERMA was developed by the National Oceanic and Atmospheric Administration (NOAA) and the University of New Hampshire with the Environmental Protection Agency, U.S. Coast Guard, and the Department of the Interior in a cross-agency effort.

## ERMA’S ORIGIN: A REGIONAL FOCUS

ERMA projects are focused on specific regions. Currently, ERMA projects exist or are in development for the Gulf of Mexico, New England, the Pacific Islands, the Pacific Northwest, the Southwest, the Alaskan Arctic, the Caribbean, and the Great Lakes.

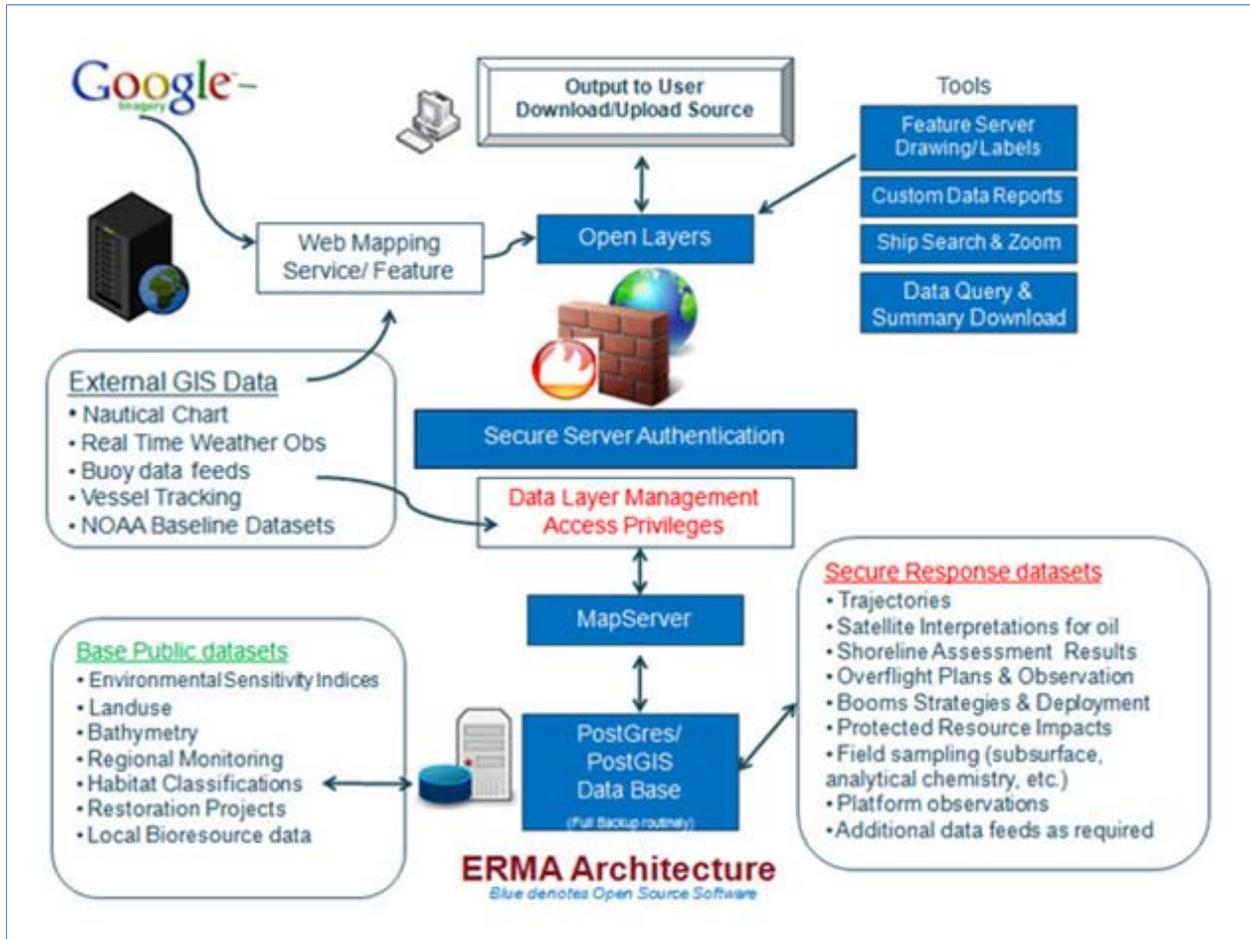
The ERMA pilot was developed for Portsmouth Harbor, New Hampshire. This area was chosen for its proximity to the University of New Hampshire and because of its diverse shoreline development, which includes industrial and residential areas, protected habitats, and tourist/recreational use. Another important reason for selecting Portsmouth Harbor was the active partnership between response agencies, industry, and nongovernmental organizations in New Hampshire and Maine. As a result of these partnerships, existing spatial information (including environmental datasets, habitat classifications and species distributions, navigational charts, high resolution bathymetry, meteorological observations, and trajectory and forecast models) was leveraged to create a response-driven, web-based GIS data management and analysis tool—ERMA. The pilot was tested during area response drills, where it proved effective at providing data transparency while maintaining ease of operation by multiple users.

## MAKING ERMA GO: THE TECHNOLOGY THAT POWERS ERMA

ERMA is an integrated data management system that incorporates static base layers along with real-time streams of data (such as weather, tides, and ship tracking data) into a fast, user-friendly Geographic Information System (GIS) that is accessible to the command post as well as people in the field and other locations. ERMA enables a user to quickly and securely upload, manipulate, export, and display spatially referenced datasets, producing a high-impact and fine-resolution visualization of integrated data that can be used to solve complex environmental response and resource issues.

ERMA is designed to store, query, and display spatially referenced data for solving complex questions. The application is based on Open source software (PostgreSQL/PostGIS, MapServer, and OpenLayers), ensuring compatibility with other commercial and Open source GIS applications. By overlaying diverse spatial datasets, the user can see the full spectrum of an incident including potential interactions (oil trajectory and resources at risk, for example).

The illustration below shows ERMA's basic software architecture and data flows.



# Using the ERMA Window

ERMA data is accessed and displayed using the ERMA window. This section tells how to use the map and map toolbar, the tool tabs, the display controls, and the other elements of the window.

## MAP CONTROLS

The Map Controls are located in the upper-left corner of the map. It contains the following controls.

	<p><i>Navigation Control</i></p> <p>Lets you move the entire map north, south, east, or west.</p> <p>To move the map, click the compass point for the desired direction (north, south, east, or west). Keep clicking until the map is where you want it. You can see the latitude and longitude of the new map center in the Map Key at the bottom of the ERMA window.</p>
	<p><i>Zoom Level Control</i></p> <p>Lets you zoom in and out of the map to increase or decrease the zoom level, showing more or less detail.</p> <p>To zoom, click the plus or minus sign on the Zoom Level Control until you've reached the desired zoom level. You can see the new zoom level and map scale in the Map Key at the bottom of the ERMA window.</p>

## MAP TOOLBAR

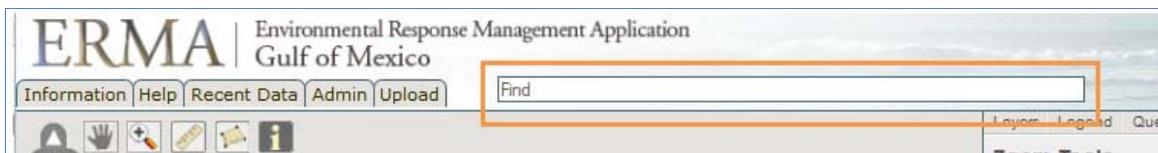
The Map Toolbar is located just to the right of the Map Controls. It contains the following controls and tools.

	<p><i>Pan Tool</i></p> <p>Lets you reposition the map by clicking on a spot and dragging the map.</p> <p>To reposition, select the <b>Pan Tool</b> icon and then click a spot on the map. Hold down your mouse button and drag the map until you have the view that you want. (This tool is selected by default.)</p>
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	<p><i>Magnifier Tool</i></p> <p>Lets you re-center the map on any desired point and then zoom in on that spot.</p> <ul style="list-style-type: none"> <li>• To re-center, click the <b>Magnifier Tool</b> icon and then click anywhere on the map. Each successive click zooms in on the map's new center.</li> <li>• To zoom in on a specific area, click the <b>Magnifier Tool</b> icon and then use your mouse pointer to draw a box around the area of interest. When you release the mouse button, ERMA zooms the map in on the area you selected.</li> </ul> <p>You can see the zoom level, map scale, and the latitude and longitude of the map's new center in the Map Key at the bottom of the ERMA window.</p>
	<p><i>Measurement Line</i></p> <p>Lets you draw a line on the map to measure distances.</p> <p>To draw a line, click the <b>Measurement Line</b> icon and then click the point on the map where you want the line to start. If you single-click at another point, you can continue the line in another direction. Double-click when you want to end the line. You can see a running total of the line's length in the Map Key at the bottom of the ERMA window.</p>
	<p><i>Measurement Polygon</i></p> <p>Lets you draw a polygon on the map to measure areas.</p> <p>To draw a polygon, click the <b>Measurement Polygon</b> icon and then click a point on the map. Move the mouse pointer until you reach the first vertex of the polygon and click again. You can now move the pointer in another direction to create the next side of the polygon. Repeat this process until you've enclosed the desired area, and then double-click on the final vertex to complete the polygon. You can see the area enclosed by the polygon in the Map Key at the bottom of the ERMA window.</p>
	<p><i>Identify Tool</i></p> <p>Lets you select a point on the map and see attribute information for the layers that are turned on at that particular location.</p> <p>To see the attribute information, turn on one or more layers. Click the <b>Identify Tool</b> icon and then click the desired point on the map. Attribute information will appear in a pop-up window.</p>

## FIND BOX

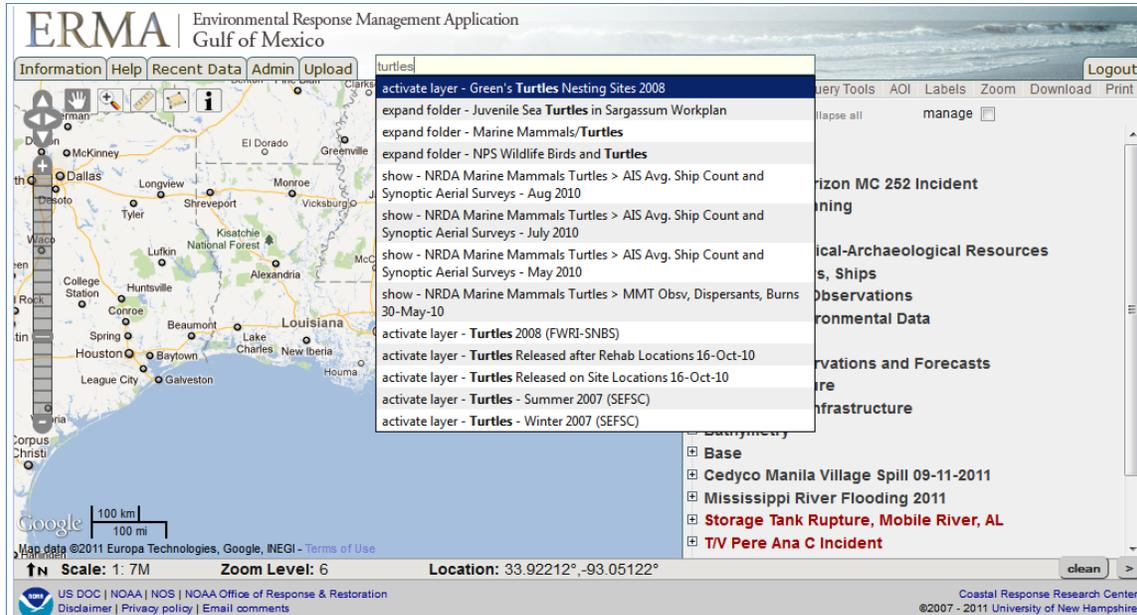
The Find Box is located at the top-center of the ERMA window.



This tool is useful when you want to search for layers, groups of layers (folders), or bookmarks of interest without having to look through multiple folders. Instead, you can enter a word or phrase into the Find Box and see a list of all layers that contain the search term in their name. The search term you enter must contain at least three characters.

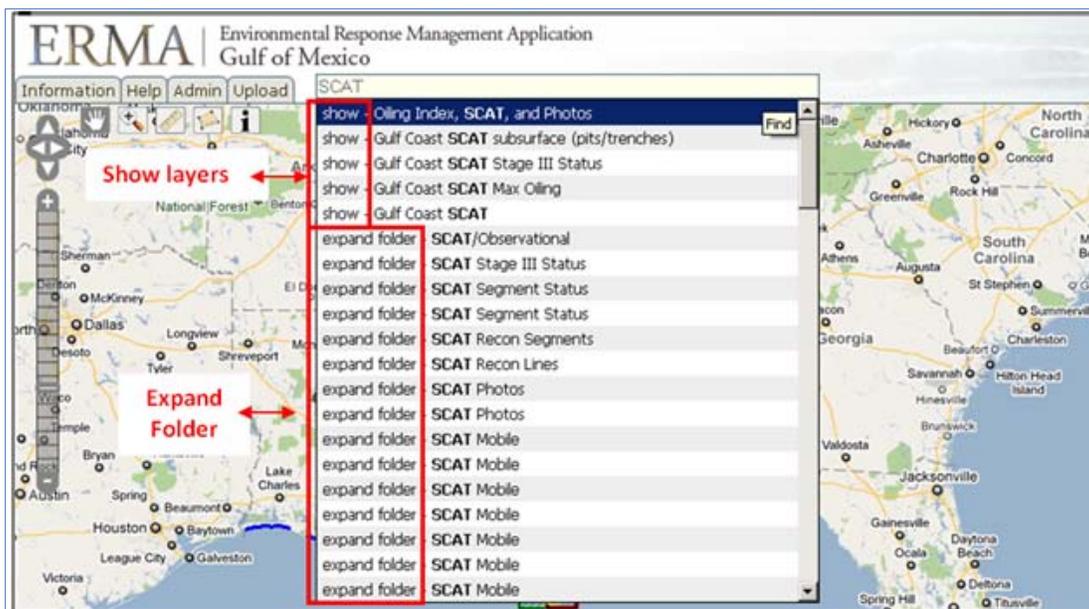
To use the Find Box to search for information in ERMA:

1. Type the word or phrase that you are interested in. A list of relevant folders, layers, and bookmarks appears in a drop-down list.



2. You can now do any of the following:

- Select an item starting with *activate layer*. That layer is activated, and the data it contains is available for analysis on the map.
- Select an item starting with *show*. A pre-selected group of layers (called a *bookmark*) is displayed on the map.
- Select an item starting with *expand folder*. That folder will be expanded on the Table of Contents, allowing you to look through the folder for other layers that may be helpful.



## TOOL TABS AND TABLE OF CONTENTS

The Table of Contents takes up a large area on the right side of the ERMA window. The TOC displays tabs for tools that let you create, manage, and analyze ERMA data. Access to these tools is controlled by the Tool Tabs, which are located at the top of the TOC, just below the Find Box and Login/Logout.

The Tool Tabs let you access the tools available on the Table of Contents.

- **Layers** tab.  
Lets you view, create, and manage the layers of information that can be displayed on the map. For more information, see "[Layers Tab](#)" on page 14.
- **Legend** tab.  
Helps you interpret the symbology used in the layers displayed on the map. Legend information is generated or updated each time you create or edit a layer. For more information, see "[Legend Tab](#)" on page 18.
- **Query Tools** tab.  
Lets you create and edit polygons on the map and then analyze the data available for that area. It also lets you access data in the NOAA Environmental Sensitivity Index (ESI) maps and in the U.S. Fish and Wildlife Service Information Planning and Conservation Tool (IPAC). For more information, see "[Query Tool Tab](#)" on page 19.
- **Zoom** tab.  
Lets you zoom in on a particular location by latitude and longitude; by the place name; by ship identification number; or by bookmarks and animations. For more information, see "[Zoom Tab](#)" on page 26.
- **Download** tab.  
Lets you download ERMA shapefile information to your computer. For more information, see "[Download Tab](#)" on page 30.
- **Print** tab.  
Lets you print a copy of the map displayed in the ERMA window. For more information, see "[Print Tab](#)" on page 31.

## GROUP/LAYER MENU

This menu appears when you right-click on the name of a selected layer, and it lets you perform specific operations on that layer, such as zooming to the layer's extent or displaying metadata. The active commands on this menu vary from layer to layer.

## DISPLAY CONTROLS

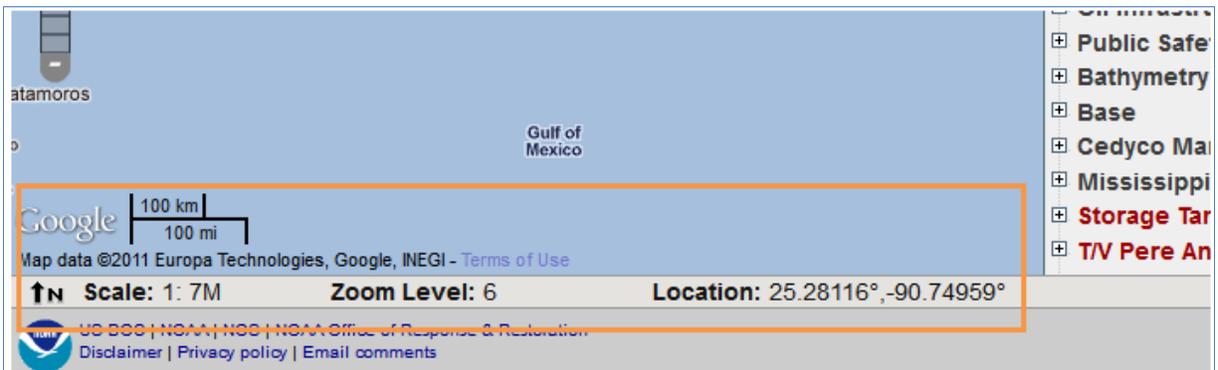
The Display Controls are two buttons located in lower-right corner of the ERMA window.



	<p><i>Clean</i></p> <p>Lets you display the ERMA map without most of the controls, tabs, and buttons that appear by default. (Only the Map Key stays visible.) This is especially useful when taking screen shots or preparing a map for a presentation.</p> <p>To restore the hidden elements, click anywhere on the ERMA window.</p>
	<p><i>Hide/Display TOC</i></p> <p>Toggles the display of the Navigation tabs and Table of Contents (TOC) and expands the map to fill the full ERMA window.</p>

## MAP KEY

The Map Key is located below the map in the ERMA window.



The Map Key has the following elements:

- A *graphic scale* showing how many feet/miles or meters/kilometers are represented by a set length on the map.
- A *north arrow* pointing to the map's northerly direction.
- *Scale*: A fractional scale showing the ratio between a set length on the map and the real-world distance that this length represents. In the illustration above, one unit on the map represents 7 million units in the real world.

- *Zoom Level*: The zoom level for the current map display, as set on the Zoom Level control. Levels range from 0 (zoomed out to show the full map) to 19 (zoomed in as far as possible).
- *Location*: The location indicated by the mouse pointer, to an accuracy of 1/100000 of a degree.

Except for the north arrow, all of these elements update automatically to reflect changes in the zoom level or movement of the mouse pointer.

# Layers Tab

An important way that ERMA manages information is through the use of *layers*. Each layer includes a particular combination of georeferenced data (such as feeds, shapefiles, photos, or a combination of these types). This section describes the different types of layers used by ERMA, and gives basic instructions for working with them.

## LAYER TYPES

These types of map layers can be created and displayed in ERMA:

- WMS Internal from a shapefile
- WMS External
- GeoRSS Internal
- GeoRSS External
- ArcGIS Rest
- Animations

Currently, ERMA can display geospatial information from two forms of source data (often described as *feeds*):

- Web Mapping Services (WMS)
- GeoRSS
- ArcGIS Map Server

## Internal Layers

Internal layers—WMS Internal and GeoRSS Internal—are created within ERMA from data uploaded by ERMA technical users. (These are users who have the ability to create and modify layers in ERMA.)

- A WMS Internal layer is created by ERMA when a shapefile is uploaded. ERMA imports the shapefile into a PostGIS database and then creates a MapServer map file using the symbology information entered by the user on various web forms. This map file provides the information (symbology, data location, etc.) for a WMS feed that is displayed by the ERMA layer. Because the source geographic and attribute information for WMS Internal layers is stored in ERMA's PostGIS database, these layers can be queried using the Query Tool, and exported and downloaded from ERMA.
- A GeoRSS Internal layer is created when a user provides individual latitude/longitude coordinates for features of interest, or uploads a group of photos in a designated (NOAA PhotoLogger) format.

## External Layers

External layers—WMS External, GeoRSS External, and ArcGIS Map Server—are created from external WMS, GeoRSS, or ArcGIS Map Server feeds accessed via a web URL.

- ERMA displays OGC (Open Geospatial Consortium) compliant WMS feeds. Requirements for an external WMS feed to be used in ERMA are covered in a separate document.
- An ArcGIS Rest layer is created when a user provides a web link (URL) to the layer’s location on the ArcGIS service and the numeric IDs for each of the ArcGIS Rest layers that the new layer will display.

## Animation Layers

Animation layers can be created from a sequence of ERMA layers (WMS or GeoRSS), regardless of type. For more information, see “[Zooming Using Bookmarks and Playlists](#)” on page 28.

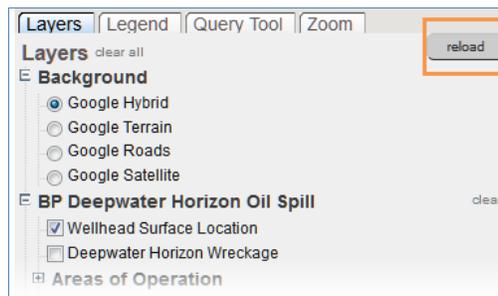
## WORKING WITH LAYERS

### Opening Folders and Activating Layers

- Click the plus-sign next to a folder to open it. Click the minus-sign to close the folder.
- Select the check box next to a layer name to make that layer active.

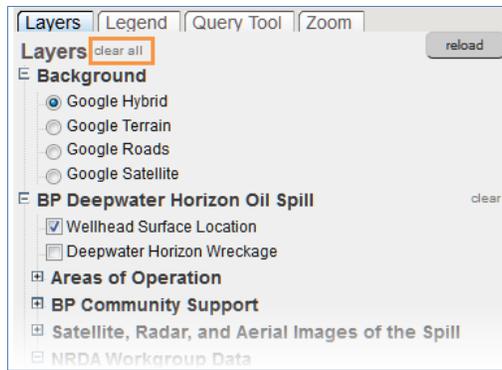
### Reloading Layers

To reload all of the layers that are currently active, click **Reload**.

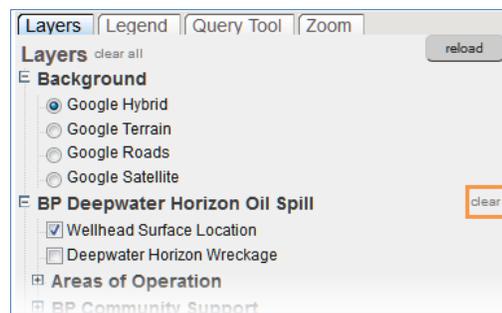


### Turning Off Layers

- To turn off all of the layers that are currently active, click **Clear All**.



- To turn off the layers in a top-level folder, click **Clear**.



## Zooming to the Layer's Extent

ERMA lets you zoom the map to show the full extent of the data in a layer that you are interested in.

To zoom to a layer's extent:

1. Select the check box next to the layer name to turn it on.
2. Right-click on the layer name and select **Zoom to Extent** from the menu.

## Viewing PDF and Video Files

Some layers have additional information that is presented in video or PDF files.

- Click the **Movie** icon  to play a video file depicting that layer's information.
- Click the **PDF** icon  to open a PDF file that contains information about the layer.

## Viewing Layer Attributes

To learn about a specific layer's attributes, click the **Identify Tool** icon on the Map Toolbar, and then click on the feature or area of interest. Data will appear in a pop-up window.

## Changing the Background Map

The Background folder contains a list of available map backgrounds. The current options are Google Hybrid, Google Terrain, Google Roads, and Google Satellite.

To use a background on the map, click the radio button next to its name.

## Viewing Metadata

Metadata is descriptive information about a layer that is created when the layer is uploaded to ERMA. It includes:

- The layer's folder location and name.
- The date and time when the layer was uploaded.
- A link to full metadata for the layer.
- The name of the shapefile.
- The layer's geometry type.
- Any text entered in the **Metadata** field at the time the metadata was uploaded.

The illustration below shows a typical example of metadata.

```
Parent Group: BP Deepwater Horizon Oil Spill>Response Operations>Dispersant
Operations
Layer Name: Aerial Dispersant Envelope
Date Added to GeoPlatform: 11/22/2011 3:11 pm
Full Metadata: /layerfiles/18105/metadata/dispersant\_envelope.htm
Shapefile: Dispersant_flights_Envelope_112211
Geometry: POLYGON
Additional Information: The aerial dispersant envelope shows the bounding box for
all locations where aerial dispersants were applied. Aerial dispersants were applied
between April 22 to July 19, 2010. This layer was created using the daily aerial
dispersant flight paths. The aerial flight paths were generated during the response and
sometimes contained estimated locations of where the dispersant was applied.
Additionally, a few flights recorded their entire flight path instead of where dispersant
was applied. Minor edits have been made to reduce the error of these flight paths.
Therefore this layer is an estimation of where all the aerial dispersants have been
applied.
```

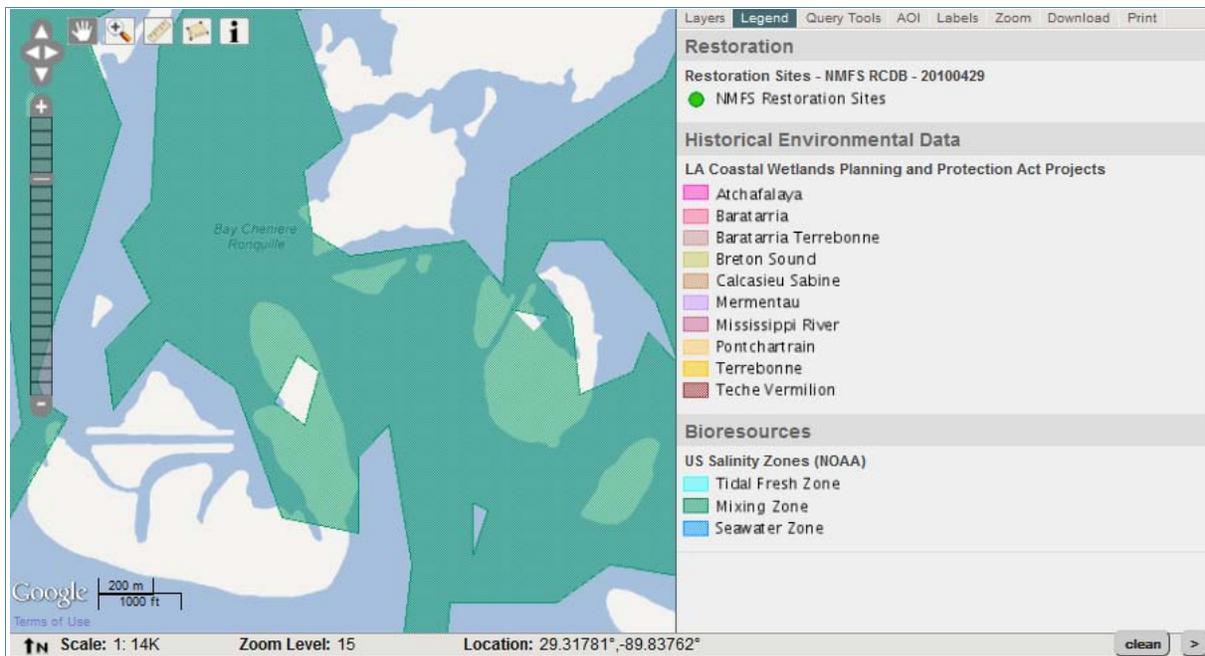
To view a layer's metadata, do either of the following:

- Click on the layer name.
- Right-click on the layer name and select **Open Metadata** on the menu that appears.

# Legend Tab

The Legend tab explains the symbols used on the map to represent information. These colors and shapes help users to understand what they are seeing on the map.

Legend information is automatically generated or updated each time a layer is created or edited. Legend styles are populated from the styles that are set for a particular layer.



# Query Tool Tab

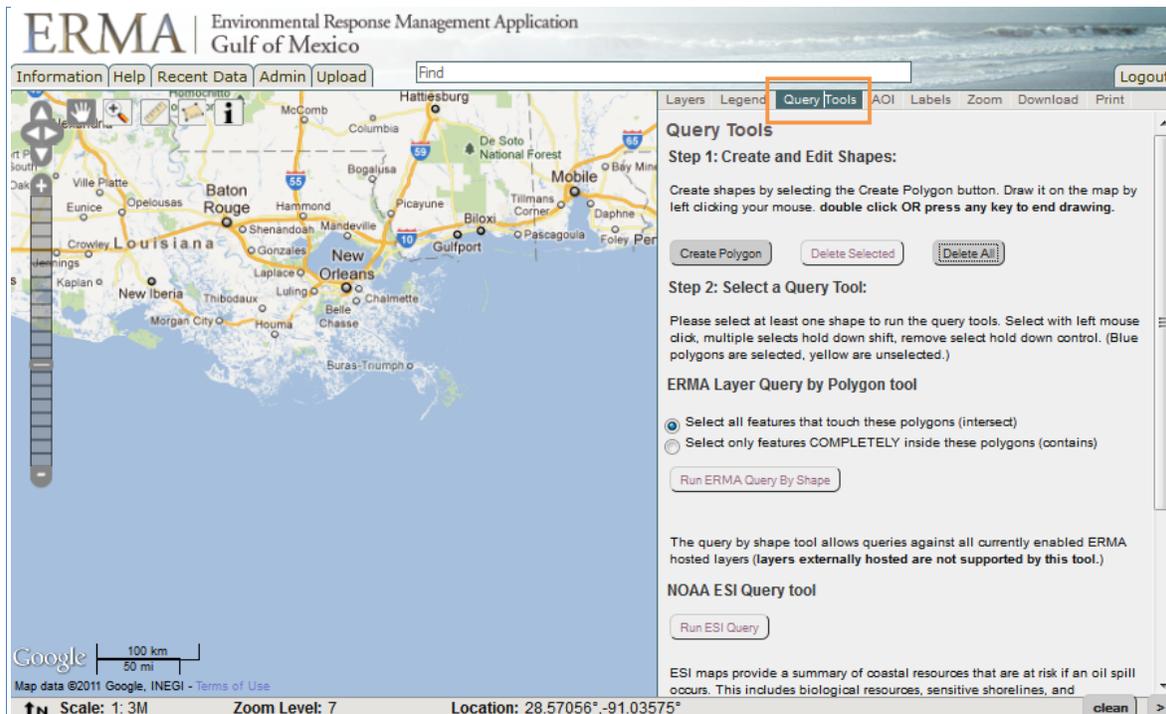
ERMA has a tool that lets you select specific portions of the map by drawing a polygon around them. Once you draw the shape, you can analyze data using any of the query tools described in this section.

## CREATING AND DELETING POLYGONS

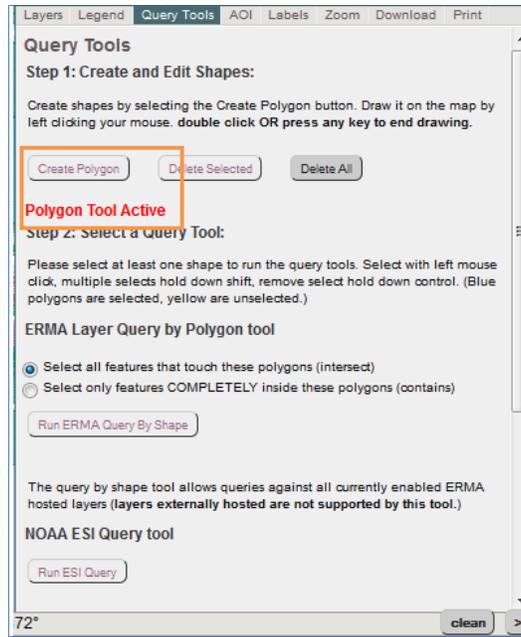
### Creating a Polygon

To create a shape on the map:

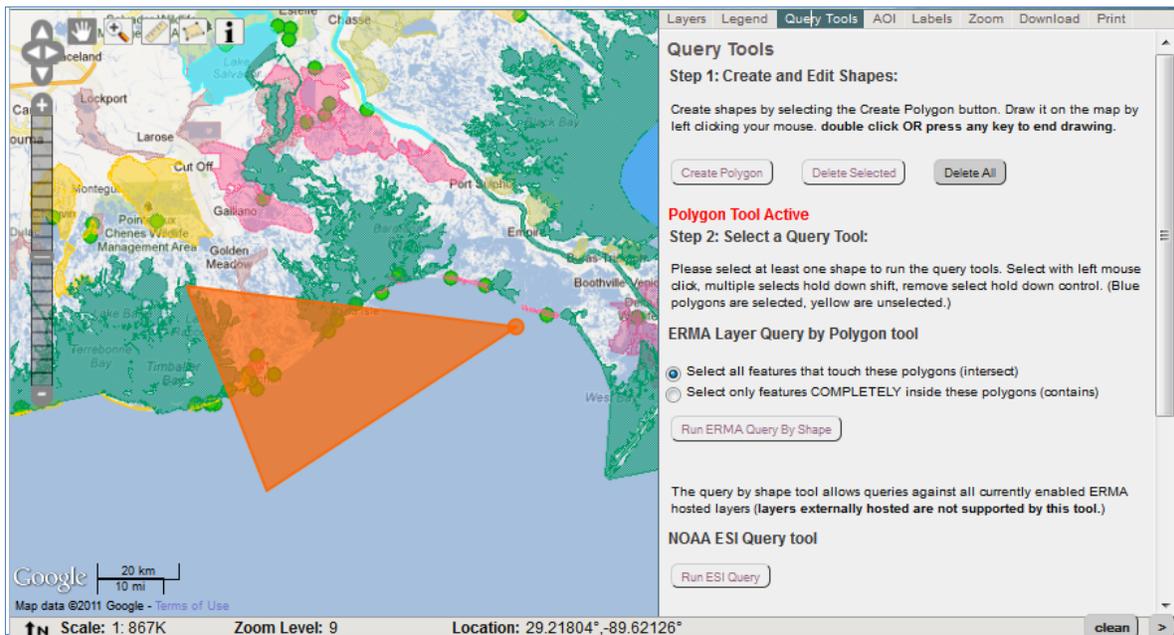
1. On the ERMA window, click the **Query Tool** tab.



2. Click **Create Polygon**. A message tells you that the Polygon Tool is active.



- To begin a polygon, click on a spot on the map and then move the mouse pointer to draw the polygon's first side. For each additional side, click again and draw the new side.

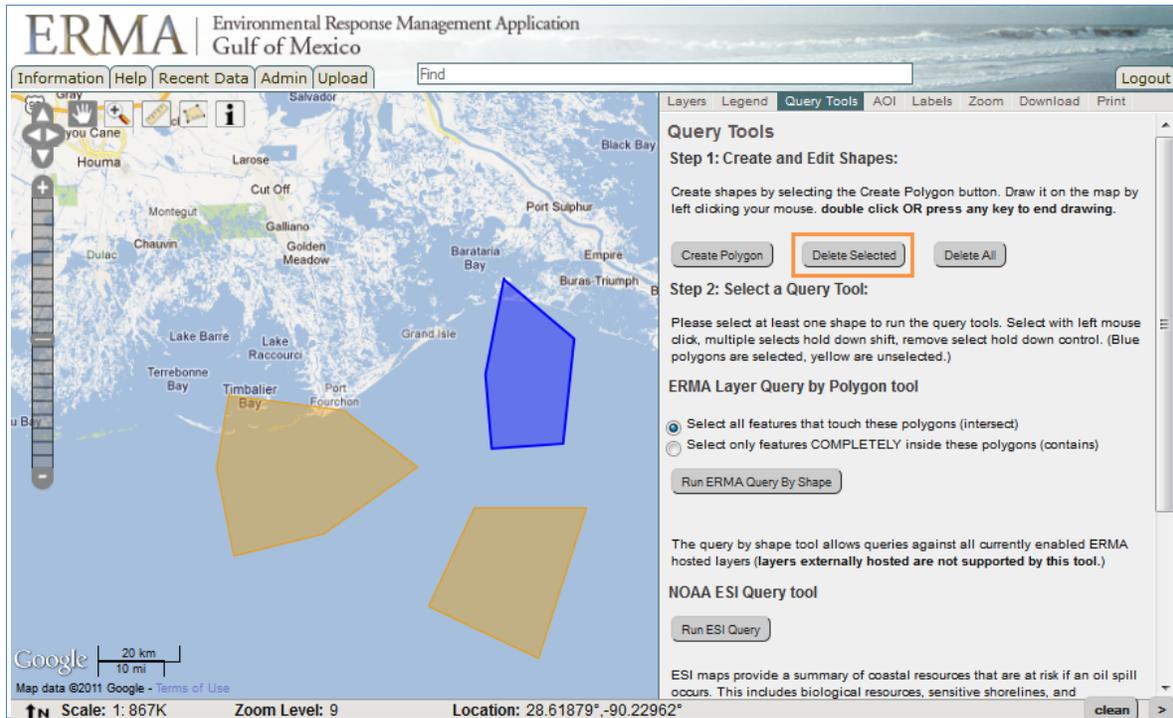


- When the polygon is the shape that you want, double-click or press any key to turn off the Polygon Tool.
- Repeat steps 2 through 4 for each additional polygon.

## Deleting Polygons

To delete a single polygon:

1. Click on the polygon that you want to delete. That polygon will turn (or remain) blue; all of the other polygons will turn orange.



2. Click **Delete Selected**. The selected polygon disappears from the map.

To delete all of the polygons on the map:

Click **Delete All**.

## USING POLYGONS TO VIEW AND ANALYZE DATA

ERMA gives you three ways to view and analyze data using the polygon(s) that you have created.

- Query by Polygon Tool (ERMA's native polygon query tool).
- NOAA ESI Query Tool.
- U.S. Fish and Wildlife Service IPaC Tool.

### Query by Polygon Tool

**IMPORTANT:** The Query by Polygon Tool returns data for ERMA-hosted layers only. It does not return data for layers that are externally hosted.

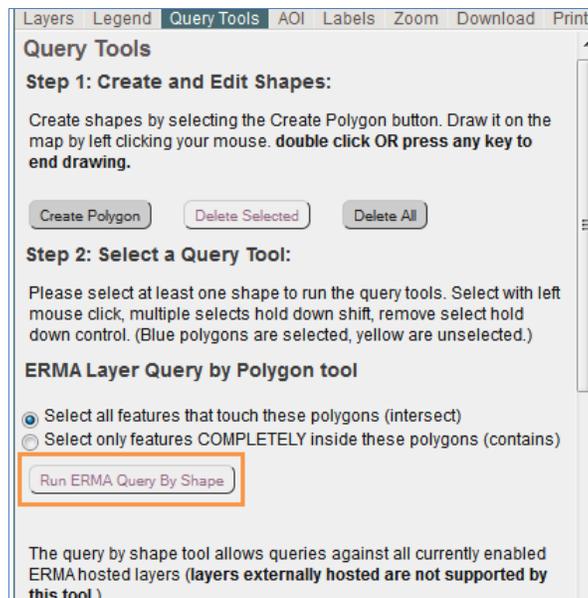
This tool lets you create a subset of all active layers that are contained completely within the polygon(s) that drawn on the map, or which intersect the drawn polygons. All data for active layers is returned in a new browser window, and it can then be exported as:

- An Excel spreadsheet
- A KML (Google Earth) file
- A shapefile
- A SpatiaLite (SQLite) database

Metadata is available for each layer.

To use the Query by Polygon Tool:

1. On the **Layers** tab, turn on all of the layers that you want to query.
2. On the **Query Tool** tab, create one or more polygons using the procedure in "[Creating a Polygon](#)" on page 19.
3. Click on the polygon(s) that you want to use in your query. To select multiple polygons, press the SHIFT key and click on each polygon you want to include.
4. Select one of these query types:
  - **Select all features that touch these polygons (intersect)** returns data for any feature in an active ERMA-hosted layer that is wholly or partially contained in the selected polygon(s).
  - **Select only features COMPLETELY inside these polygons (contains)** returns data for any feature in an active ERMA-hosted layer that is wholly contained in the selected polygon(s).



5. Click **Run ERMA Query By Shape**. ERMA will generate a subset of records based on your selections, and then display a window similar to the one below.

Query Layers by Polygon Results

Results Summary Layer 16203

Layer Name	Layer ID	Result Count	Comments	Metadata	Export?
Gulf of Mexico Salinity Zones (NOAA)	16203	3		Metadata	<input checked="" type="checkbox"/>
NAIS - All Vessel Tracks (last 12 hours)	3806	Data Not Available	This layer is external to ERMA, and is therefore not queryable using this tool.	Metadata	<input type="checkbox"/>

Apply filters to export  
 Export all data

Select your desired extract format:

The **Results Summary** tab lists each layer for which data exists, and tells you whether there is data that could not be included because it is hosted externally. Separate tabs for each layer let you examine the data in more detail.

6. Export the data in the desired format, with or without filtering.

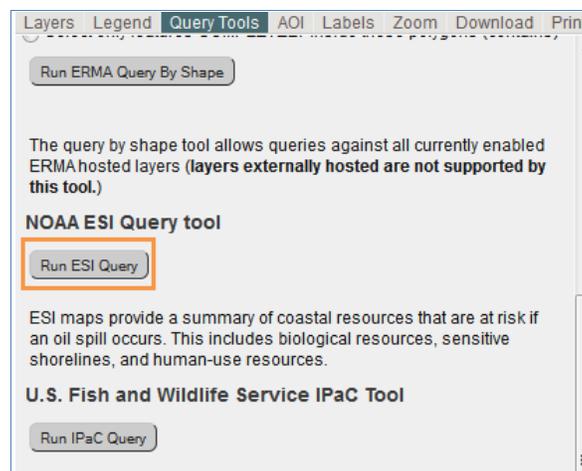
## NOAA Environmental Sensitivity Index (ESI) Tool

NOAA Environmental Sensitivity Index (ESI) maps provide a summary of coastal resources that are at risk if an oil spill occurs. This summary includes biological resources, sensitive shorelines, and human-use resources.

*Note:* You do not need to turn on any ESI layers before following the steps below. You will choose the layers you want during the procedure.

To run an ESI query:

1. On the **Query Tool** tab, create one or more polygons using the procedure in "[Creating a Polygon](#)" on page 19.  
Given the size of the ESI database and the time it takes to process large areas, it is a good idea to select a reasonably small area for your query (an island or section of shoreline, for example) rather than use a large region (such as an entire state).
2. Click on the polygon(s) that you want to use in your query. To select multiple polygons, press the SHIFT key and click on each polygon you want to include.
3. Click **Run ESI Query**.



- When the ESI Table Tool appears, select the information that you want included in the ESI report.

- Select the check box for each month that you want the ESI report's data to cover. If you want data for a full year, click **Check All**.
- If you want the report to include a section listing data that involves more than one of the information types that you have selected, select the **Report Area Intersection Summary** check box.
- Click **Run ESI Query**. A report is generated and then displayed in a new window similar to the one shown below.

*Note:* If your ESI query does not produce results within a few minutes, you may need to quit the ESI tool and try again using a smaller polygon, fewer ESI layers, and/or fewer months.



[Environmental Sensitivity Index: Resources at Risk](#)

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[Background and Instructions](#)

Species listed in **Red** are either listed as Threatened (T) or Endangered (E) by the State (S) or Federal government (F)

**Notes:** Click on column headers to sort rows; hover or click on species link to get more information.

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[Summary Results](#)

AOI total area: 4.2 million acres

**LOUISIANA Bird Habitat**

**18 unique species:** American coot, American wigeon, Blue-winged teal, Canvasback, Gadwall, Green-winged teal, Hooded merganser, Lesser scaup, Mallard, Mottled duck, Northern pintail, Northern shoveler, **Piping plover**, Rare shorebird, Ring-necked duck, Shorebirds, **Threatened raptor**, **Threatened shorebird**

**LOUISIANA Fish Habitat**

**53 unique species:** Alligator gar, Atlantic croaker, Bantam sunfish, Bay anchovy, Bighead carp, Bigmouth buffalo, Black buffalo, Black crappie, Black drum, Bluegill, Bowfin, Catfish, Chubsucker, Common carp, Crevalle jack, Florida pompano, Freshwater drum, Gizzard shad, Grass carp, Gray snapper, Gulf menhaden, **Gulf sturgeon**, Hybrid sunfish, Largemouth bass, Logperch, Longear sunfish, Minnows, Orangespotted sunfish, Paddlefish, Red drum, Redear sunfish, River carpsucker, Sand seatrout, Sheepshead, Shiners, Shortnose gar, Shovelnose sturgeon, Silver carp,

## U.S. Fish and Wildlife Service Information, Planning, and Conservation (IPaC) Tool

The Information, Planning, and Conservation (IPaC) System provides information about U.S. Fish and Wildlife Service trust resources for your selected area, including threatened and endangered species. It also provides recommended conservation measures tailored to your project activities and trust resource species.

To run an IPaC query:

1. Create one or more polygons using the procedure in "[Creating a Polygon](#)" on page 19.
2. Click on the polygon(s) that you want to use in your query. To select multiple polygons, press the SHIFT key and click on each polygon you want to include.

*Note:* IPaC does not currently support points or line segments. If you need to define your project location as a point or line segment, draw a small polygon around the location.

3. Click **Run IPaC Query**. A window like the one shown below will open.

U.S. Fish & Wildlife Service  
IPaC - Information, Planning, and Conservation System  
Environmental Conservation Online System

Search

IPaC Home Page Initial Project Scoping Project Builder FAQs

**Step 1**  
Location

**Step 2**  
Activities

Step 3  
Trust resources list

Step 4  
Conservation measures

Describe your project

Select your project type:

Back Continue...

Last updated: December 16, 2011

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4. Follow the prompts in the IPaC System to complete your query.

For help using the IPaC tool, go to: <http://ecos.fws.gov/ipac/faqs.jsp>

# Zoom Tab

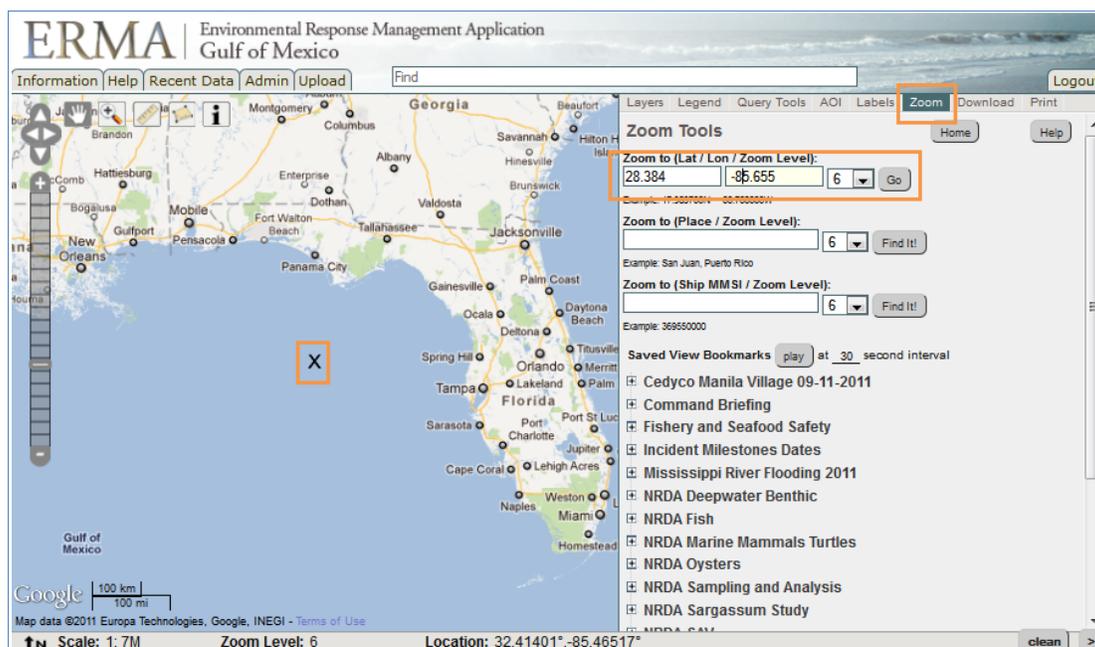
The **Zoom** tab lets you zoom to a particular location in any of these ways:

- By latitude and longitude
- By the place name for a geographic location.
- By NAIS ship location (using a ship's MMSI number).  
*Note:* This zoom type is not available on all ERMA sites.
- Using bookmarks and playlists.

## ZOOMING BY LATITUDE AND LONGITUDE (LAT/LON)

To zoom using latitude and longitude:

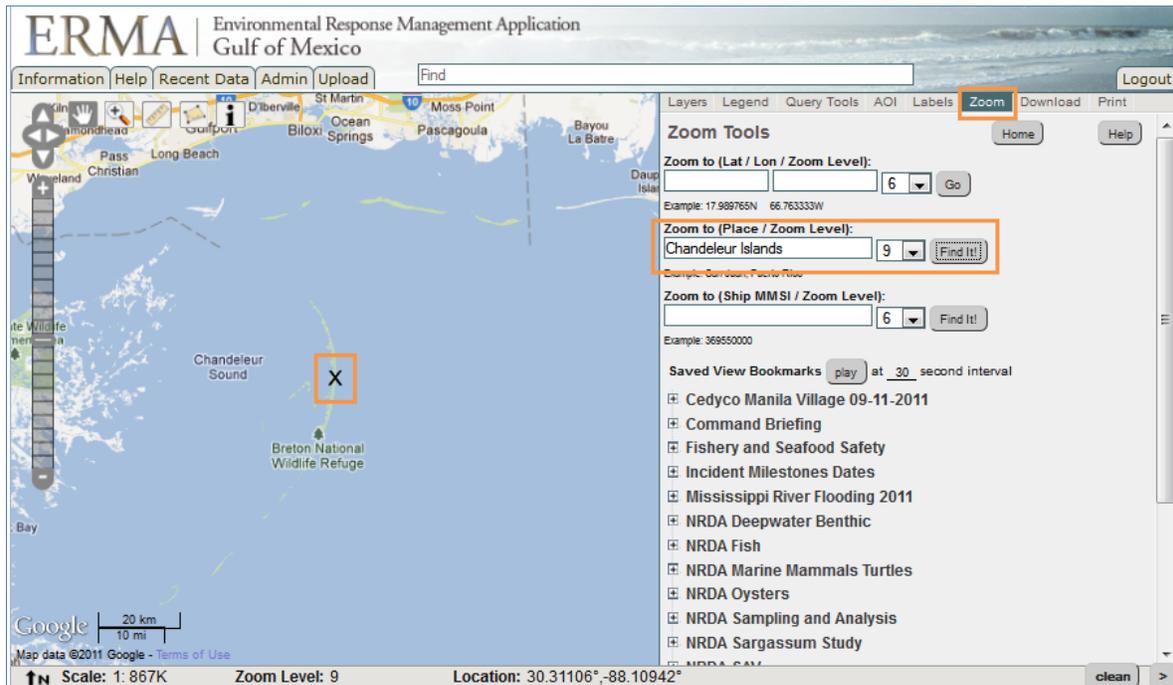
1. Enter a known latitude and longitude in any of these formats:
  - Decimal degrees. (For example: 18.384, -65.655.)
  - Degrees decimal minutes. (For example: 66 45.8000W.)
  - Degrees minutes seconds. (For example: -66 45 48
2. Select a zoom level from 1 (zoomed out to show the whole map) to 19 (zoomed in as close as possible).
3. Click **Go**. A black X appears on the map at the exact location you selected.



## ZOOMING BY PLACE NAME (PLACE)

To zoom using a place name:

1. Enter the name of a geographic location.
2. Click **Find It!** A black X appears on the map at the location you selected.



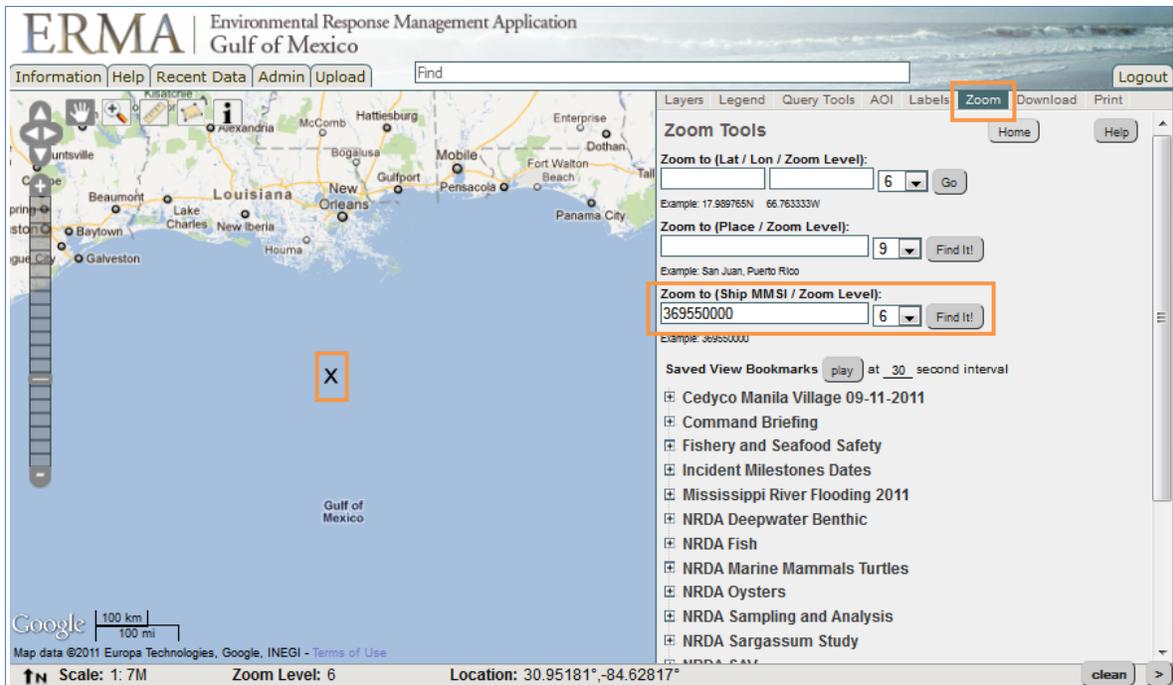
## ZOOMING BY SHIP NUMBER (SHIP MMSI)

*Note:* This zoom type may not be available on your ERMA site.

Users with who have to required privileges have access to the NAIS (Nationwide Automatic Information System) feed. This is a near real-time data feed that shows the name, location, status, and other details for most open-water vessels. If you know a particular ship's Maritime Mobile Service Identity (MMSI) number and want to find its location, you can use this tool to find its last received location.

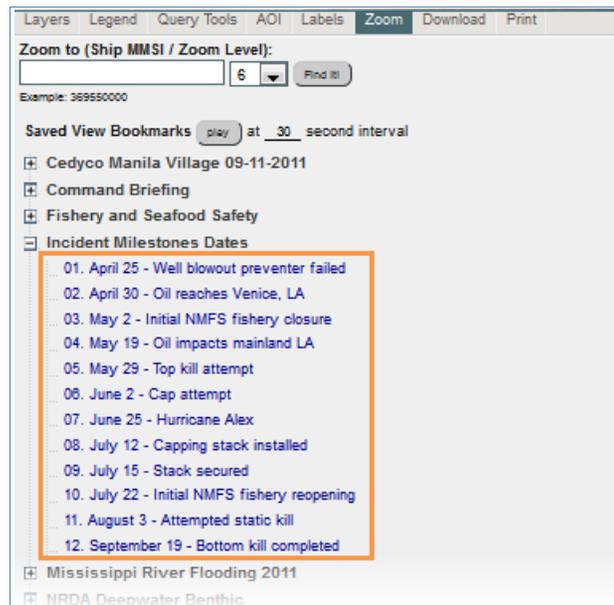
To zoom by ship location:

1. Enter the known ship's 9-digit MMSI number.
2. Click **Find It!** A black X appears on the map showing the most recent received location of the ship. Depending on how often a ship's transponder reports information, this location may be accurate to within the minute or it could be several hours old.



## ZOOMING USING BOOKMARKS AND PLAYLISTS

Bookmarks can be used as an easy reference to automatically zoom to a specific location or extent with a number of preset layers turned on. The bookmarks in ERMA are found on the **Zoom** tab, listed in blue

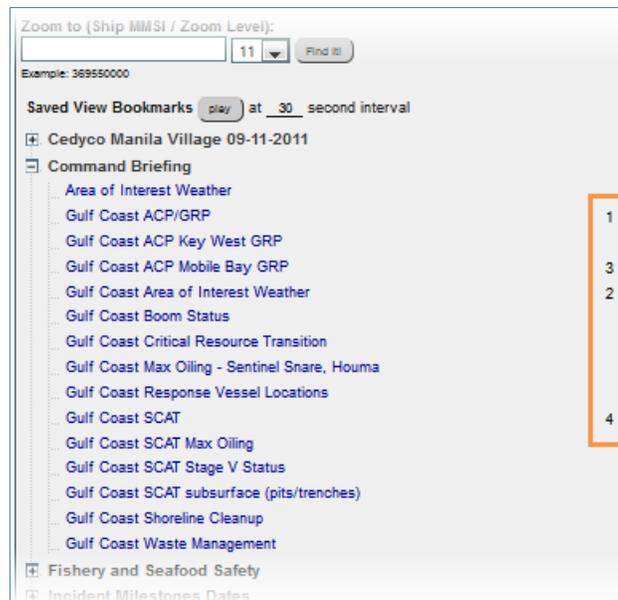


## Bookmark Playlists

Bookmarks can also be set up to display automatically in a specified sequence. This is useful when you want ERMA to run on its own like a slide show. This tool can be customized to play all bookmarks by clicking the play button, or only specific bookmarks.

To create a play list:

1. On the **Zoom** tab, go to the list of bookmarks that contains the ones that you want to include in the playlist.
2. Right-click on the first bookmark that you want to add.
3. When the menu appears, click **Add to Playlist**. A number (in this case, 1) will appear to the right of the bookmark name.



4. Repeat steps 2 and 3 for each bookmark you want to add to the playlist.
5. If desired, enter a different interval for the display of bookmarks. (The default is 30 seconds.)
6. Click **Play** to make the playlist start playing.

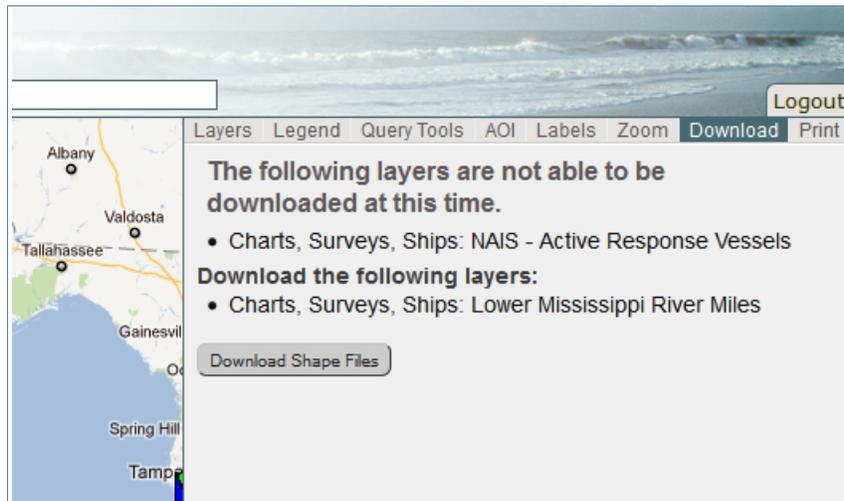
*Note:* If you want to change the running order double-click on the number to the right of a bookmark and enter a new number.

# Download Tab

ERMA lets you download any available shapefile data to your computer for use in ArcMap or other GIS application.

To download shapefile data:

1. On the **Layers** tab, turn on the layers that you want to download.
2. Select the **Download** tab. You'll see a list of the layers that are available for downloading. You'll also see the layers that cannot currently be downloaded, if there are any.

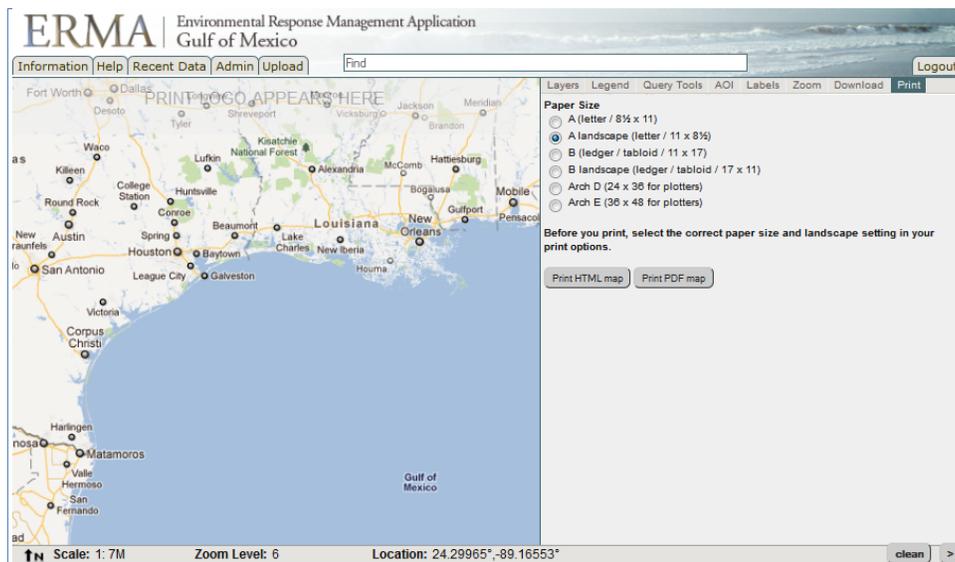


3. Click **Download Shapefiles**. Your browser will then prompt you to save a ZIP file that contains the full shapefile data.
  - No legend information is downloaded unless a LYR legend file was originally uploaded with the shapefile. In this case, the LYR file will be included.
  - Multiple shapefiles are saved into a single file called erma.zip rather than as separate ZIP files.

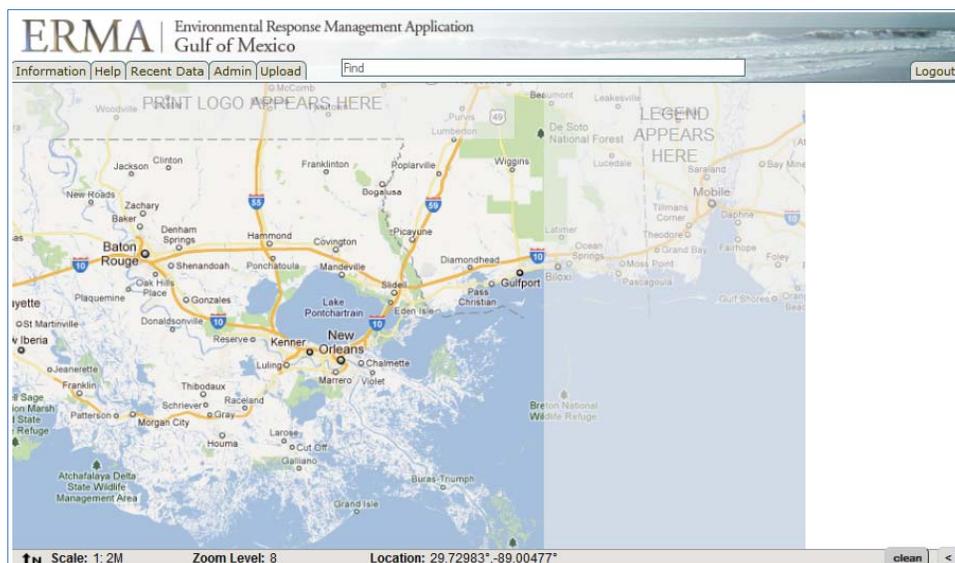
# Print Tab

To print a map displayed in the ERMA window:

1. On the ERMA window, select the **Print** tab. Your map is displayed with rectangular watermarks indicating the approximate locations of the Print Logo and Legend.



2. If needed, click the **Hide TOC** button  to hide the Print tab and get a full view of what the printed map will look like. You can move the map around to fit the paper better.



3. Under Paper Size, select the size of the paper you will print the map on, and the orientation of the map image on the paper.
4. In your web browser, open the print settings and make sure that the paper size and orientation match what you have selected on ERMA's **Print** tab.
5. Depending on the type of map you want, click **Print HTML Map** or **Print PDF Map**. (The PDF map is a good option for saving to your desktop or emailing a map to others.) A new window appears, showing what your printed map will look like (including your name and a date/time stamp).