Environmental Response Management Application (ERMA)

Basic User's Guide

Version 5.0

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INTRODUCTION

What Is ERMA?

The Environmental Response Management Application (ERMA®) 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 for users to visualize an active environmental situation or long-term case assessment.

Because ERMA is web-based, users do not have to download any proprietary software onto their computers. It also 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 You'll Find in This User Guide

This guide gives an overview of how ERMA works, and then describes what a new user needs to know about ERMA's interface and basic tools. Some of the functions described are available only to ERMA users with accounts or are restricted to users who have certain privilege levels.

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.
- Getting Started tells how to get an ERMA account, how to log in to ERMA, and describes how to use the different parts of the ERMA window.
- Using the ERMA Window will familiarize you with the different areas of the window and where to find the different tools and data layers.
- Layers where you will find all the layers, or datasets, available in ERMA. Depending on the region, its activity level, and your account access there can be hundreds or even a few thousand layers in one site. Because of the volume of information, the layers are organized into categorical folders and sub-folders that are consistent throughout all the regional ERMA sites. Some of the layers are found in all the ERMA sites, and some of the layers are specific to one region
- Query Tools describes how to create and edit polygons that you can use to analyze the data available for an area. It also explains 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).
- Download Tab explains how to save ERMA data to your computer.

- Draw Tab explains how to draw points, lines, and polygons on the map to create drawings that you can share with other ERMA users.
- Dashboards easily convey project or incident focused metrics and charts to the broader ERMA user base.
- Appendix provides more information on ERMA such as websites and citations

ERMA Basics

ERMA is an online mapping tool offering comprehensive access to localized environmental response information. ERMA integrates both static and real-time data, such as Environmental Sensitivity Index (ESI) maps, ship locations, weather, and ocean currents, in a centralized format. It provides environmental responders and decision-makers with access to data for environmental planning, response, assessment, restoration, and incident drills, as well as for other incidents and natural disasters. The system incorporates data into a fast, user-friendly GIS that can be accessed by command post staff, by active field and remote support teams, and by decision makers and other incident and restoration staff at a variety of locations.

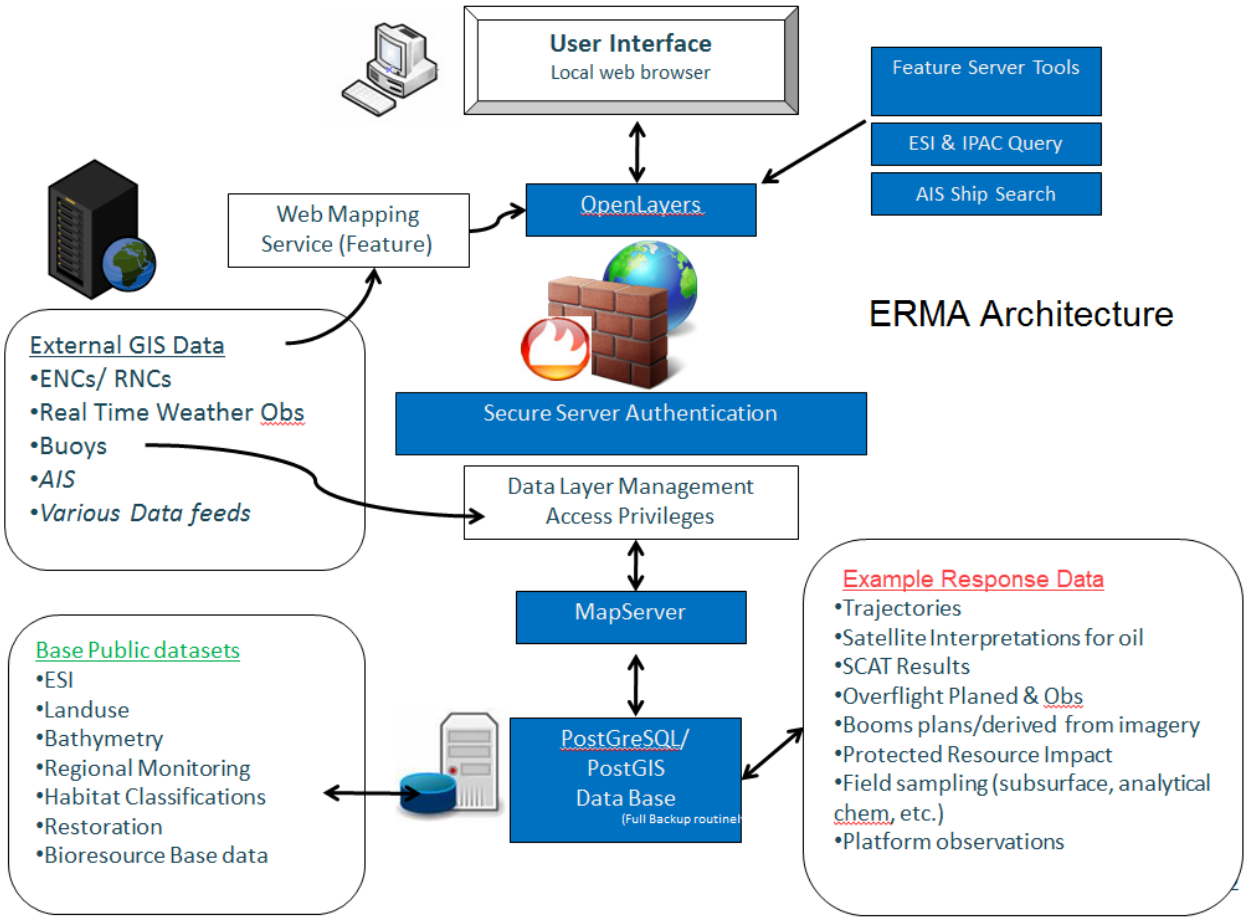
ERMA was developed in 2007 by the National Oceanic and Atmospheric Administration (NOAA) and the University of New Hampshire with the Environmental Protection Agency, U.S. Coast Guard, and the Department of the Interior in a cross-agency effort. It is currently organized into eight regional sites: Atlantic, Caribbean, Gulf of Mexico, Southwest, Pacific Islands, Pacific Northwest, Arctic, and the Great Lakes.

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) into a fast, user-friendly GIS that is accessible to anyone with access to the Internet, whether in the field or at an agency headquarters. ERMA enables a user to quickly and securely access GIS data, photos, and imagery that can be used to solve complex environmental response and resource issues.

The application is based on open source software (PostgreSQL/PostGIS, MapServer, and OpenLayers), that meet Open Geospatial Consortium (OGC) specifications and standards used across federal and international geospatial standards communities. This ensures ERMA is compatible with other commercial and open-source GIS applications that can readily incorporate data from online data projects and avoids licensing costs. Open-source compatibility supports data sharing, leverages existing data projects, reduces ERMA's maintenance costs, and ensures system flexibility as the technology advances. Because ERMA is open source, it can easily be customized to meet specific user requirements.

ERMA operates in the Federal Information Security Management Act (FISMA) Amazon Cloud, which allows the application to scale as needed for big and small events. The illustration below shows ERMA's basic software architecture and data flows.



ERMA Security

ERMA enacts a number of security measures to ensure that the datasets used in ERMA are accessible only to those who should have access. Both the data layers and the users are given security levels to determine who sees what in ERMA.

Layer Security

Each layer that is brought into ERMA, either as a static shapefile, or as a data feed from an external partner, is given a security **sensitivity** level. For example, Public, NRDA, or Responder. There are several other categories that rank in order of highest to lowest sensitivity level. The ERMA Regional Leads work with the data originator to determine what level their data should have.

User Accounts & Security

In conjunction with the layer security levels, each user is given their own account **privilege** that determines what layer sensitivity levels they will see. These privileges are determined by their agency and staff role, and NOAA Sponsor recommendation. Each user account is vetted by an ERMA Account Manager who looks at the user's request and customizes their account based on the existing NOAA security requirements.

Together, the ERMA layer and user account security measures ensure that ***data are available only to the appropriate users for their appropriate use.***

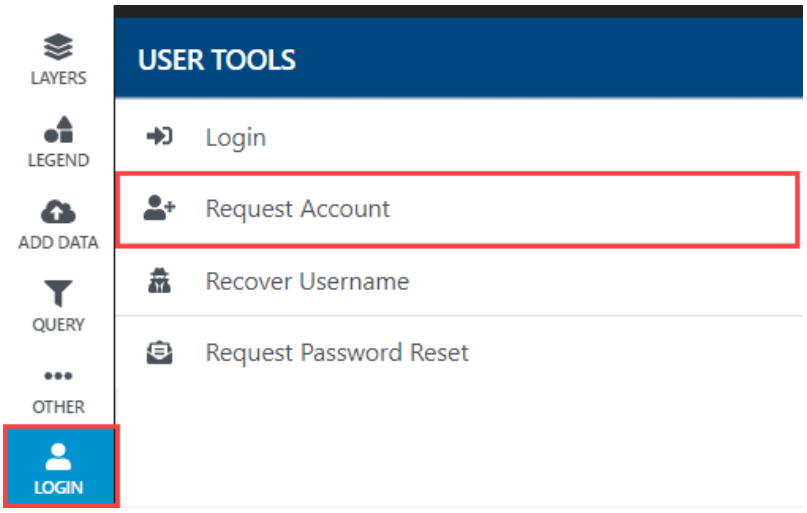
Getting Started

Getting an ERMA Account

ERMA can be accessed by anyone to view publicly-accessible data. To access restricted, non-public data, ERMA users who are active in the environmental response, planning, restoration, and assessment community can apply for an ERMA account. Each account request requires a NOAA Sponsor and is reviewed by an ERMA Account Admin before being approved.

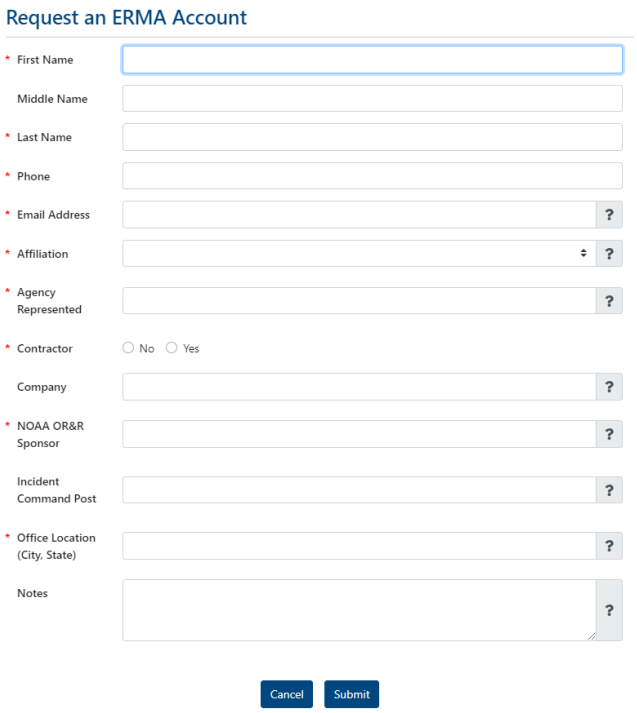
To get a new ERMA account:

1. On the ERMA home page, click the **Login** menu at the bottom of the toolbar and then select Request Account.



2. Enter the requested information. While the information you need to provide for many of the fields are self-explanatory, you'll find more details about some of the fields below the illustration.

   IMPORTANT: *You must provide information for all fields that are marked 'Required.'*



- **Email Address**: Enter a full work email address. Personal email accounts such as Google Mail or Hotmail do not meet our security protocols.
- **Affiliation**: Open the drop-down list and select the type of organization that you are affiliated with. If none of the listed categories fit your organization, select **Other**.
- **Agency Represented**: Enter the name of your agency or organization.
- **Contractor**: If you work for your organization on a contract basis, select **Yes**. Otherwise, select **No**.
- **Company**: If you are a contractor, enter the name of the contracting company that you work for.
- **NOAA OR&R Sponsor**: Enter the name of the NOAA Office of Response & Restoration representative who suggested that you use ERMA and who can verify you for an account.
- **Incident Command Post**: If you are part of an active response, enter the name of your incident command post.
- **Office Location**: Enter the location of your incident command post or, if you are not part of an active response, the home city of your organization.
- **Notes:** Enter any additional information that would be pertinent to the creation of your NOAA account.

4. Click **Submit**.

Requests for ERMA accounts are processed by the account management team during regular business hours (Monday through Friday from 8 A.M. to 5 P.M.). Processing will be more frequent during a drill or incident. Once your account has been processed you will receive an email from

the account management team about accessing ERMA, how to find basic information, names of the ERMA regional leads, and basic documentation.

Setting Up Passwords and Account Maintenance

Your password and user account are an important part of keeping ERMA secure. There are NOAA security guidelines to follow for password creation and user account management, including the following password requirements:

Passwords have the following requirements:

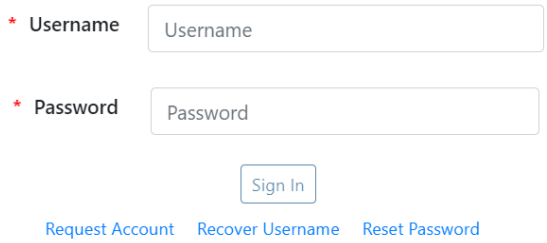
- Must be at least 12 characters long
- Contain characters from at least three of these categories:
  - Uppercase letters (A-Z)
  - Lowercase letters (a-z)
  - Non-alpha-numeric characters (such as !,#,$,%,*, etc.)
  - Numbers (0-9)
- No dictionary words longer than three characters
- Common proper nouns are disallowed
- No spaces or tabs
- Not used by you within the last two years
- Not a repeat of any of your last eight passwords

- Every 90 days, your password will expire. When you login, you will be prompted with a message notifying you to reset your password. You may change or reset your password before then by clicking the "Change Password" function at the top right of the page.
- If you have not logged into ERMA for 6 months, your account will expire. Before this happens, you will receive an automated email 2 weeks in advance notifying you of this occurrence and to log in again. You will also be required to create a new password.
- If you have not logged into ERMA longer than 6 months and your account is expired, when you try to log in a notice will appear to contact the orr.ermaaccounts@noaa.gov email. Your account will be reviewed and reactivated based on information provided.

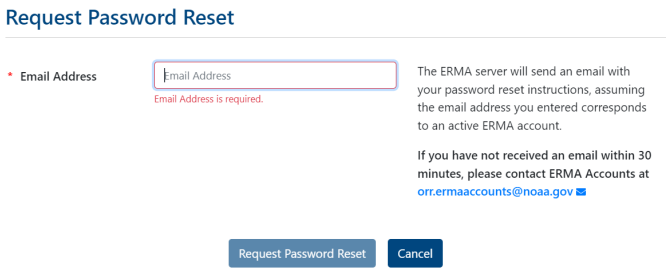
Recovering Your Password

To recover your password if you forget or lose it:

1. On the ERMA home page, click the **Login** command (located at the bottom of the toolbar).
2. When the Login window appears, click **Recover Username/Password**.



3. When the Password Recovery window appears, type your email address (the same address you used when you initially requested your account) in the field provided.

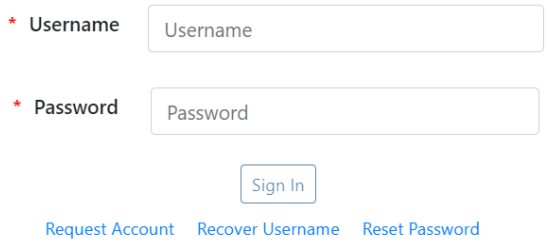


4. Click **Submit**. An automated email will be sent instructing you to create a new password.

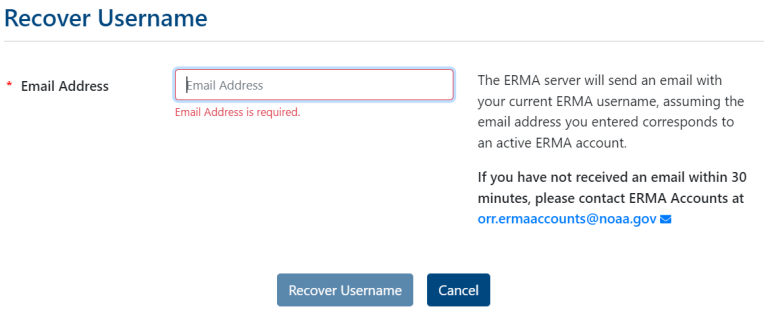
Recovering Your Username

To recover your username if you forget or lose it:

1. On the ERMA home page, click the **Login** command (located at the bottom of the toolbar).
2. When the Login window appears, click **Recover Username/Password**.



3. When the Username/Password Recovery window appears, type your email address (the same address you used when you initially requested your account) in the field provided.

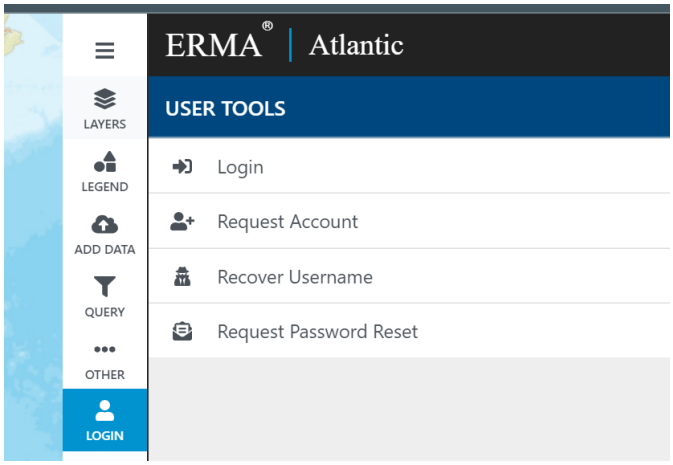


4. Click **Submit**. An automated email will be sent containing your username information.

Logging In and Out

To log in to ERMA:

1. On the ERMA home page, click **Login** at the bottom of the toolbar.



2. When the Login window appears, enter your username and password.
3. Read the terms of use detailed in the scrolling box, and once you have checked the box "I Agree", Click **OK**. A message will tell you that your login was successful.
4. Once you are in ERMA you will see a Table of Contents to your right containing data layers and additional tools and tabs made available to those who hold ERMA accounts. Users who have access to multiple Regional ERMA sites can go to them without logging in again.

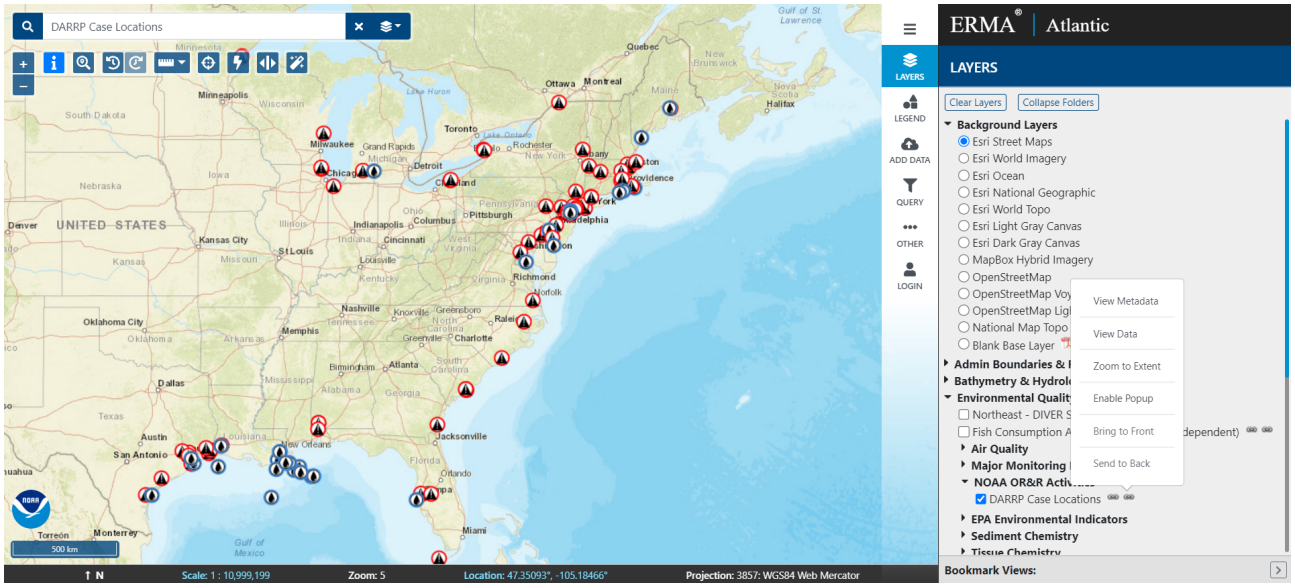
To log out of ERMA:

Click **Logout** in the upper-right corner of the ERMA window. All restricted folders and layers disappear, and a message tells you that the logout was successful.

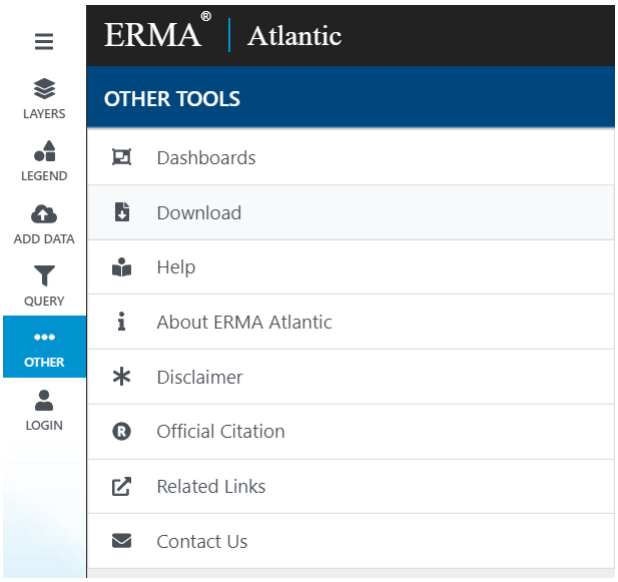
NOTE: If your ERMA window has been inactive for 2 hours, you will be automatically logged out.

Using the ERMA Window

ERMA data is accessed and displayed using the ERMA window. The elements of this window are shown in the illustration below.



The other section of the toolbar window contains several sections including the **Information** tab, **Help** tab, and **Dashboards** tab.



- The **Information** option opens a window containing general and design information about ERMA.
- The **Help** option opens a window containing basic information about using ERMA, including the use of the Map Toolbar and Navigation tabs.
- The **Dashboards** option links out to an external web page tab that is connected to preset ERMA layers. Dashboards are interactive and dynamic that help to view ERMA layers in an in depth way.

Map Controls

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

	Zoom Level Control Allows you to zoom in and out of the map to increase or decrease the zoom level, showing more or less detail. 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.

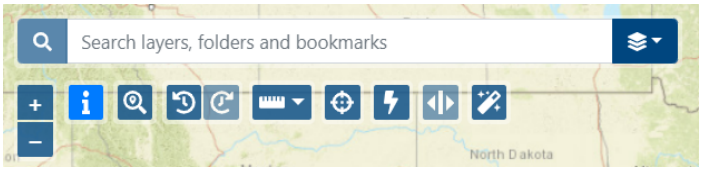
Map Toolbar

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

	Magnifier Tool Allows you to re-center the map on any desired point and then zoom in on that spot. • To re-center, click the **Magnifier Tool** icon and then click anywhere on the map. Each successive click zooms in on the map's new center. • To zoom in on a specific area, click the **Magnifier Tool** 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. 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.
	Previous Extent and Next Extent Allows *you to* zoom the map to the previous extent. Click the icon to switch to the previous map extent or next extent without changing any of the currently selected layers. If the icon is gray, there is no map extent saved.
	Measurement Tool Allows you to draw a line or polygon on the map to measure length or area. Click on the tool icon and choose to measure length or area in the desired units from the dropdown menu. Then click the point on the map where you want the measurement to start. If you single-click at another point, you can continue the measurement in another direction. Double-click where you want the measurement to end and the length or area calculation will appear in the map.
	My Location Tool Allows you to place a pin of your current geographic location on the map. ***NOTE:*** *The ability to use this tool is based on your web browser settings and the IT security protocols for your organization.*
	Spot Forecast Tool Allows you to use the mouse pointer to bring up local, current weather information by clicking locations on the ERMA map. Click the tool again to toggle the feature off.
	Swipe Tool Activates a dynamic mode that allows you to swipe a black bar across the ERMA window that hides or reveals ERMA layers.
	Toggle Clean Mode Activates clean mode on or off. Clean mode removes all the tools, searchbar, toolbar, and TOC headers, to provide a minimalized view of the ERMA window for screenshots or visual calrity.

Search Box

The Search Box is located at the top-left of the ERMA window.



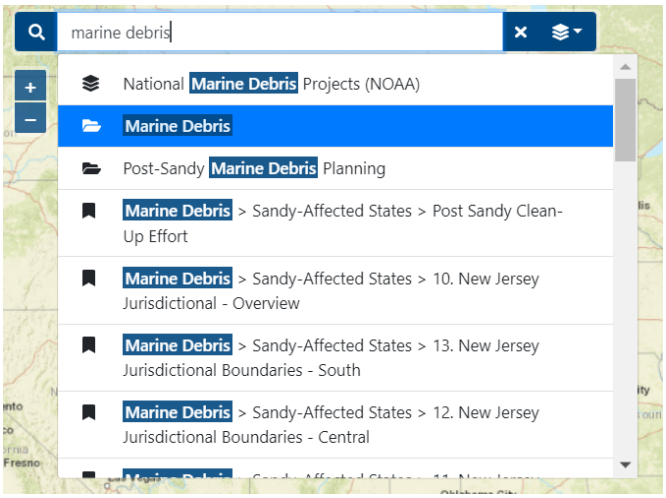
This tool is useful when you want to search for layers, folders, bookmarks, or geographic locations of interest without having to look through multiple folders. Instead, you can enter a word or phrase (which must contain at least three characters) into the **Search Box** and generate a list of results consisting all of the layers, folders, or bookmarks that have your search term in their names. If you would like to search by geographic name or latitude/longitude, check the "Geographic Search" box and type in the location in the search box. A drop-down list of locations will be displayed.

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

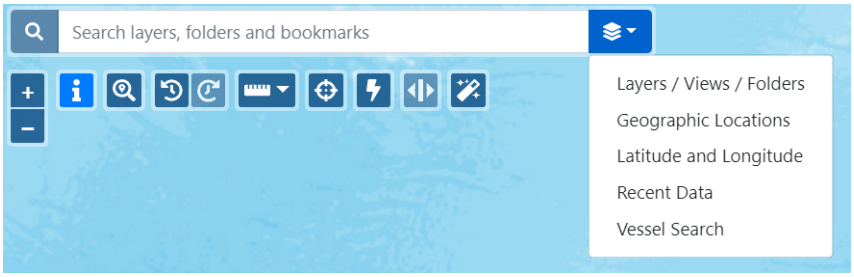
- Type the word or phrase that you are interested in. A list of relevant folders, layers, and bookmarks appears in a drop-down list.

You can now select items starting with any of the following:

- **Activate Layer**: When selected, the layer is activated, and the data it contains is available for analysis on the map.
- **Show Bookmark**: When selected, a pre-selected group of layers (called a Bookmark View) is displayed on the map.
- **Expand Folder**: When selected, the folder is expanded on the Table of Contents, which allows you to look through the folder for other layers that may be helpful.



Change Search Type Controls

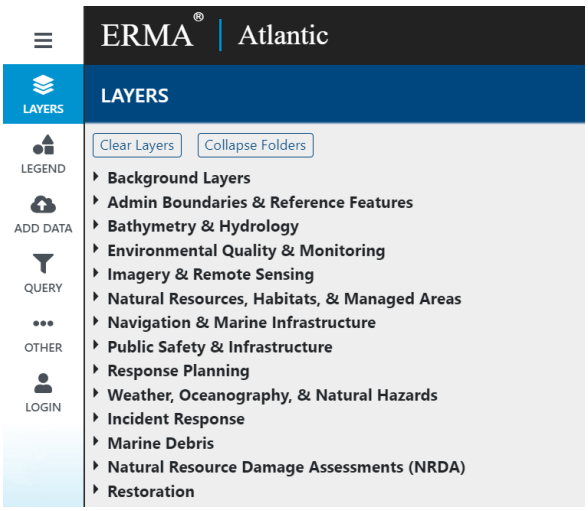


The **Change Search Type option next to the search bar** allows you to zoom to a particular location in any of these ways:

- By latitude and longitude
- By the place name for a geographic location.
- By NAIS ship location using a ship's MMSI number or its name.

Toolbar and Table of Contents

The Tool Tabs and the data layers' Table of Contents (TOC) sit on the right side of the ERMA window. The TOC is accessible via the "Layers" Tab. The rest of the tabs in this part of the ERMA window display panels for tools that let you analyze and download ERMA data.



These tools are available on the tool tabs:

Layers Tab – Allows you to view, create, and manage the layers of information that can be displayed on the map. This tab also allows you to create Bookmark Views and (if you have the needed permissions) share Bookmark Views with other users. For more information, see "Layers Tab: Creating, Editing, and Deleting Layers" on 30.

Legend Tab – Helps you interpret the symbology used in the layers displayed on the map. Legend information is automatically generated or updated each time new or different layers are selected for display. For more information, see "Legend Tab" on page.

Query Tab – Allows you to create and edit polygons on the map and then analyze the data available for that area. It also allows you 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). For more information, see "Query Tools Tab" on page.

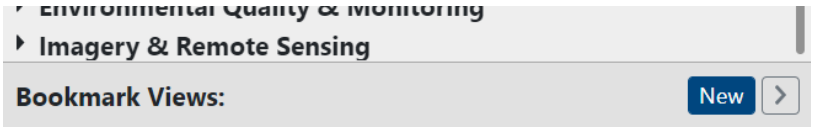
Draw Tab – (Available only to users with the required privileges.) Allows you to draw points, lines, and polygons on the map to create a drawing that you can share with other ERMA users. For more information, see "Draw Tab" on page.

Other Tab – Allows you to zoom in on a particular location by latitude and longitude; by the place name; by ship identification number or ship name. For more information, see "Zoom Tab" on page.

Login/Logout Tab – Allows you to download certain types of ERMA shapefile information to your computer. For more information, see "Download Tab" on page 198.

Bookmark Views Control

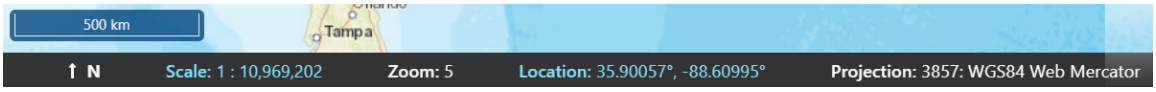
The Bookmark Views control is at the bottom of the **Layers** tab on the Table of Contents. Use this control to open the Bookmark Views panel and create a new Bookmark View.



New	*New* Opens the Save a View panel, which allows you to create a new Bookmark View (including the selection of the Base Views and folders/layers that the new view will include).
	Expand/Hide Opens and closes the Bookmark Views panel.

Map Key

The Map Key is located in the lower-left portion of the map in the ERMA window.



The Map Key has the following elements:

- A *graphic scale* showing how many 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 5.5 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.
- *Projection:* Projection system of the current map view.

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

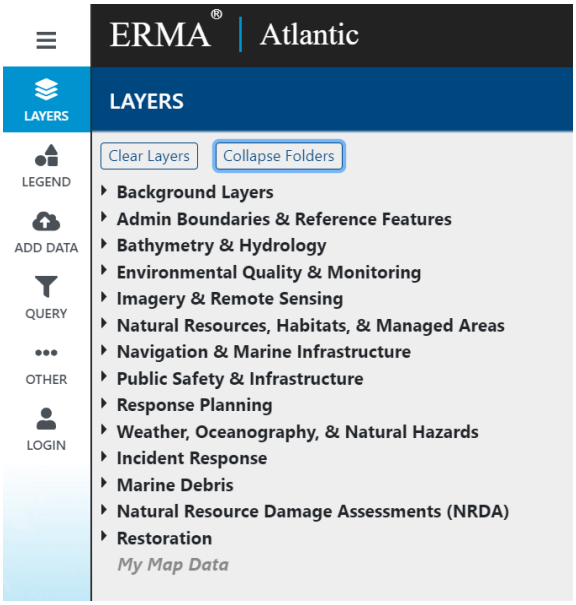
Layers Tab

The Layers tab is where you will find all the layers, or datasets, available in ERMA. Depending on the region, its activity level, and your account access there can be hundreds or even a few thousand layers in one site. Because of the volume of information, the layers are organized into categorical folders and sub-folders that are consistent throughout all the regional ERMA sites. Some of the layers are found in all the ERMA sites, and some of the layers are specific to one region.

The following sections provide more information on using the layers in ERMA.

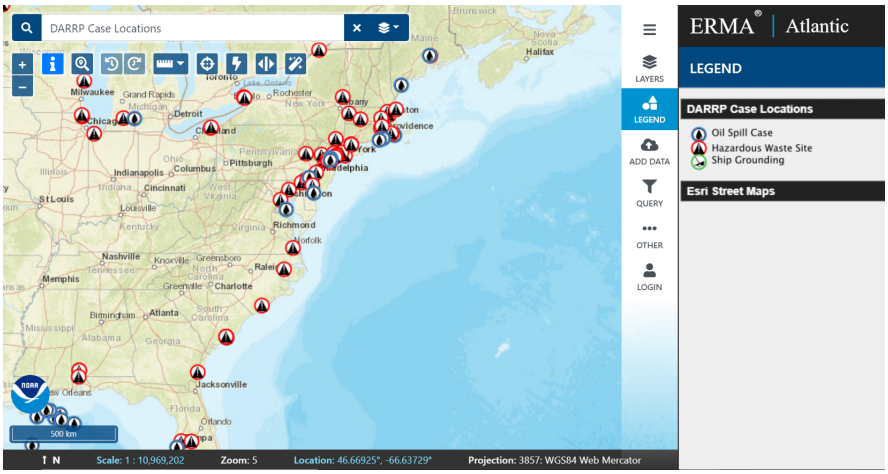
Base layers in all regions

All of the ERMA regions have a large set of core base layers in common that are mostly publicly accessible without an account. These include national-level datasets such as Weather, Oceanographic Conditions, Nautical Charts, Administrative Boundaries, and Infrastructure. These base layers are to provide consistency and cohesiveness between the regions, so that if you are familiar with one ERMA region it should be seamless to transition to working on another region.



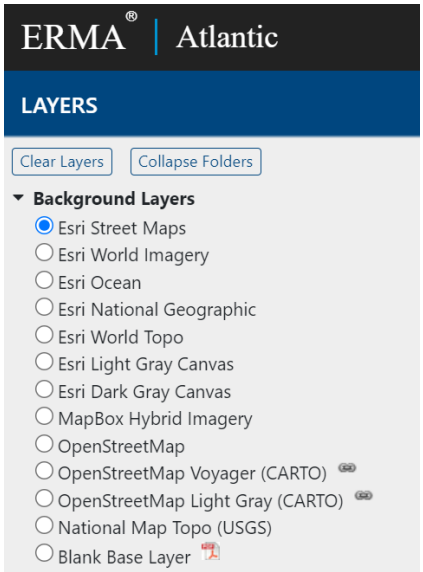
Legend & Symbology

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.



Background layers

Each ERMA region has the same Background Layers available. These provide a variety of options for overlaying data or for seeing additional background features on your map, such as satellite imagery or oceanographic feature names. We do not provide GoogleMap background layers due licensing agreements. However, we find that the background layers in ERMA, such as Open Street Maps and ESRI, provide excellent and occasionally better options.



Region specific layers

Each ERMA Regional Liaison works with state, federal, and local agencies to curate the most relevant and current datasets for their area. This allows ERMA to act like a portal for displaying a broad set of information important to environmental response and planning for that area. These regional layers include information such as natural resources, endangered species, response planning, environmental quality sampling, and imagery.

The regional layers will include information on the source of the data, when it was published, and the agency's website. We encourage our users to always seek out the data from the original source for the most up-to-date information.

Incidents & Drills

The Table of Contents includes a folder called Incidents & Drills that contains subfolders for any drill exercises or incidents that have used ERMA for data display. There is also a folder for NOAA OR&R ResponseLink Hotline records that are being investigated. The drill folders and data are archived after six months, and the incident folders and data are archived after one year.

When an incident is actively being responded to and using ERMA for its Common Operational Platform, its folder is moved to the top of the Table of Contents for easier access. Once the incident response has ended and its Natural Resource Damage Assessment has found resolution the folder is moved into an archive section in the Table of Contents. Many of the layers that were used during the incident are now used as base data in the Table of Contents going forward.

External Server Feeds vs Static Data Layers

ERMA's Table of Contents is made of many different layer types, which can generally be classified as either static or external server feeds. Static layers are loaded into ERMA once and do not change unless they layer is manually replaced in the ERMA database by a new one. These include data types like shapefiles or photos.

External server feed data layers are brought into ERMA through an external agency's web server or data system, and the data are continually or intermittently updated on their server. For example, the weather data that ERMA displays from the National Weather Service is hosted on the NWS server and continuously updated with their data in near real-time, which ERMA displays. Another example is field data collected by the EPA, which is managed by their data managers and hosted on their server, but might be updated once a day or once a week. This allows ERMA to display their data, but to keep the ownership in the hands of our partners.

While the user can't automatically differentiate whether the data they are using are static or from an external server, a review of the metadata should provide enough information on the source of the data.

Imagery

Historic and recent imagery can provide valuable information on the changes and impacts to a coastal environment. This can include imagery that shows flooding and debris from hurricanes, the footprint of oil on the ocean surface far offshore, and the success of restoration projects in local communities. We work with several agency partners to collect this historic imagery in vulnerable locations like the Arctic and Gulf of Mexico. After an oil spill or hurricane, we obtain imagery from overflights and satellites immediately after it is processed so that it can be displayed in ERMA and aid in decision making.

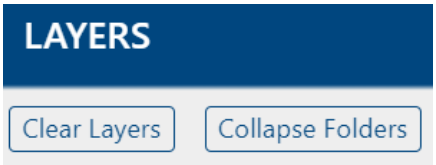
Photos

The photos taken by field staff are often the best way to visually communicate the state of how the coastal environment has been impacted. They provide immediate context of the situation, but in the

long term, they also provide evidence used in the Natural Resource Damage Assessment case to show how, where, and when resources have been compromised. Our field staff and data managers follow strict photo protocols so that all the forensic data is intact. The photos are geographically referenced and displayed in ERMA, which allows to user to see exactly what the field person saw at that time, and to also to overlay the photo with other spatial information to add to the story.

Clear All, Collapse All

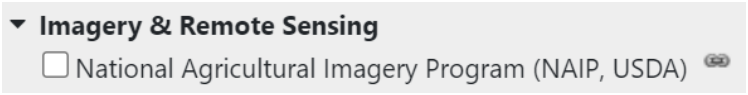
Two handy tools to use when working with layers and Bookmarks in ERMA are the **Clear All** and **Collapse All** links at the top of the TOC in the Layers tab. They appear in small gray font, but are something you should learn to use often. The Clear All link will turn off all layers on the map, and the Collapse All link will collapse any folders and subfolders that have been expanded.



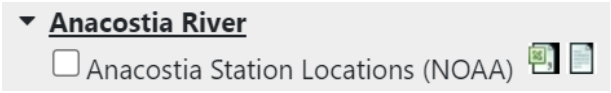
Layer Attachments (Documents, JPGs, URLs)

In addition to displaying data on the map, ERMA can also provide links to more information about the data. Small icons next to the layer name will link to other information such as a webpage, a PDF document, a spreadsheet, or a photo. To access the external website or document just click on the icon.

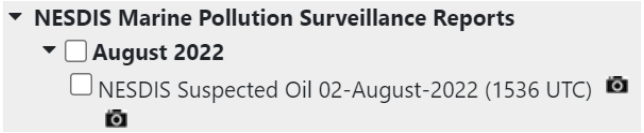
Icons with links to a webpage or PDF document



Icons with links to a spreadsheet document

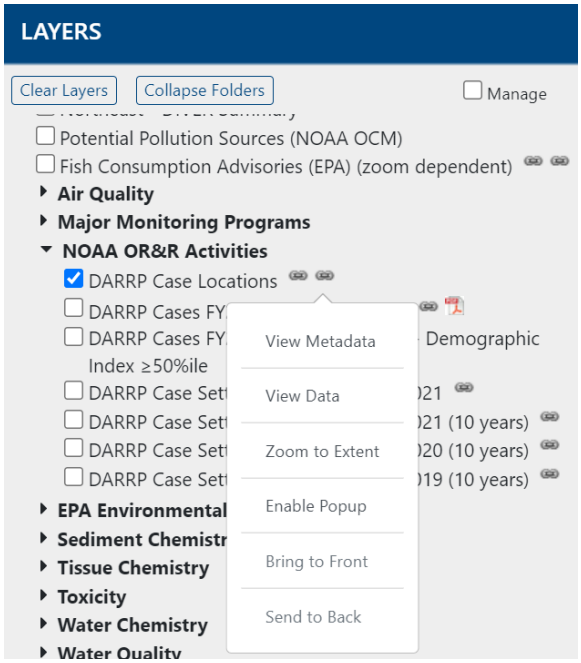


Icon with a link to a photo



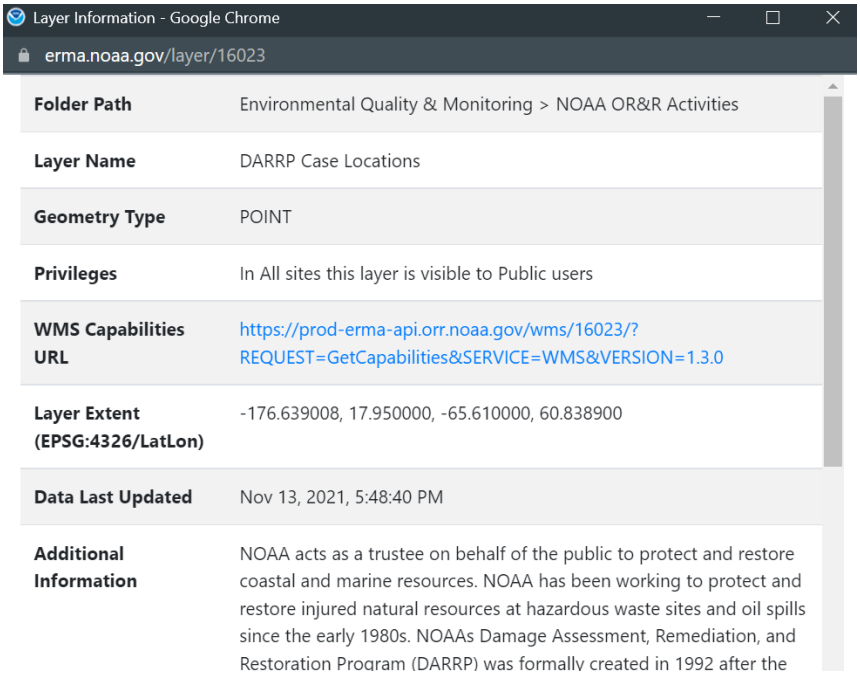
Layer Shortcut Menu

This shortcut menu appears when you right-click on the name of a selected layer. It allows you to perform specific operations on that layer, such as zooming to the layer's extent, viewing the attribute table data, or displaying metadata. The active commands on this menu vary from layer to layer.



View Metadata

It is important to have metadata to answer the *Who, What, Why, Where, When* of each layer. ERMA provides "metadata lite" via the View Metadata shortcut to give the user a quick overview of the information. When available there is also a link to the full FGDC metadata as provided by the originator of the dataset.



Zoom to Extent

This shortcut option will zoom to the full extent of the layer, which is useful to see its full geographic scope on the ERMA map.

Bring to Front & Send to Back

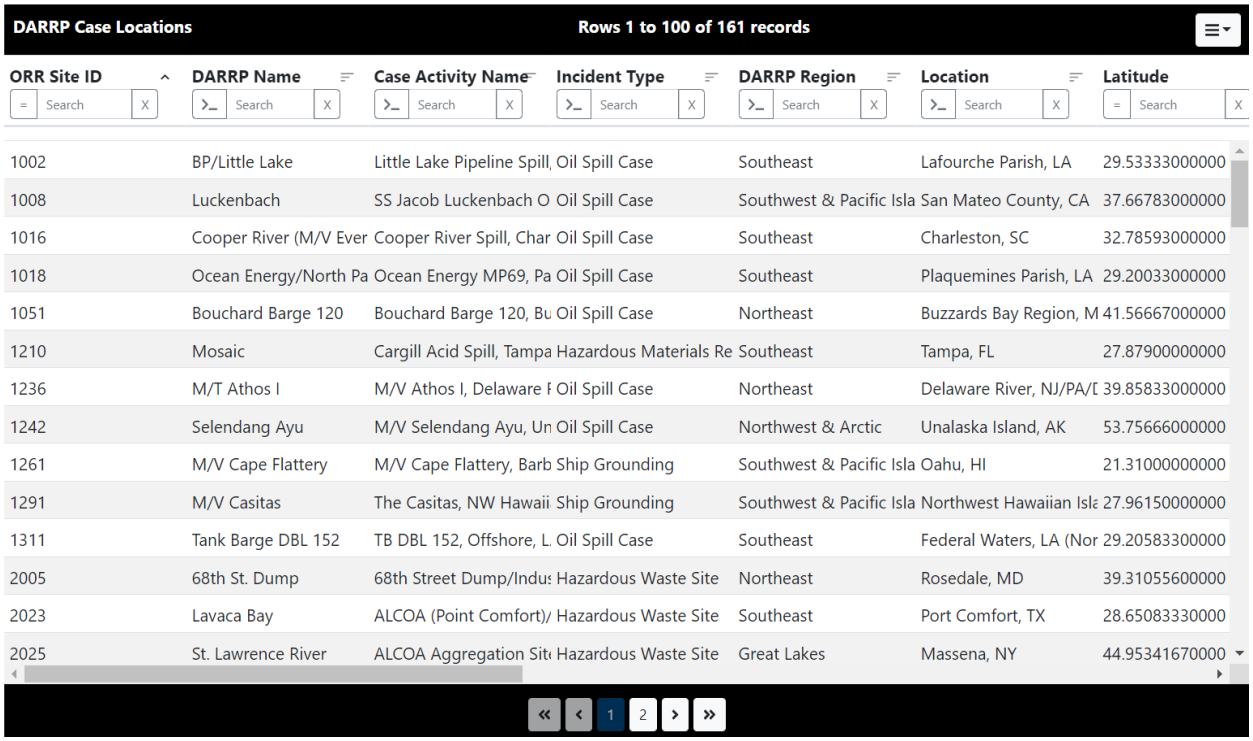
When multiple layers are turned on, this is useful to move layers in front of or in back of each other so they can be seen more easily.

View Attribute Table Data

Right click on a layer to open the shortcut menu, then click on **View Data** to open its attribute table.

With the attribute table open you can:

- Sort the columns alphabetically or numerically
- Search for words in the columns to filter the data
- Select records with by clicking the row with your mouse to highlight them on the map.



DARRP Case Locations — Rows 1 to 100 of 161 records

ORR Site ID	DARRP Name	Case Activity Name	Incident Type	DARRP Region	Location	Latitude
1002	BP/Little Lake	Little Lake Pipeline Spill,	Oil Spill Case	Southeast	Lafourche Parish, LA	29.53333000000
1008	Luckenbach	SS Jacob Luckenbach O	Oil Spill Case	Southwest & Pacific Isla	San Mateo County, CA	37.66783000000
1016	Cooper River (M/V Ever	Cooper River Spill, Char	Oil Spill Case	Southeast	Charleston, SC	32.78593000000
1018	Ocean Energy/North Pa	Ocean Energy MP69, Pa	Oil Spill Case	Southeast	Plaquemines Parish, LA	29.20033000000
1051	Bouchard Barge 120	Bouchard Barge 120, Bu	Oil Spill Case	Northeast	Buzzards Bay Region, M	41.56667000000
1210	Mosaic	Cargill Acid Spill, Tampa	Hazardous Materials Re	Southeast	Tampa, FL	27.87900000000
1236	M/T Athos I	M/V Athos I, Delaware F	Oil Spill Case	Northeast	Delaware River, NJ/PA/D	39.85833000000
1242	Selendang Ayu	M/V Selendang Ayu, Un	Oil Spill Case	Northwest & Arctic	Unalaska Island, AK	53.75666000000
1261	M/V Cape Flattery	M/V Cape Flattery, Barb	Ship Grounding	Southwest & Pacific Isla	Oahu, HI	21.31000000000
1291	M/V Casitas	The Casitas, NW Hawaii	Ship Grounding	Southwest & Pacific Isla	Northwest Hawaiian Isla	27.96150000000
1311	Tank Barge DBL 152	TB DBL 152, Offshore, L	Oil Spill Case	Southeast	Federal Waters, LA (Nor	29.20583300000
2005	68th St. Dump	68th Street Dump/Indus	Hazardous Waste Site	Northeast	Rosedale, MD	39.31055600000
2023	Lavaca Bay	ALCOA (Point Comfort)/	Hazardous Waste Site	Southeast	Port Comfort, TX	28.65083330000
2025	St. Lawrence River	ALCOA Aggregation Site	Hazardous Waste Site	Great Lakes	Massena, NY	44.95341670000

« ‹ 1 2 › »

As explained in the Adding Attributes Records to the Query by Polygon Tool section, if these features are polygons you can also add them to the Query Tool to analyze with other datasets.

Time Slider

The Time Slider player appears at the bottom of the screen when time is turned on for a layer.

- Date / Time displayed above the player is what is currently displayed

  - If you hover mouse over it, you see what timezone its in and in UTC
- Date / Time at the bottom of the player is what the start and end of the data currently displayed

This tool is useful when you want to see data over a time span.

To use the Time Slider in ERMA:

1. In your layer TOC, you should see a **clock icon** ( ) next to time-enabled layer(s).
2. To activate the Time Slider player, turn on the layer, and then click on the **clock icon**.

	Previous Time Step Allows you to go through the previous time steps
 Or 	*Play or Pause* Allows you to play the time slider or pause at a desired time.
	Next Time Step Allows you to go through the next time steps
	Stop Allows you to continue to play the time slider from the beginning to the end.
	Time Slider Settings Allows you to select setting options for the Time Slider
	Legend Text and symbology for the layer description

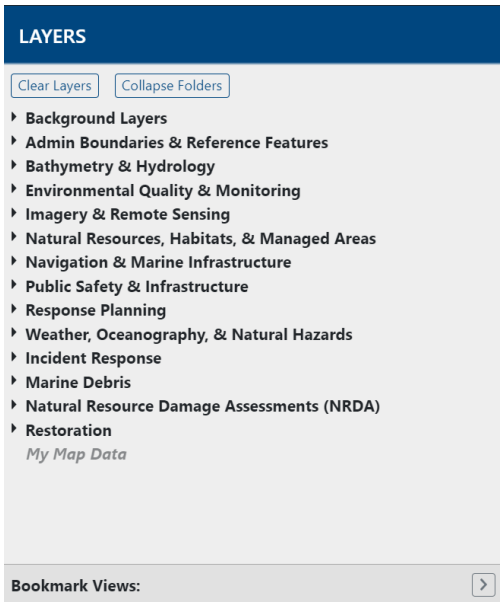
Bookmark Views

ERMA's Bookmark View function allows you to access preset groups of data of particular interest. Rather than recreating sets of data at the same geographic extent every time you use ERMA, the Bookmark will take you to that set of data and extent each time. The ERMA data managers will also edit the Bookmarks to make sure they contain the most relevant data possible.

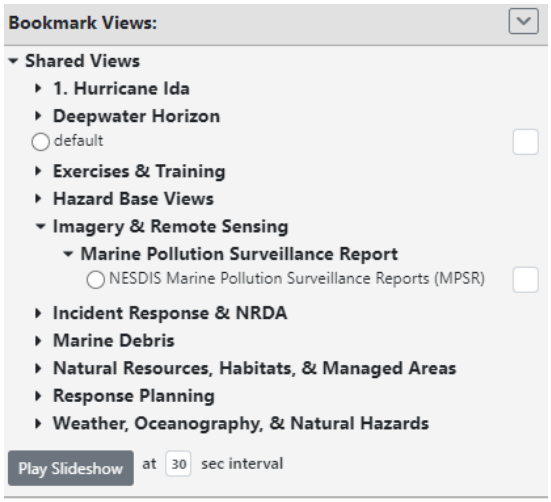
Examples of useful Bookmarks include base data and field sampling for a sensitive area. The Bookmark can be routinely updated with new, separate layers to make a more comprehensive story for that area. Another example is a hurricane response, where several times a day the responders will want to see several layers that are constantly being updated. Rather than try to remember where all these layers are in the TOC, it is far simpler to click on the Bookmark to access them immediately.

To use the Bookmark Views

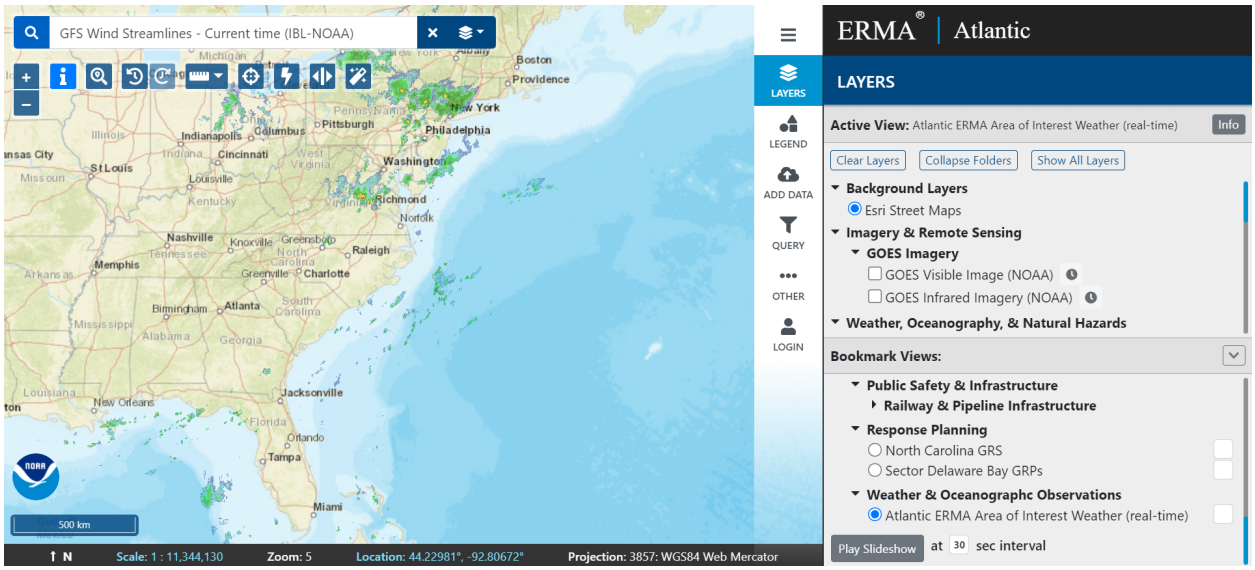
1. Click the Expand button on the Bookmark Views control at the bottom of the Layers tab to open the Bookmark Views panel.



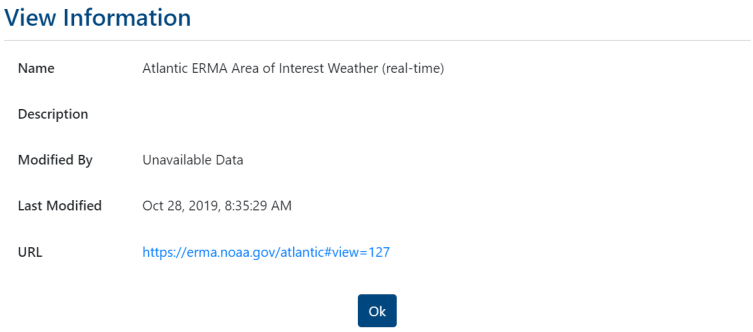
2. Once the panel has expanded you will see Bookmarks (in blue text) and also folders nested with more Bookmarks of a common topic.



3. Click on one of the Bookmark names. The layers will appear on the map and it will zoom to the preset zoom level. The TOC will update to show only those layers included in the Bookmark.

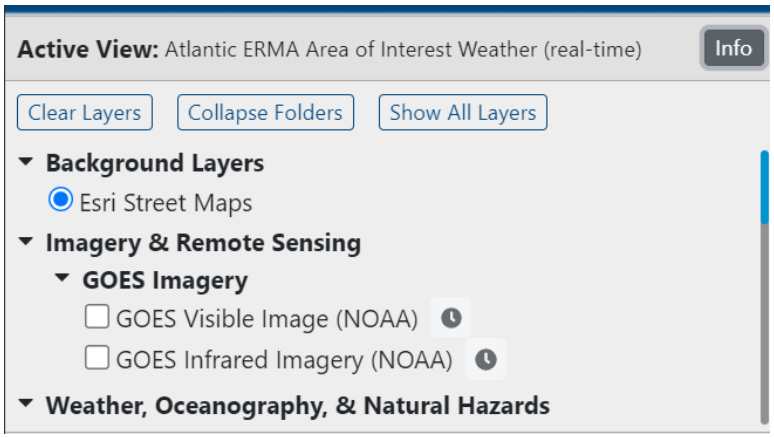


4. At the top of the TOC is the Bookmark's name and an **Info** button. Clicking this button will pop open a new small window giving you information on when the Bookmark was last modified and a link that you can share with others.



NOTE: *The number at the end of this Bookmark link (ex. View=1738) will not change over time, even when new layers are added or edited to the Bookmark. This is a convenient way to share the link in a document or with others without worrying about changes to the link. If the Bookmark is deleted, however, it will not be accessible any longer.*

5. To exit the Bookmark back to the full TOC, click the **Show All Layers** link at the top of the TOC. You may also want to click on the Clear All and Collapse All links.



To close the Bookmark Views panel, click the Hide button on the Bookmark Views control.

Query Tools Tab

One of the powers of GIS data is the ability to spatially query layers on a map and extract the data from within an area of interest. ERMA has a query tool that allows you to create one or more polygons on the map then analyze ERMA layers using the query tools described in this section.

Using Polygons to View and Analyze Data

ERMA provides three tools for viewing and analyzing data using the polygon(s) that you have created.

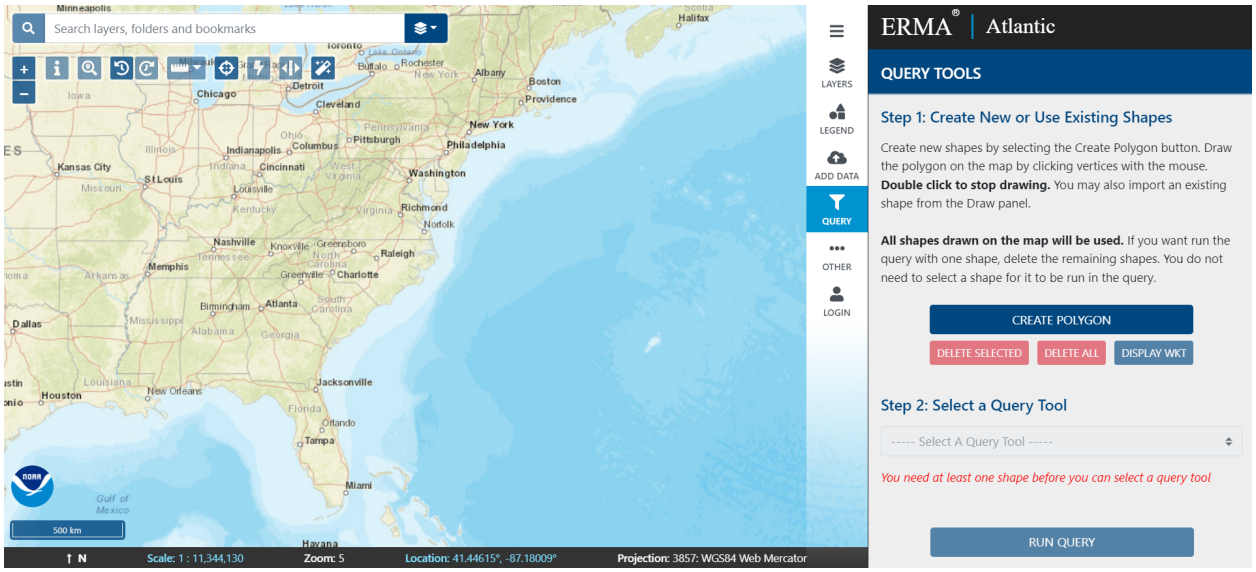
- ERMA Layer Query by Polygon Tool – Queries ERMA layers being viewed on the map.
- NOAA ESI Query Tool - Queries the regional Environmental Sensitivity Index (ESI) database within the map view.
- U.S. Fish and Wildlife Service IPaC Tool – Queries the external Information for Planning and Consultation (IPaC) database.

Creating Polygons for Analysis

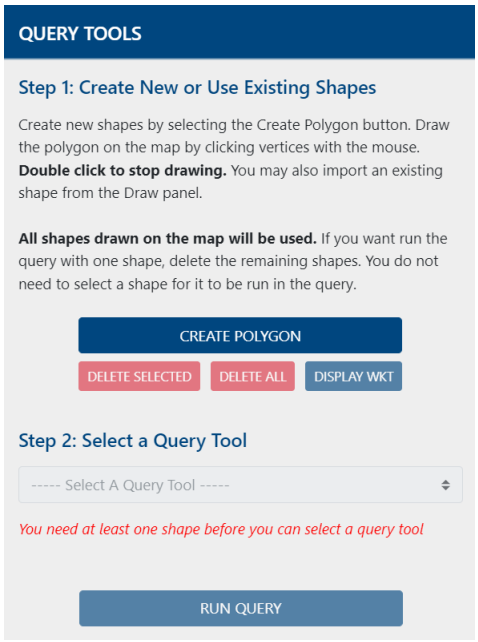
Creating a Polygon

To create a shape on the map:

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



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



3. To make 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. To make a smoother polygon or circle, hold down the Shift key while drawing with your mouse. Double-click to end the drawing.
4. To edit the polygon, click on the edge and move the line to its new location.
5. When the map displays the shape that you want, double-click to end the drawing.
6. You can create as many polygons as you like for querying. Repeat steps 2 through 4 for each additional polygon.

Deleting Polygons

ERMA allows you to delete single polygons or all of the polygons on the map at once.

To delete a single polygon:

1. Click on the polygon that you want to delete and it will be highlighted in dark blue.
2. Click **Delete Selected**. The selected polygon disappears from the map.
3. To delete all of the polygons on the map click **Delete All**.

ERMA Layer Query by Polygon Tool

IMPORTANT: *The ERMA Layer Query by Polygon tool returns data for ERMA-hosted layers only (i.e. Internal services such as shapefiles). It does not return data for layers that are hosted externally (i.e. External WMS feeds such as NOAA Nautical Charts or AIS vessels).*

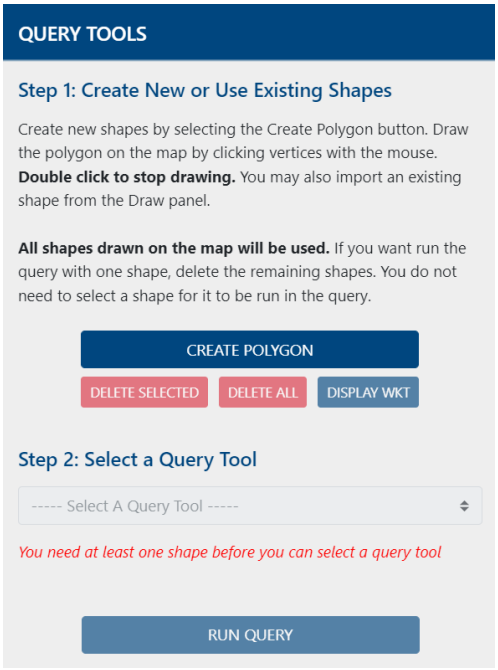
The ERMA Layer Query by Polygon Tool allows you to create a subset of all active layers that are contained completely within the polygon(s) that drawn on the map, or which intersect the drawn polygons. All data for active layers is returned in a new browser window, and it can then be exported as:

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

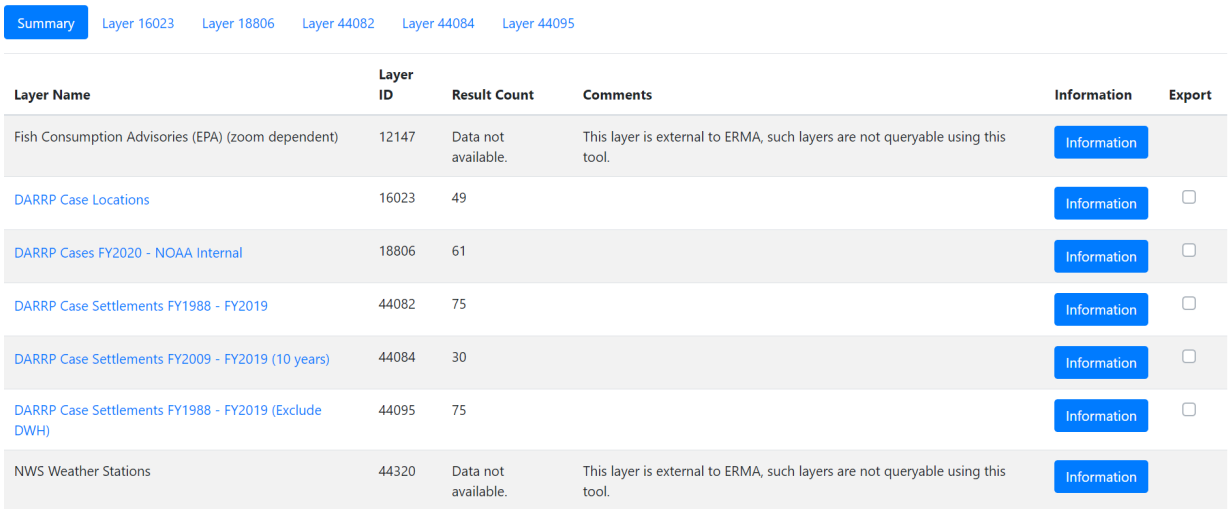
Metadata is available for each layer.

To use the ERMA Layer Query by Polygon Tool:

1. On the **Layers** tab, turn on all of the layers that you want to query.
2. On the **Query Tools** tab, create one or more polygons using the procedure in "Creating a Polygon" on page .
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.

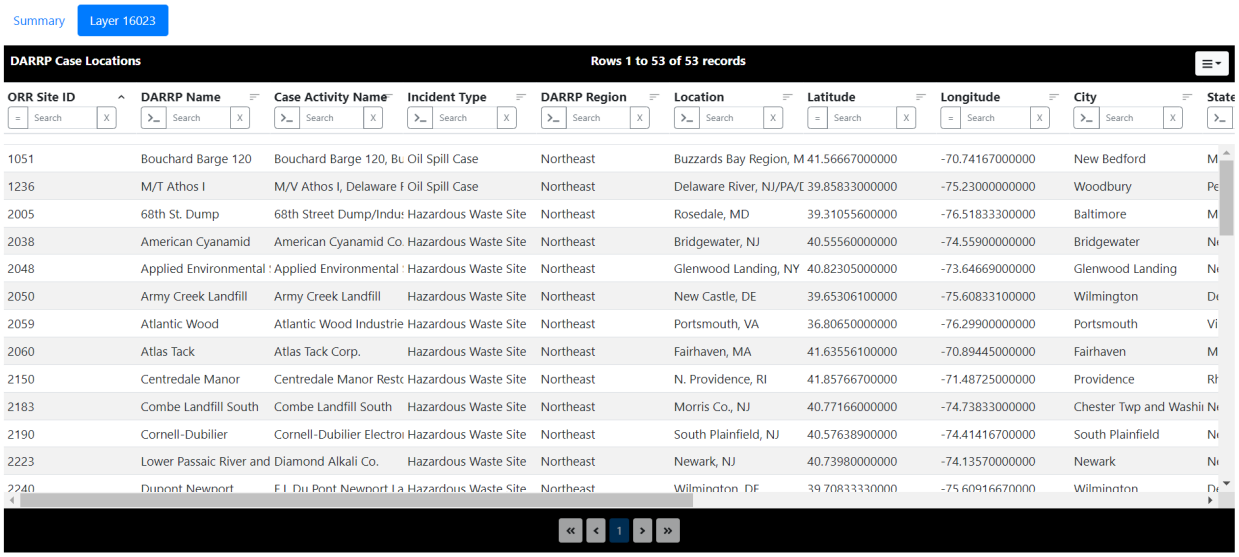


Layer Name	Layer ID	Result Count	Comments	Information	Export
Fish Consumption Advisories (EPA) (zoom dependent)	12147	Data not available.	This layer is external to ERMA, such layers are not queryable using this tool.	Information	
DARRP Case Locations	16023	49		Information	☐
DARRP Cases FY2020 - NOAA Internal	18806	61		Information	☐
DARRP Case Settlements FY1988 - FY2019	44082	75		Information	☐
DARRP Case Settlements FY2009 - FY2019 (10 years)	44084	30		Information	☐
DARRP Case Settlements FY1988 - FY2019 (Exclude DWH)	44095	75		Information	☐
NWS Weather Stations	44320	Data not available.	This layer is external to ERMA, such layers are not queryable using this tool.	Information	

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. Decide whether you want to apply filters to the exported data.
    - If you want to filter the data, select **Apply filters to export** and then continue to step 7.
    - If you want to export *all* of the data, select **Export all data** and then skip to step 14.

7. Clear the checkbox next to each layer that you *do not* want to include in the exported file. Then:
    - If you want to export *all* of the data in the remaining layers, skip to step 12.
    - If you want to export only *some* of the data for at least one of the remaining layers, continue to the next step.
8. Click the tab for the layer that you want to filter.
9. Click **Select Filters** to open a drop-down list.



10. On the drop-down, select the checkbox for each filter that you want to use.
11. Repeat steps 8 to 11 for each additional layer you want to filter.
12. When you are done selecting filters, return to the **Summary** tab.
13. Click the button for your desired data export format. When ERMA has finished creating the export file, a dialog box will ask you where you want to save the file

NOAA Environmental Sensitivity Index (ESI) Tool

This tool allows you to create NOAA Environmental Sensitivity Index (ESI) maps that provide a summary of coastal resources that are at risk if an oil spill, or other hazardous incident, occurs. The summary includes biological resources, sensitive shorelines, and human-use resources.

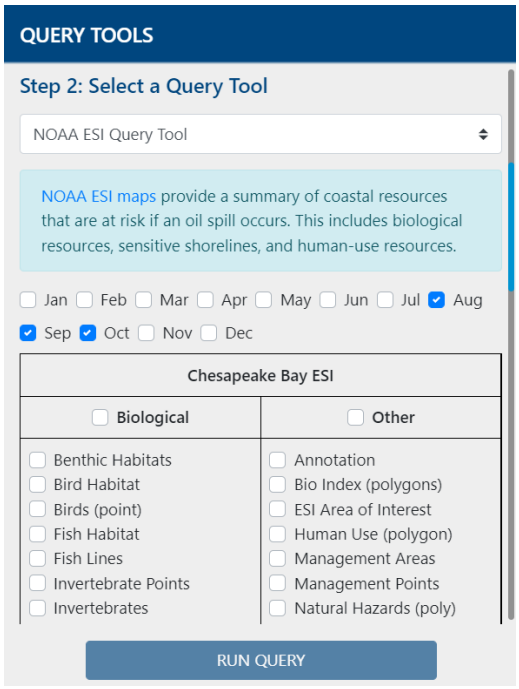
> ***NOTE:*** *You do not need to turn on any ESI layers before following the steps below. You will choose the layers you want during the procedure.*

To run an ESI query:

1. On the **Query Tools** tab, create one or more polygons using the procedure in "Creating a Polygon" on page .

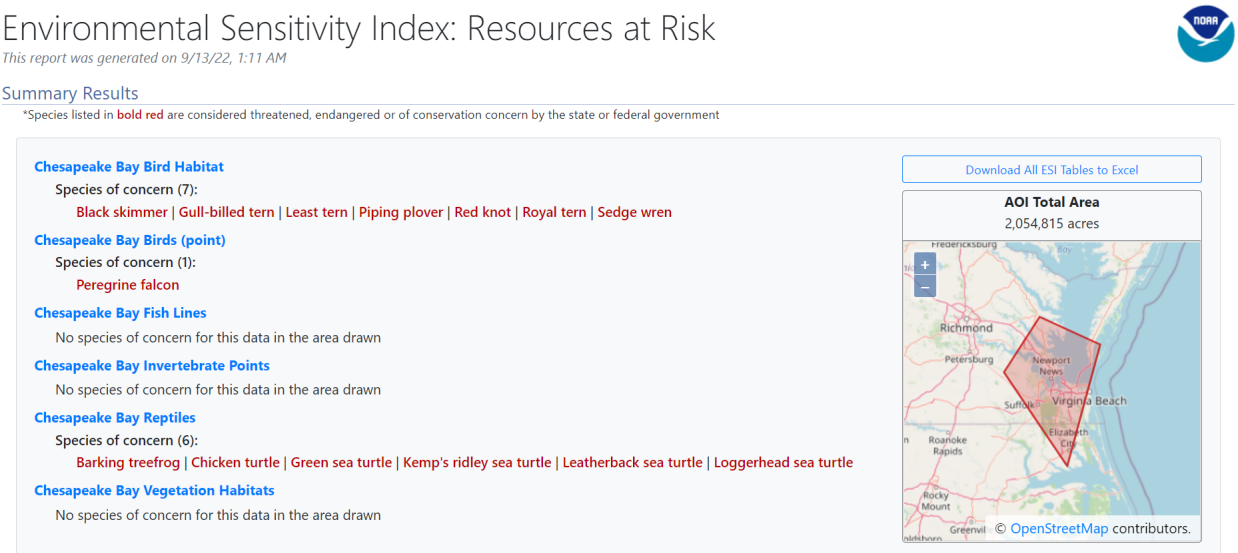
Given the size of the ESI database and the time it takes to process large areas, it is a good idea to select a reasonably small area for your query (an island or section of shoreline, for example) rather than use a large region (such as an entire state).

2. Create one or more polygons using the procedure in "Creating a Polygon" on page .
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. Click Run ESI Query.



5. When the ESI Table Tool appears, select the information that you want included in the ESI report.
6. Select the checkbox for each month that you want the ESI report's data to cover. If you want data for a full year, click **Check All**.
7. 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** checkbox.
8. Click **Run ESI Tool**. 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

This report was generated on 9/13/22, 1:11 AM

Summary Results

*Species listed in bold red are considered threatened, endangered or of conservation concern by the state or federal government

Chesapeake Bay Bird Habitat
Species of concern (7):
Black skimmer | Gull-billed tern | Least tern | Piping plover | Red knot | Royal tern | Sedge wren

Chesapeake Bay Birds (point)
Species of concern (1):
Peregrine falcon

Chesapeake Bay Fish Lines
No species of concern for this data in the area drawn

Chesapeake Bay Invertebrate Points
No species of concern for this data in the area drawn

Chesapeake Bay Reptiles
Species of concern (6):
Barking treefrog | Chicken turtle | Green sea turtle | Kemp's ridley sea turtle | Leatherback sea turtle | Loggerhead sea turtle

Chesapeake Bay Vegetation Habitats
No species of concern for this data in the area drawn

Download All ESI Tables to Excel

AOI Total Area
2,054,815 acres

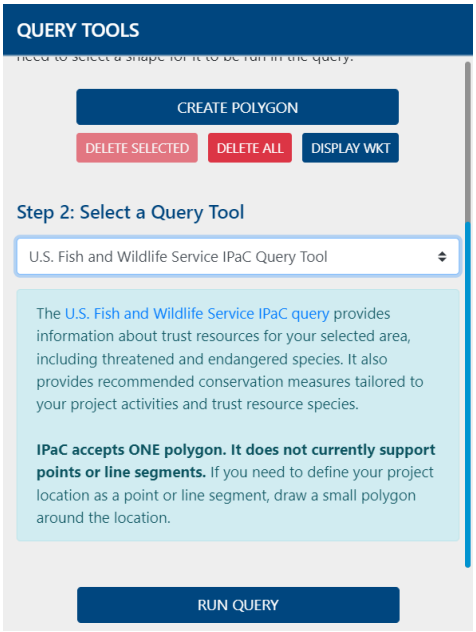
U.S. Fish and Wildlife Service Information, Planning, and Conservation (IPaC) Tool

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 .
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.



4. After a window like the one shown below opens, follow the prompts in the IPaC System to complete your query.

   NOTE: *For help using the IPaC tool, go to* https://ecos.fws.gov/ipa

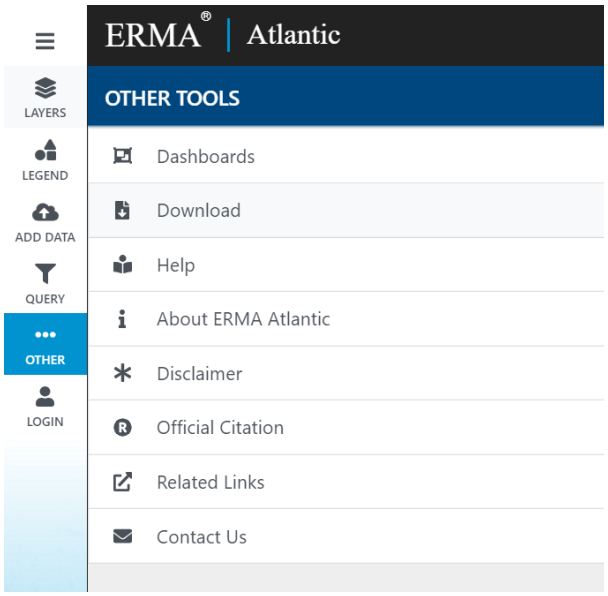
Download Tab

ERMA users can download shapefile data to their computer for use in ArcMap or other GIS application.

***NOTE**: Not all layers are available to download, some may be restricted.*

To download shapefile data:

1. On the **Layers** tab, turn on the layers that you want to download.
2. Select the **Other** tab, then 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.

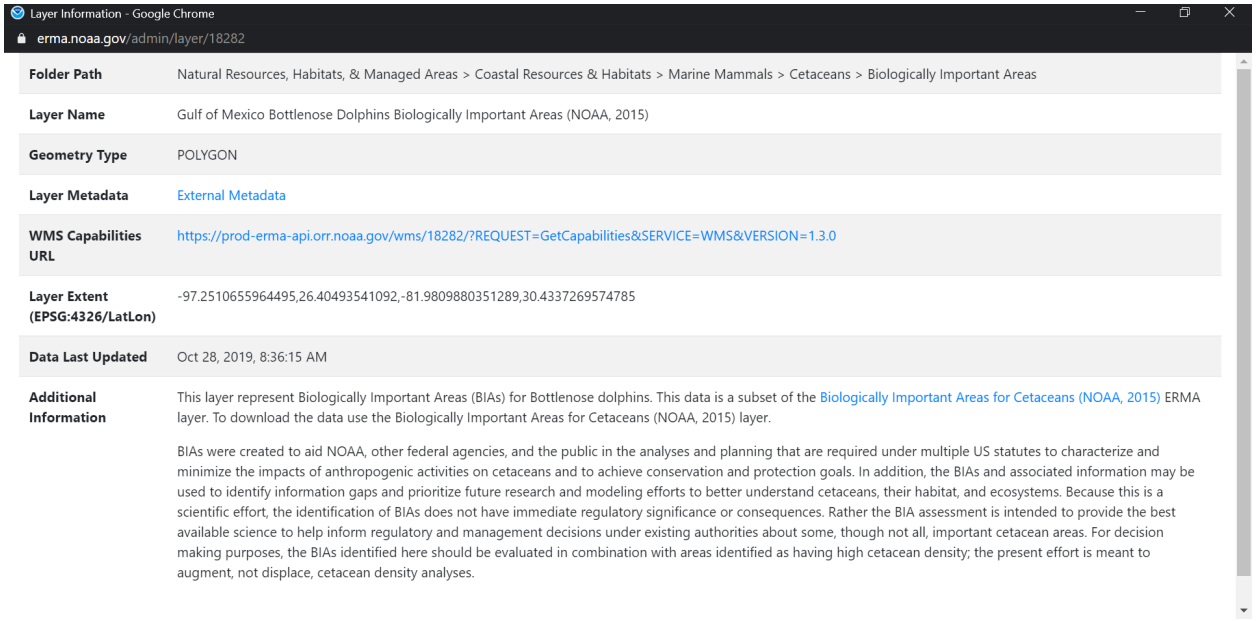


3. After reading the **Terms of Use**, check the box agreeing to these terms.
4. Click **Download Shapefiles**. Your browser will then prompt you to save a ZIP file that contains the full shapefile data.
   - No legend information is downloaded unless a LYR legend file was originally uploaded with the 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. Within that ZIP file are individual folders for each shapefile.

Interoperability

Sharing datasets among agency partners who use different systems is integral in the modern era of web mapping technology. One of ERMA's strengths is its ability for "interoperability" between other web mapping and database systems. ERMA has been developed to easily ingest different types of data from our partners, whether a WMS, ArcREST, or GeoRSS data feed from different server databases. For example, the field data collected by the EPA and managed in a database on their server can be quickly fed into ERMA. This allows the EPA to manage its own data, but for ERMA to display it to our specific audience. Our ERMA data managers work throughout the year with agency partners to ensure that ERMA can ingest their data seamlessly when an emergency situation may occur.

Datasets that ERMA takes in and displays from other agencies will have an **ERMA WMS Capabilities** link in the layer's metadata lite going to the host agency's capabilities page. The user is able to use this information to bring the data into their own project.



In addition to taking in external datasets, ERMA can provide WMS data feeds for all layers that it hosts as a shapefile and may not have a data feed from its originator. In a layer's metadata lite window is an **ERMA WMS Capabilities** link that a user can use to bring the ERMA data into their own project.

ERMA can also provide WMS feeds to restricted datasets such as trajectories, field sampling, or SCAT data that may be created during an incident. The user will need to work with the ERMA data manager to obtain the token credentials for ingesting the protected ERMA WMS data.

Draw Tab

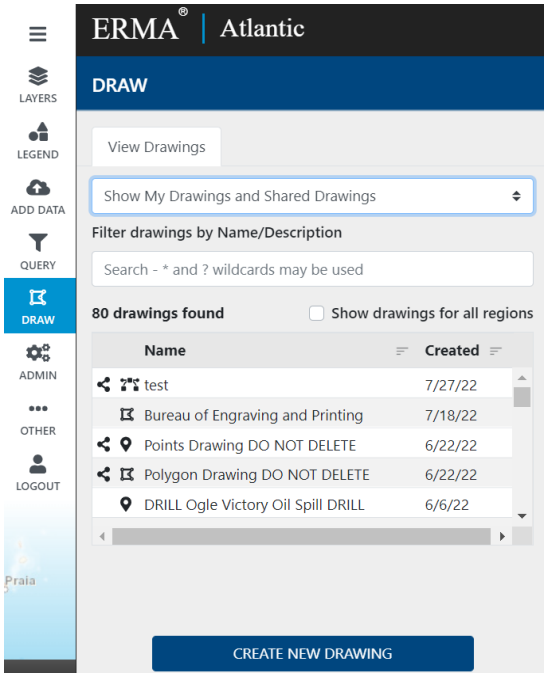
The **Draw** tab allows you to draw points, lines, and polygons on the map, assign attributes, and share them with other ERMA users with the appropriate permissions. The drawings can also be made into ERMA layers in the Table of Contents and downloaded as GIS shapefiles.

Draw Tab Overview

View list of Drawings:

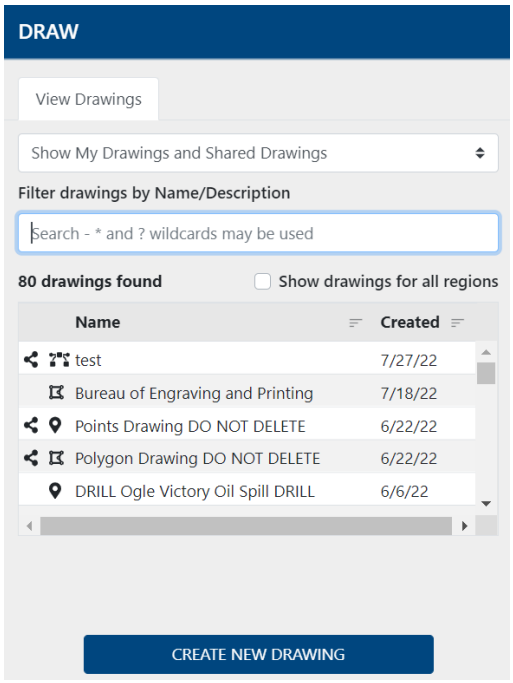
Depending on your account permissions you will see up to four options to view different Drawings:

- **My Drawings**: Only the Drawings you've created.
- **My Drawings + Shared Drawings**: The default setting of your Drawings and any shared ones.
- **Shared Drawings**: Only shared Drawings.

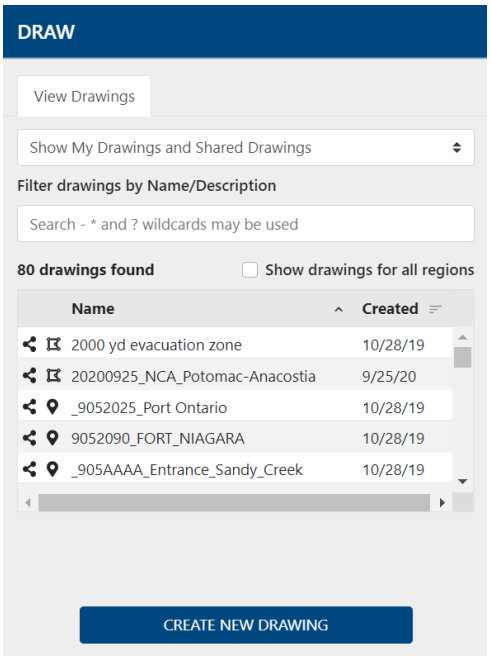


An additional default setting is the **Show drawings for all regions** checkbox. If you have permission to see other regions then you will be able to see those drawings when this box is checked.

To easily **search** the Drawings by Name or Region, type in the Search box and the Drawings table will be filtered by your search criteria.



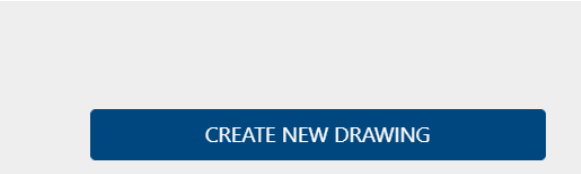
You can also **sort** the Drawings by Shared status, Name, or Region. Click on the field name and the column will automatically sort. A small black arrow will appear above the column that is being sorted.



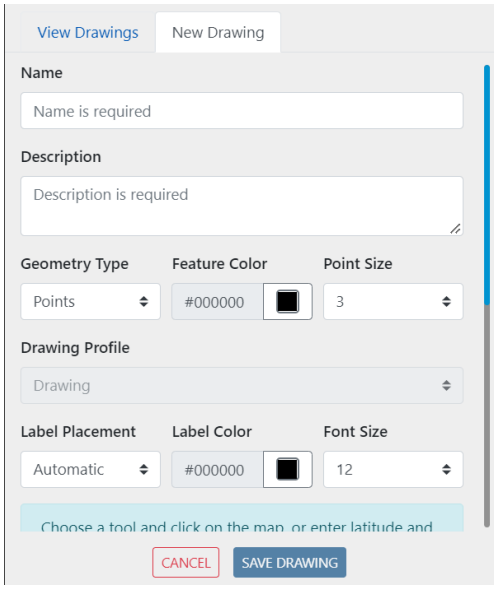
Creating a New Drawing

To create a new Drawing:

- Select the **Draw** tab, and click **New Drawing**. The Create New Drawing panel will appear.



NOTE: When users click the draw tab, by default the user will see My Drawings in their region.



1. **Step 1: Name & Describe Your Drawing**. In the **Name** field (required) type a descriptive name for your drawing. For example:

   In the **Description** field (required), type of brief description of the drawing. This description will populate the metadata lite once the drawing is saved and the layer is created.

2. **Step 2: Choose the type of drawing**. In the drop-down menu you can pick points, lines, or polygons.

   NOTE: Until you have drawn a feature you can change the geometry type. Once a feature is drawn, you will need to either click cancel at the top right or delete all added features to change geometry type.

3. **Step 3: Select a Drawing Profile.** The user has the option to use a Drawing Profile to aid in the creation of a drawing. This option utilizes pre-defined Attribute Field Names and can also use spatial coverages to auto-populate spatial information (ex: County, USCG Sector, etc) for efficiency and consistent data structures.
4. **Step 4: Label Settings.** Use the drop down menu to select label placement, and select color or font size in the same section.

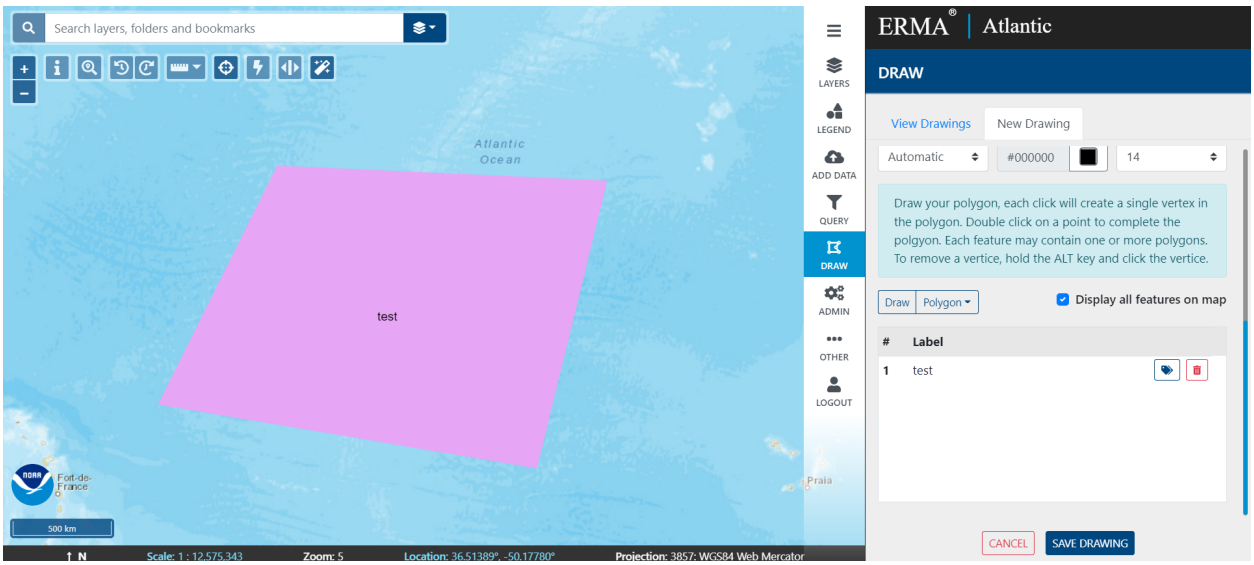
   NOTE: *By selecting Hide Label Settings these options will return to hidden.*
5. **Step 5: Create (or modify) a drawing feature.** Select your **Drawing Color**, click the appropriate drawing tool, and add the features by clicking the map to or typing a lat/long. Click the **Transparent** checkbox to be able to see through the feature on the map.
   a. Polygon options – Choose a free-drawing polygon, a square, or a circle to create. When drawing the circle it will automatically show you the radius of the feature so you can make adjustments. To draw the free-drawing polygon, click the vertices on the map and double click to close the polygon when finished. A single click starts and finishes circles and squares.
   b. Line options – Click on the line icon then use your mouse to create the vertices on the map. Double click to complete the end of the line when finished.
   c. Point options – Click on the point icon then click on the map to create a new feature. The latitude/longitude fields will automatically be populated. Alternatively, you can enter a latitude/longitude in the fields then click the **Add Point** button to have it appear on the map. You can change the latitude/longitude and click the **Update Point** button as needed.

   Each feature you create will be listed in a table at the end of Step 5. You can edit a feature by clicking on it in the table and making changes to its size, color, etc. in the preceding steps. You can delete a feature by clicking on it in the table then selecting the trash can symbol next to it.

6. **Step 6: Label and set attribute values.** Once the shape has been created you have the option to create a **Label** and/or **Set Attribute Values** for each feature. If you have chosen to add attribute fields you can enter in values for the attributes in this section.

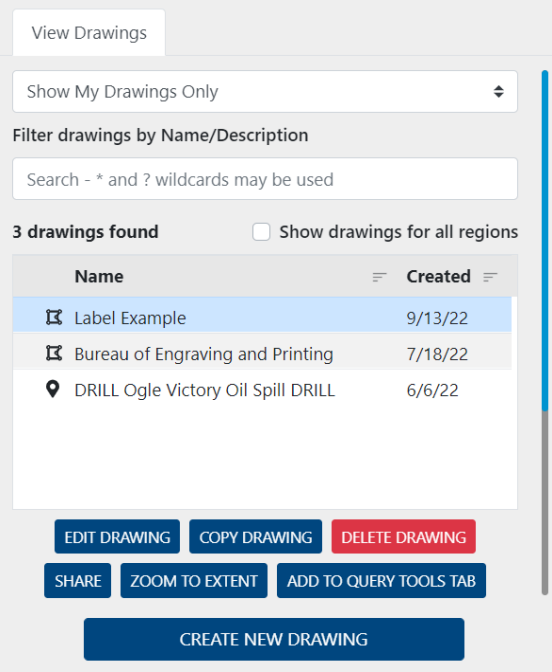
   The **Display All Features On Map** checkbox allows you to show all or only a selected feature on the map as you work.

   NOTE: *All shapes in each feature will share the same fields. If you need different fields for other shapes then you will need to add another feature.*



7. Finally, click the **Save Drawing** button to add your Drawing to the table. ERMA stores the following metadata:
    - The Drawing name
    - Your user name
    - The contents of the **Description** field
    - A Profile name
    - The date / time the Drawing was created
    - The Drawing Layer ID number

8. Once you click Save Drawing, your drawing will be listed in **My Drawings** under View Existing Drawings. If you have the permissions to do so, here you can choose to **Share** your drawing with other users who have the permissions to see shared drawings. A green checkbox will appear next to the Drawing name indicating it has been shared.



NOTE: *Drawings can only be deleted by their owner or by those with Admin permissions; a warning message will appear to ensure you want to delete your drawing.*

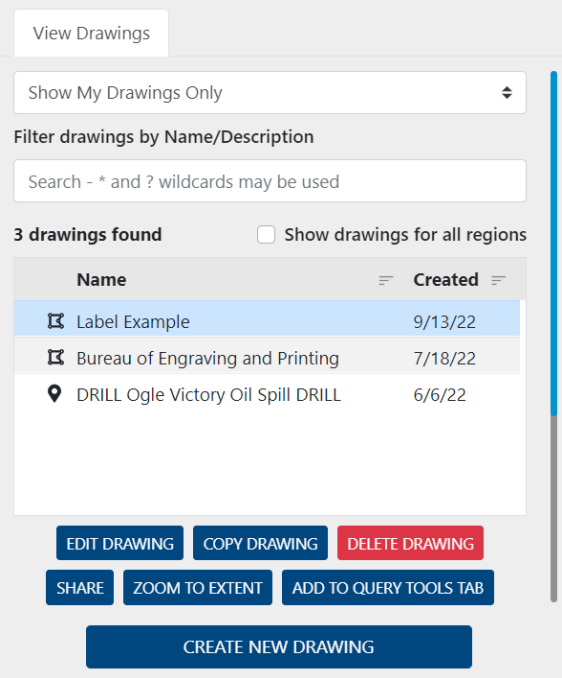
Editing a Drawing

ERMA allows you to modify Drawings that you created. Users with Admin permissions can edit Drawings created by others.

To edit an existing Drawing:

1. Select the **Draw** tab, and open the drop down bar to locate one of the options:
   - **Show all Drawings** – All drawings from across all ERMA regions will be displayed in a searchable table below.
   - **My Drawings** – Only drawings you have created will be displayed in a searchable table below.
   - **My Drawings + Shared Drawings** – Both drawings I have created and drawings that other users have shared will be displayed in a searchable table below.
   - **Shared Drawings** – Only drawings that other users have shared with will be displayed in a searchable table below.

2. Once you have found the drawing you would like to edit, **select** the row. ERMA will automatically zoom to the extent of the drawing.



3. Directly below the table you will find the **edit** button (see image above), click it.

   NOTE: *You can only edit drawings that you own or if you have Admin permissions.*

4. The **Edit Drawing** panel will appear. You will have the options to change, subtract, or add features to the drawing.

5. Based on your level of privileges, do any or all of the following:

   - Enter a new name or description, or use the Color drop-down list to change the color of the drawing's figure.
   - Change the figure's shape by clicking on any of the figure's vertexes (or on the grab point located in the middle of each side) and dragging.
   - Add additional points, lines, or polygons by selecting the appropriate tool and entering in coordinates or simply clicking on the map.

   NOTE: *If at any time you would like to cancel the edits that have been made to the drawing, click* **Cancel** *at the bottom of the panel.*

6. Once you have made your edits to the geometry, click **Update Point/Polygon/Line**.

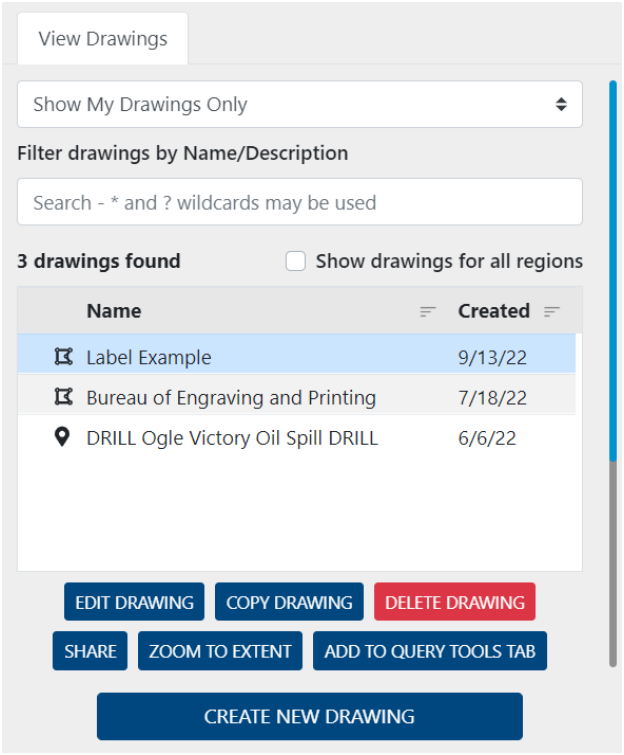
   NOTE: *You cannot add new geometry of a different type. All drawings must consist of the same type of geometry.*

7. If you would like to make edits to labels or set attribute values, do so in the last step, then click **Save Drawing**.

To Copy an Existing Drawing:

You can copy one of your own drawings or another user's drawing and edit as needed.

1. In the Drawings table highlight the drawing you would like to copy.
2. Below the table click the **Copy** button.
3. The **Create New Drawing** dialog panel will appear. Give a name to your copy, and edit the description, color, shape, or attributes. Click the **Save** button when finished.
4. The copied Drawing appears in the table. By default it is not shared. Click the **Share** button to share with other users.



Adding a Drawing to the TOC

There are three ways to add Drawings to the Layers tab, or ERMA Table of Contents:

- Add a drawing to the My Drawings folder
- Add a drawing to the Shared Drawings folder
- Add a drawing to a folder within the TOC

Each of these requires different account permissions.

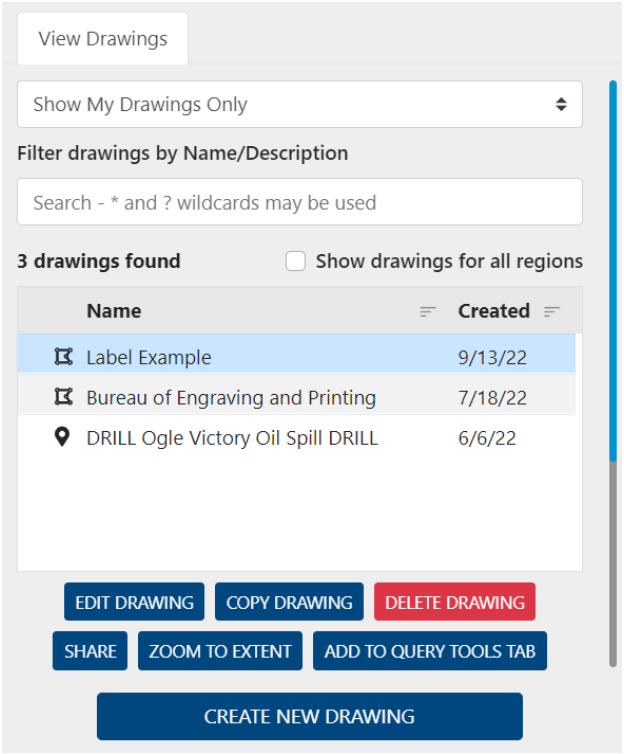
To add a Drawing to the My Drawings folder:

Drawings that are not shared will appear in the My Drawings folder.

1. When you've completed your drawing click the **Add to Layers Tab** button below the drawings table. This will make the drawing appear in your **My Drawings** folder at the bottom of the TOC. No other users will be able to see these drawings.
2. To remove this layer, click the garbage can icon next to the layer's name.

To add a Drawing to the Shared Drawings folder:

1. Drawings in the **Shared Drawings** folder must first be shared in the Draw tab. In the drawings table select the drawing you want to share and click the **Share** button. A green checkmark will appear next to the drawing's name.



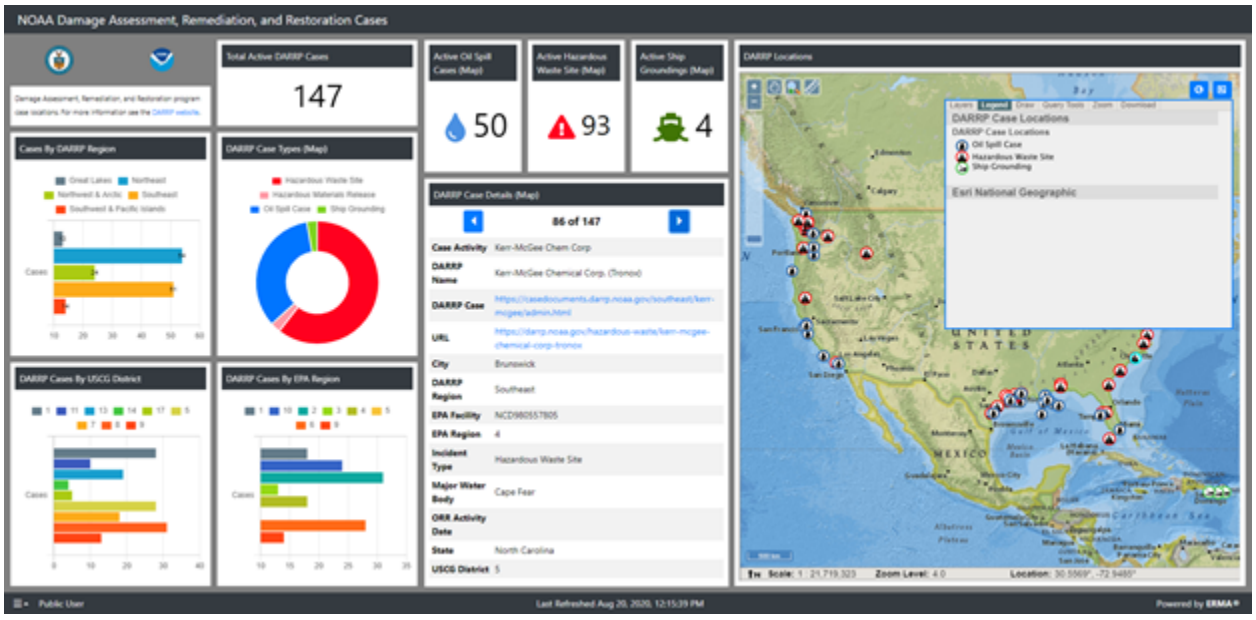
Next, click the **Add to Layers Tab** button. ERMA will take you to the **Layers** tab. At the bottom of the TOC will be a folder called **Shared Drawings** with your new layer. Currently the layer is set to Responder and anyone with access to ERMA can see the shared drawing.

ERMA® Dashboard Guide

Dashboards are an information management tool, which provide insights to geographic information. They are designed to display multiple visualizations in a single view while showcasing data metrics.

To view a dashboard click on one from the available list:

1. Click on “public user” or your user name to load other dashboards on the bottom left.
2. To refresh the data on the dashboard click where it has the last refresh time stamp.
3. The map can interact with the metrics shown. If the map is moved the metrics will update accordingly if they are tied to the map. Simple map tools are available once clicking on the map, like identify.
4. If a chart has a legend you can click on an item to remove it from the chart. Chart text will appear when the mouse is hovered over a segment.



Last Refresh Date: ERMA relies on many live data feeds for it’s information. The “Last Refreshed” date on the footer bar displays the current time of which the data has been updated in the dashboard.

Navigate Directly to ERMA Regional Sites: Select the menu icon on the bottom left part of the footer. Click the pop up to choose the desired ERMA region.

Loading Dashboards: Also located within the menu icon is the “Load Dashboard” feature. Use this to switch between different available dashboards.

Appendix

This user guide was developed by NOAA's Office of Response and Restoration Spatial Data Branch. For more information please contact orr.erma@noaa.gov and see the following resources.

- Office of Response and Restoration ERMA webpage
- Office of Response and Restoration Environmental Sensitivity Index webpage
- Office of Response and Restoration DIVER webpage
- ERMA Citation
    - *ERMA. 2015. Web Application: [Regional ERMA Site] Environmental Response Management Application, National Oceanic and Atmospheric Administration. Retrieved: [Month, Day, Year], from http://erma.noaa.gov/[region]*
- ERMA Disclaimer
    - *This Regional ERMA site was constructed for the purpose of presenting data to assist in response planning, site assessment and restoration activities and decision making in the region. Unless otherwise noted, the data contained within this site have undergone only limited NOS quality assurance review; however, the data may have not yet undergone final verification by the data producer. Users of these data should refer to the original, authoritative sources and review the provided metadata to understand the currency and limitations of the data from these data providers. NOAA cannot guarantee the accuracy or completeness of data provided by other agencies or partners.*
- NOAA National Ocean Service Privacy Policy