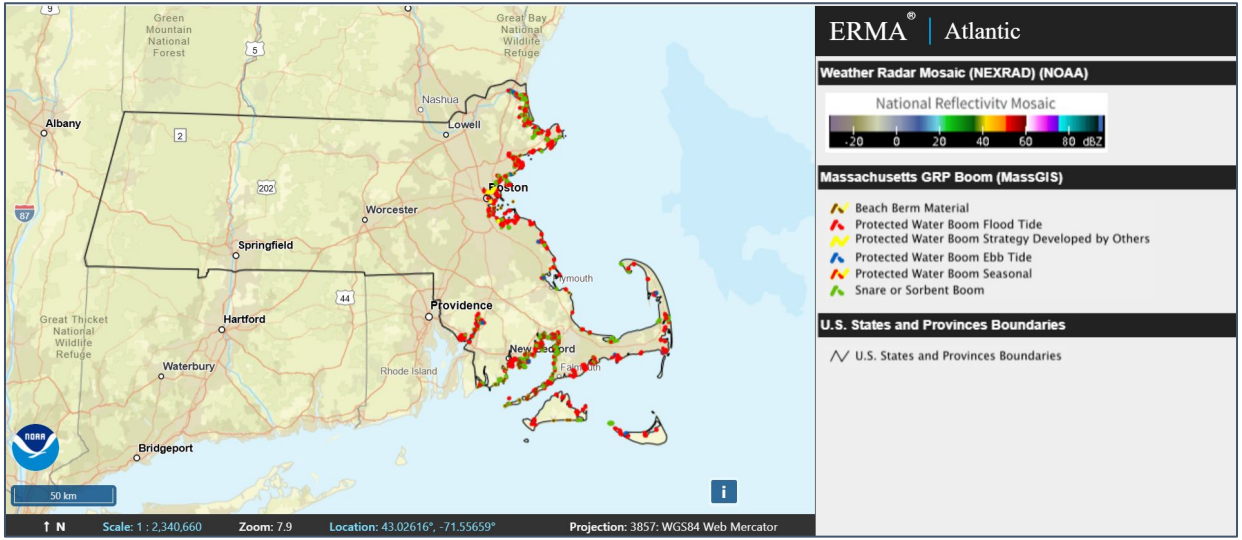
The Environmental Response Management Application ERMA®

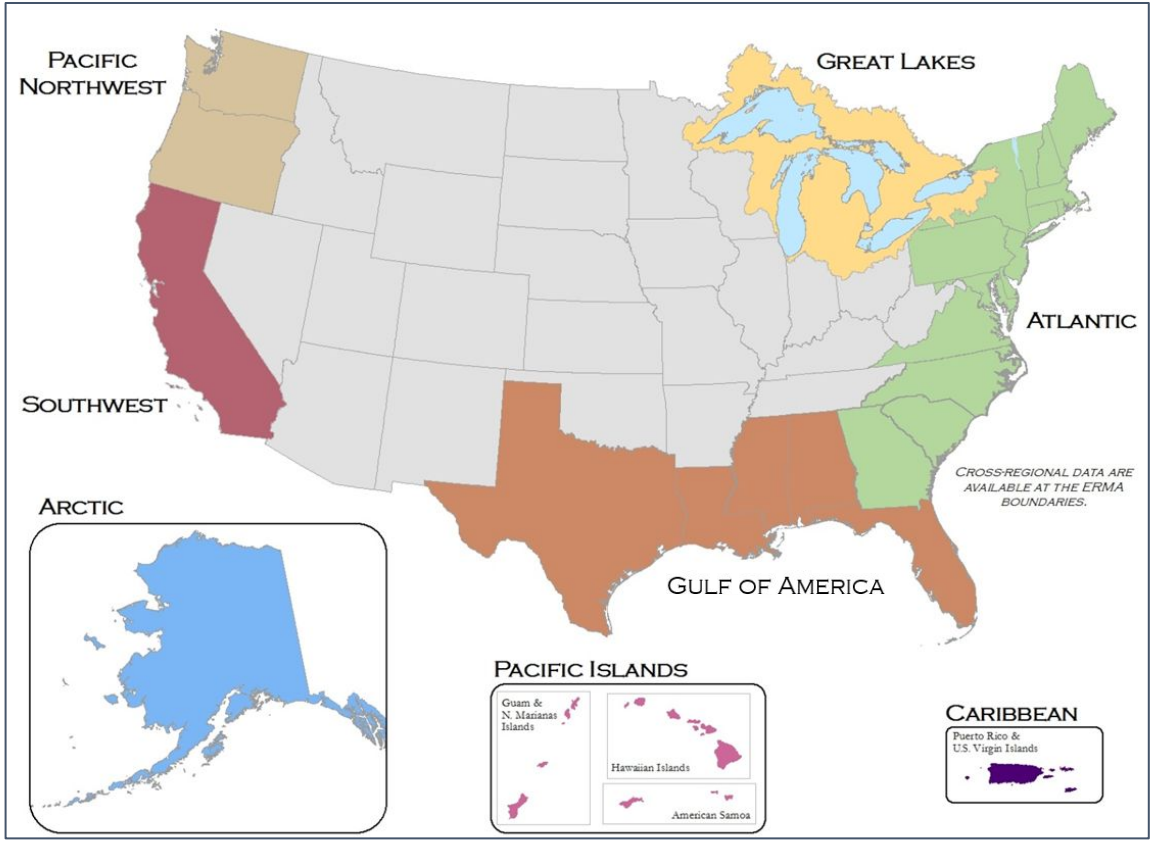


Matt Dorsey
Office of Response & Restoration
Assessment and Restoration Division
Spatial Data Branch

https://erma.noaa.gov/atlantic

ERMA Regions

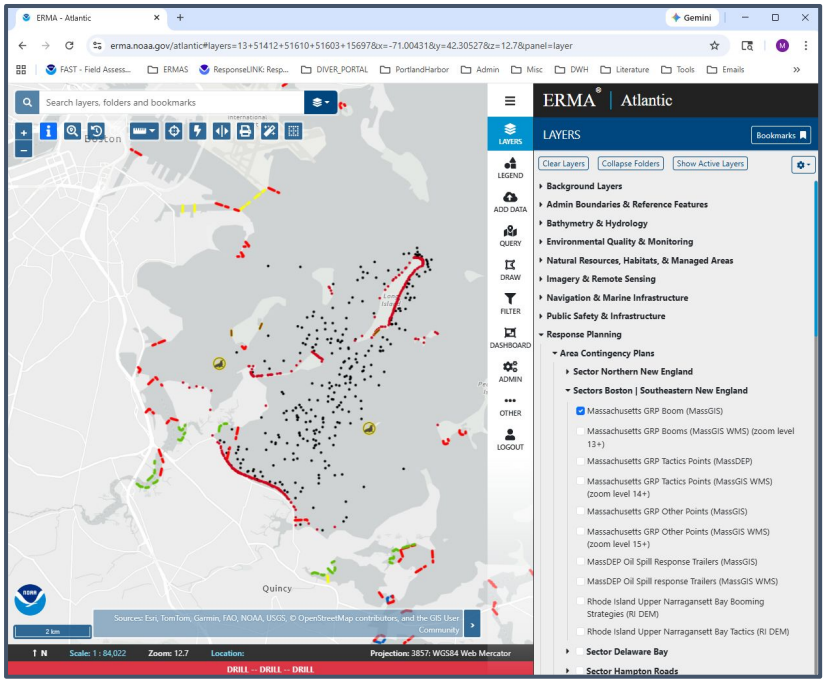
https://erma.noaa.gov/atlantic



Key Functionality

https://erma.noaa.gov

- **ERMA is an online mapping tool and Common Operational Picture (COP) used for visualizing information relevant to oil spills and natural disasters**
- **Provides centralized access to information**
- **Tiered system security that protects data. Internal and external audience**
- **Create and view customized sets of layers quickly**
- **Investigate and compare data quickly with Dashboards and Query Tools**
- **Data Interoperability with RP and other agencies**



ERMA Accounts

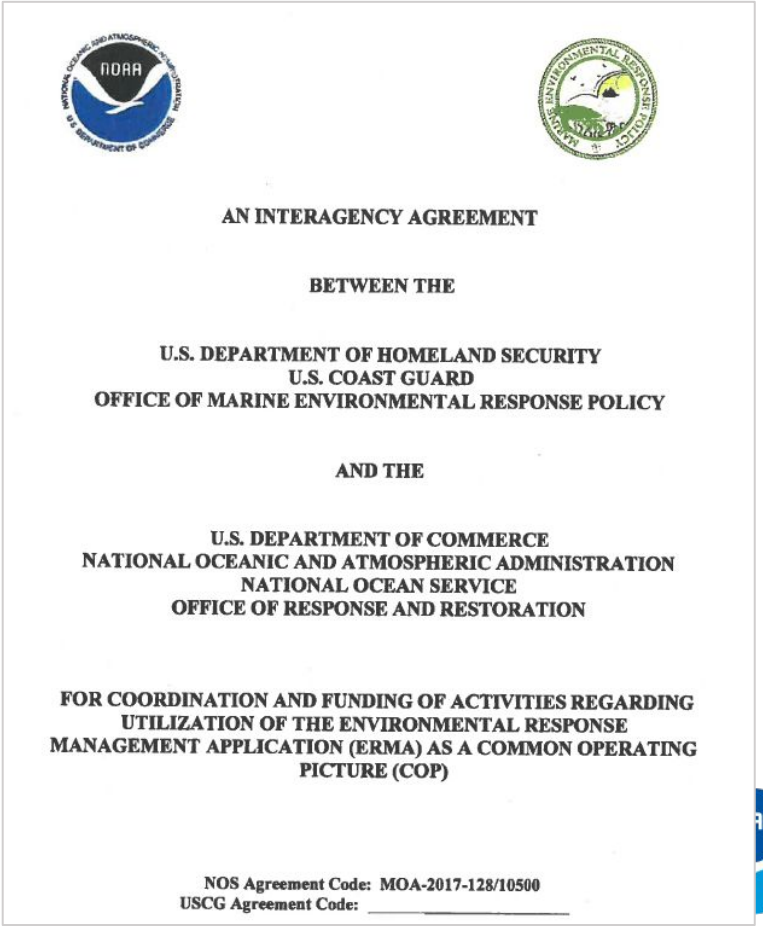
- **Public access - no login required**
- **Restricted accounts:**
  - **Verified by NOAA**
  - **Various levels of access**
    - **Active incidents**
    - **Sensitive datasets**
    - **NRDA/Trustee**
    - **Drills**
  - **Password reset 90 days; inactive accounts 6 months**
  - **Data available only to appropriate users and use**



ERMA is a USCG MER COP

USCG and NOAA Agreement signed in 2018, renewed in 2024

Agreement Purpose:
“Standardize the use of NOAA’s Environmental Response Management Application (ERMA®) as the Common Operating Picture (COP) for USCG-led training, exercises, oil spill responses and releases of hazardous substances, pollutants, and contaminants”



AN INTERAGENCY AGREEMENT

BETWEEN THE

U.S. DEPARTMENT OF HOMELAND SECURITY
U.S. COAST GUARD
OFFICE OF MARINE ENVIRONMENTAL RESPONSE POLICY

AND THE

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
OFFICE OF RESPONSE AND RESTORATION

FOR COORDINATION AND FUNDING OF ACTIVITIES REGARDING UTILIZATION OF THE ENVIRONMENTAL RESPONSE MANAGEMENT APPLICATION (ERMA) AS A COMMON OPERATING PICTURE (COP)

NOS Agreement Code: MOA-2017-128/10500
USCG Agreement Code: _____

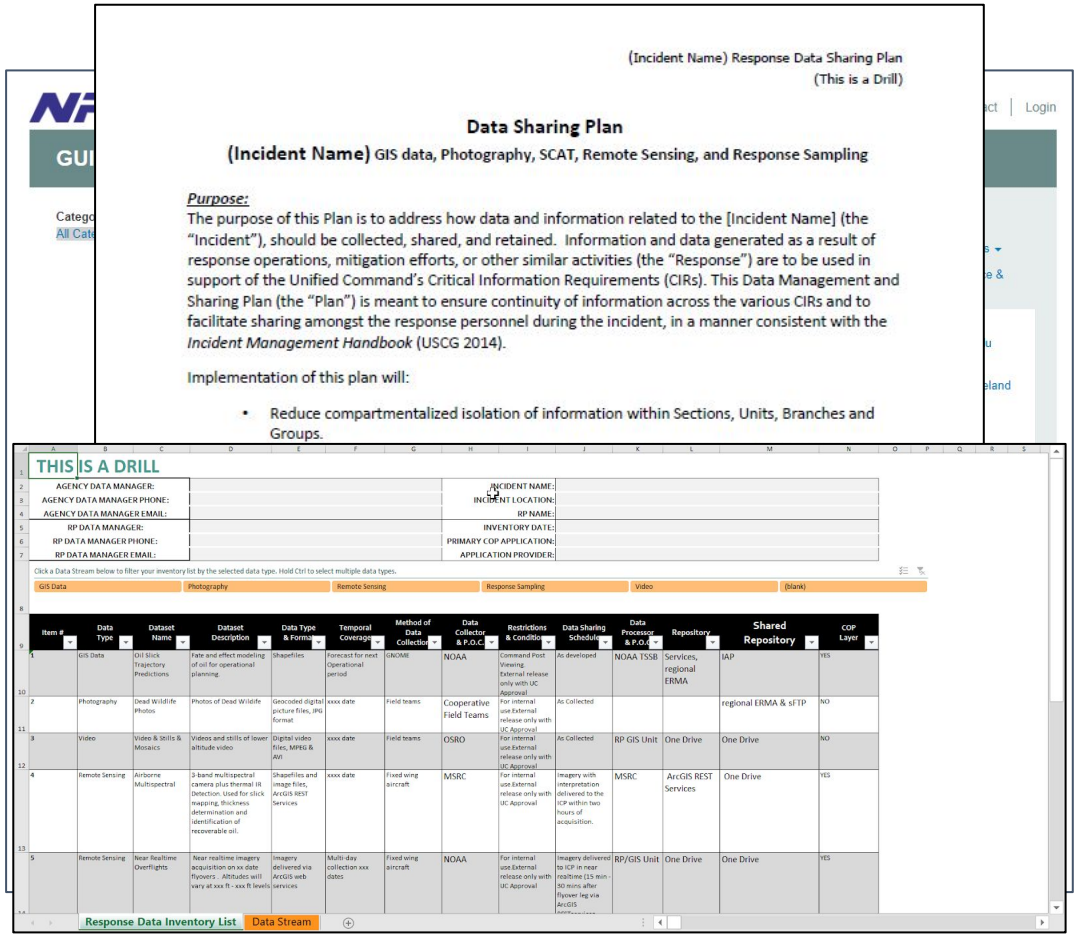
ERMA Support

- **ERMA is available 24/7/365**
- **If specific support is needed for a drill or incident, coordinate with NOAA SSC**
  - **Small incident = remote support**
  - **Large incident = dedicated ERMA staff on-scene**
    - **Immediate Field Data QA/QC & Daylight Data Gaps**
    - **Ensures Highest Quality Data for Unified Command**
    - **Situational Awareness to Off-Site Leadership & Partners**
    - **Ensures Federal Retention of Response Data**

Data Sharing Plans

- Operational data sharing plans are key to timely and operationally relevant common data across a response
- Data sharing plans ensure that USCG documentation has copies of all incident related data
- NOAA has worked extensively with USCG (NRT/MER), USEPA and private Industry to create plans widely used by Unified Command and FOSCs
- Data Sharing Plan would be a first priority to ensure coordination across all parties in the response

https://www.nrt.org/



(Incident Name) Response Data Sharing Plan
(This is a Drill)

Data Sharing Plan

(Incident Name) GIS data, Photography, SCAT, Remote Sensing, and Response Sampling

Purpose:

The purpose of this Plan is to address how data and information related to the [Incident Name] (the "Incident"), should be collected, shared, and retained. Information and data generated as a result of response operations, mitigation efforts, or other similar activities (the "Response") are to be used in support of the Unified Command's Critical Information Requirements (CIRs). This Data Management and Sharing Plan (the "Plan") is meant to ensure continuity of information across the various CIRs and to facilitate sharing amongst the response personnel during the incident, in a manner consistent with the *Incident Management Handbook* (USCG 2014).

Implementation of this plan will:

- Reduce compartmentalized isolation of information within Sections, Units, Branches and Groups.

THIS IS A DRILL

AGENCY DATA MANAGER:		INCIDENT NAME:	
AGENCY DATA MANAGER PHONE:		INCIDENT LOCATION:	
AGENCY DATA MANAGER EMAIL:		RP NAME:	
RP DATA MANAGER:		INVENTORY DATE:	
RP DATA MANAGER PHONE:		PRIMARY COP APPLICATION:	
RP DATA MANAGER EMAIL:		APPLICATION PROVIDER:	

Click a Data Stream Below to filter your inventory list by the selected data type. Hold Ctrl to select multiple data types.

GIS Data | Photography | Remote Sensing | Response Sampling | Video | (blank)

Item #	Data Type	Dataset Name	Dataset Description	Data Type & Format	Temporal Coverage	Method of Data Collection	Data Collector & P.O.C	Restrictions & Conditions	Data Sharing Schedule	Data Processor & P.O.C	Repository	Shared Repository	COP Layer
1	GIS Data	Oil Slick Trajectory Predictions	Fate and effect modeling of oil for operational planning	Shapefiles	Forecast for next Operational period	GNOME	NOAA	Command Post Viewing External release only with UC Approval	As developed	NOAA TSSB	Services, regional ERMA	IAP	YES
2	Photography	Dead Wildlife Photos	Photos of Dead Wildlife	Geocoded digital picture files, JPG format	xxxx date	Field teams	Cooperative Field Teams	For internal use External release only with UC Approval	As Collected			regional ERMA & sFTP	NO
3	Video	Video & Stills & Mosaics	Videos and stills of lower altitude video	Digital video files, MPEG & AVI	xxxx date	Field teams	OSRO	For internal use External release only with UC Approval	As Collected	RP GIS Unit	One Drive	One Drive	NO
4	Remote Sensing	Airborne Multispectral	3-band multispectral camera plus thermal IR Detection. Used for slick mapping, thickness determination and identification of recoverable oil.	Shapefiles and image files, ArcGIS REST Services	xxxx date	Fixed wing aircraft	MSRC	For internal use External release only with UC Approval	Imagery with interpretation delivered to the ICP within two hours of acquisition.	MSRC	ArcGIS REST Services	One Drive	YES
5	Remote Sensing	Near Realtime Overflights	Near realtime imagery acquisition on xx date flyovers . Altitudes will vary at xxx ft - xxx ft levels	Imagery delivered via ArcGIS web services	Multi-day collection xxx dates	Fixed wing aircraft	NOAA	For internal use External release only with UC Approval	Imagery delivered to ICP in near realtime (15 min - 30 mins after flyover leg via ArcGIS	RP/GIS Unit	One Drive	One Drive	YES

Response Data Inventory List | Data Stream

Interoperability

- **ERMA can read in and serve out data through a tokenized access system with partners**
  - **Strict layer, IP or permission-tier access is available**

- **Read in external/partner data services**
  - **Feature-level:** Esri FeatureServer services, GeoJSON
  - **Map-level:** Esri MapServer services, WMS, WMTS

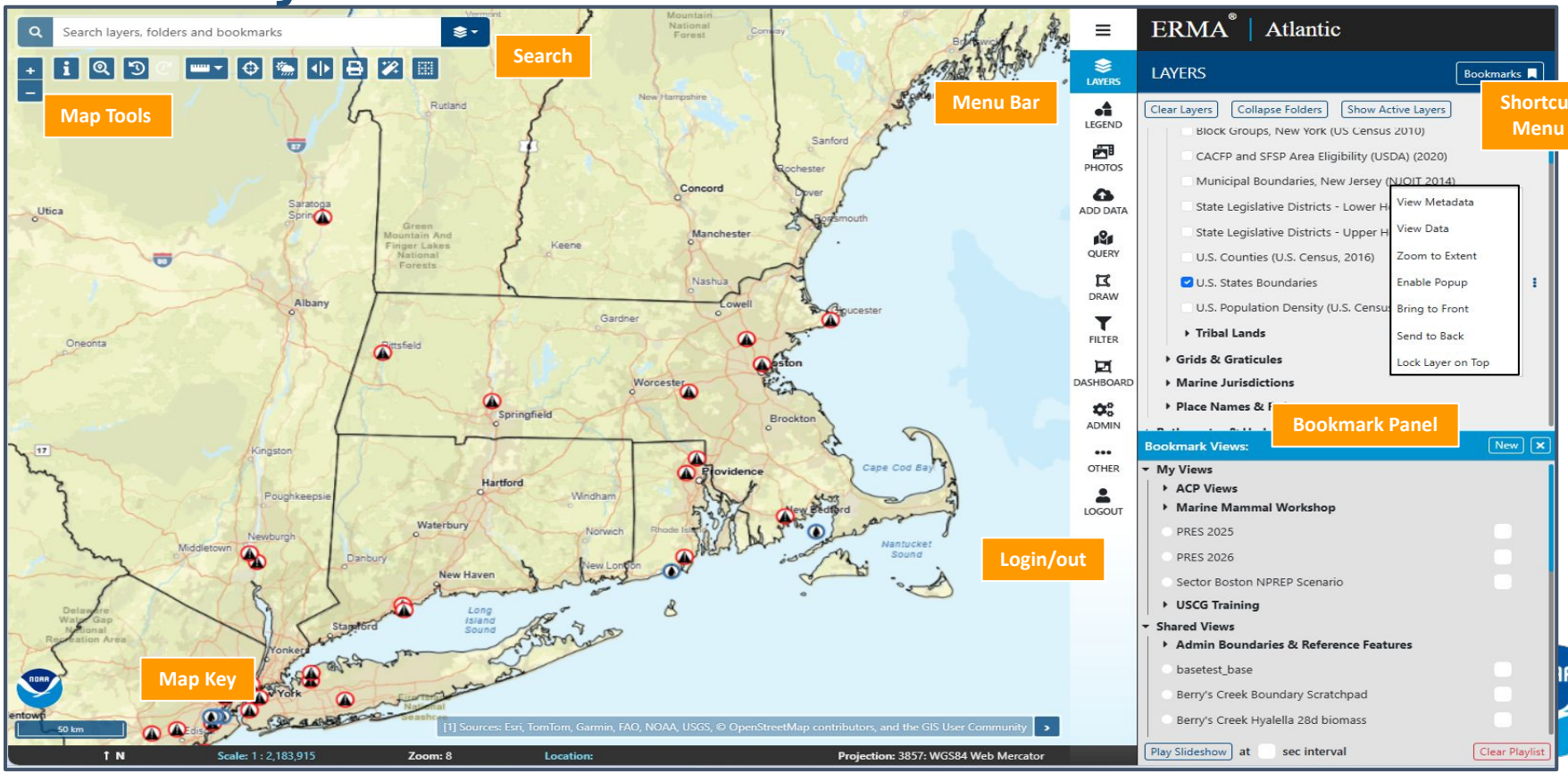
- **Local data can be imported through many formats** (shapefiles, GDB, GeoJSON, csv/Excel, raster formats)



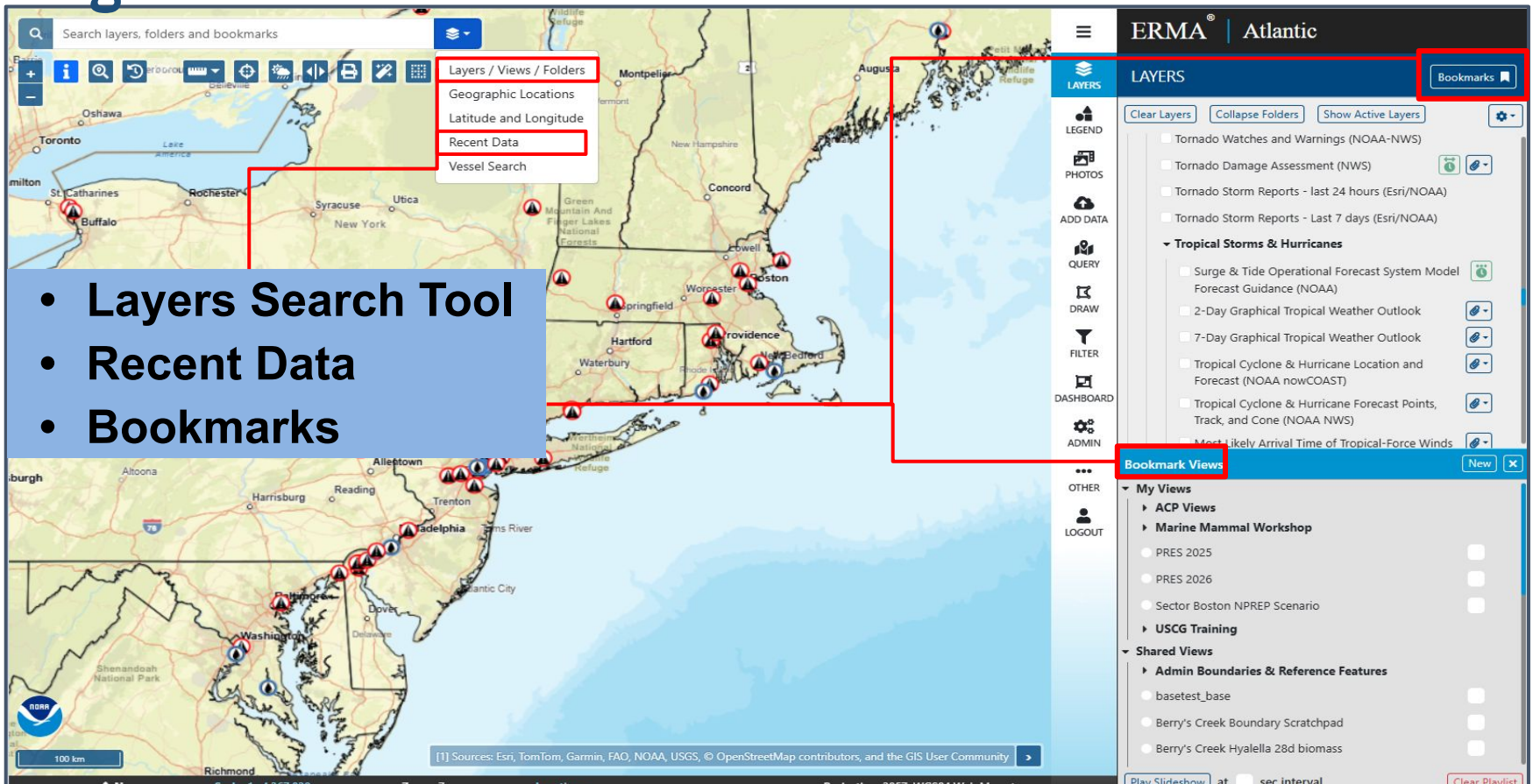
Types of Incident Data in ERMA

- **Operations Section**
  - Incident Location
  - Vessel Locations
  - Dispersant Zones
  - In-Situ Burns
  - Divisions & Segments
  - Booming Strategies
- **Environmental Unit**
  - Threatened & Endangered Species
  - SCAT Data
  - Sensitive Sites
  - Wildlife Observations
  - Overflight Observations
- **Situation Unit**
  - Mirror SitStat Board
  - Trajectories
  - Weather
  - Current Operations
- **Unified Command**
  - Up-To-Date Picture of All Operations
- **JIC**
  - Up-To-Date Picture of All Operations
  - Potential to show publicly released data

ERMA Layout

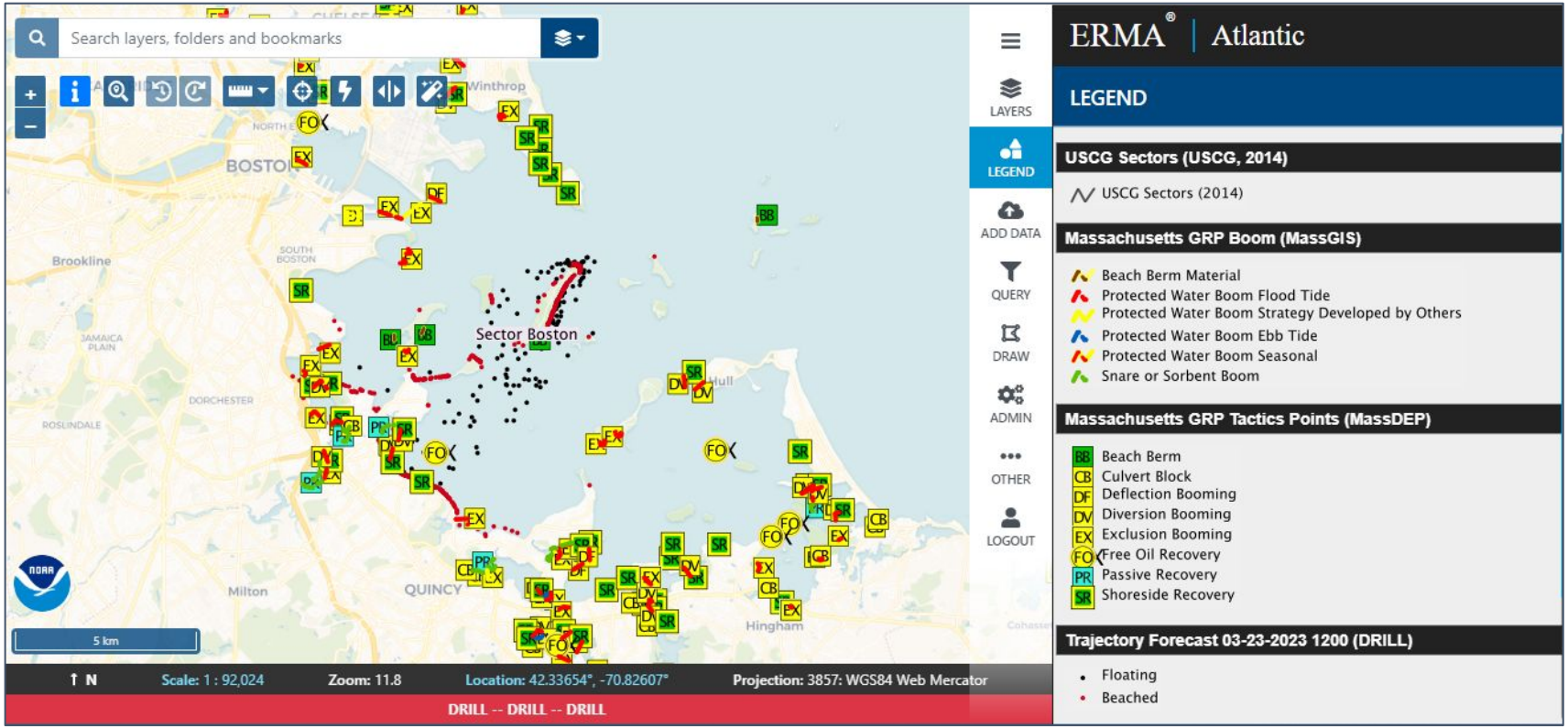

Search layers, folders and bookmarks
Search
Map Tools
Menu Bar
Shortcut Menu
Bookmark Panel
Login/out
Map Key
ERMA® | Atlantic
LAYERS
Bookmarks
Clear Layers
Collapse Folders
Show Active Layers
LEGEND
PHOTOS
ADD DATA
QUERY
DRAW
FILTER
DASHBOARD
ADMIN
OTHER
LOGOUT
CACFP and SFSP Area Eligibility (USDA) (2020)
U.S. Counties (U.S. Census, 2016)
U.S. States Boundaries
Tribal Lands
Grids & Graticules
Marine Jurisdictions
View Metadata
View Data
Zoom to Extent
Enable Popup
Bring to Front
Send to Back
Lock Layer on Top
Bookmark Views:
New
My Views
ACP Views
Marine Mammal Workshop
PRES 2025
PRES 2026
Sector Boston NPREP Scenario
USCG Training
Shared Views
Admin Boundaries & Reference Features
basetest_base
Berry's Creek Boundary Scratchpad
Berry's Creek Hyalella 28d biomass
Play Slideshow
at
sec interval
Clear Playlist
Scale: 1 : 2,183,915
Zoom: 8
Location:
Projection: 3857: WGS84 Web Mercator

Finding Data

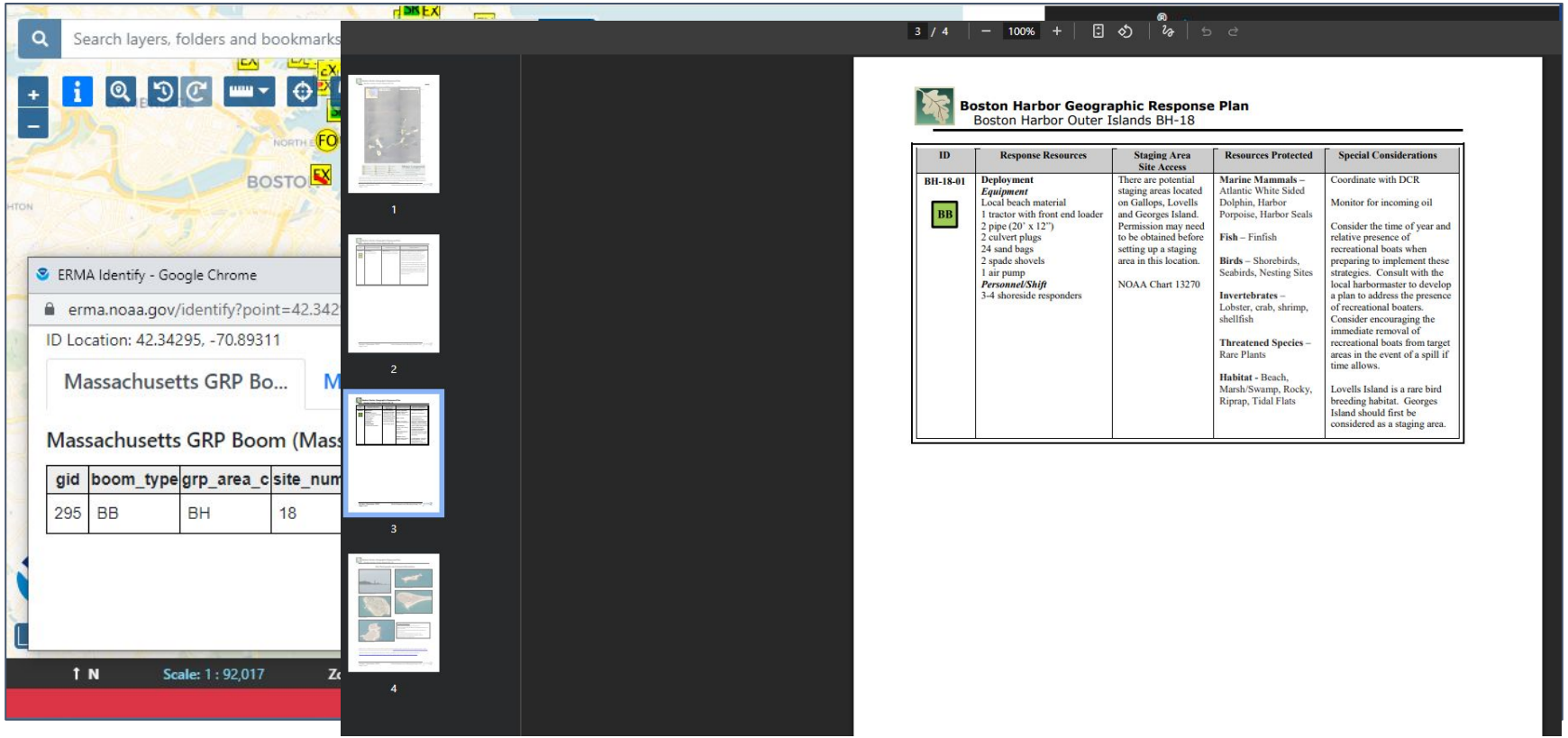


- **Layers Search Tool**
- **Recent Data**
- **Bookmarks**

Geographic Response Plan



Geographic Response Plan



Environmental Sensitivity Index (ESI)

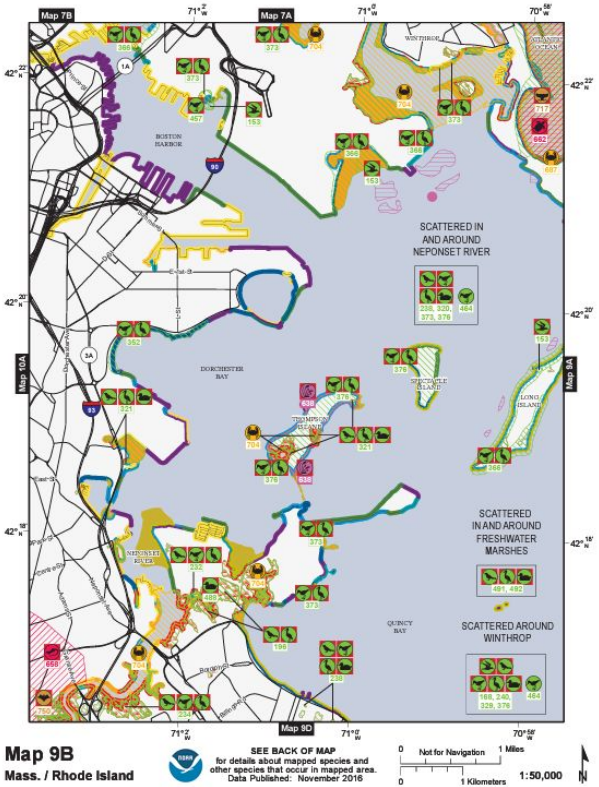
- NOAA maintains the ESIs to provide information about sensitivity to oil spills
- Spill planning, spill response
- Plants, animals, shoreline, habitats and human use data

NOAA Site:

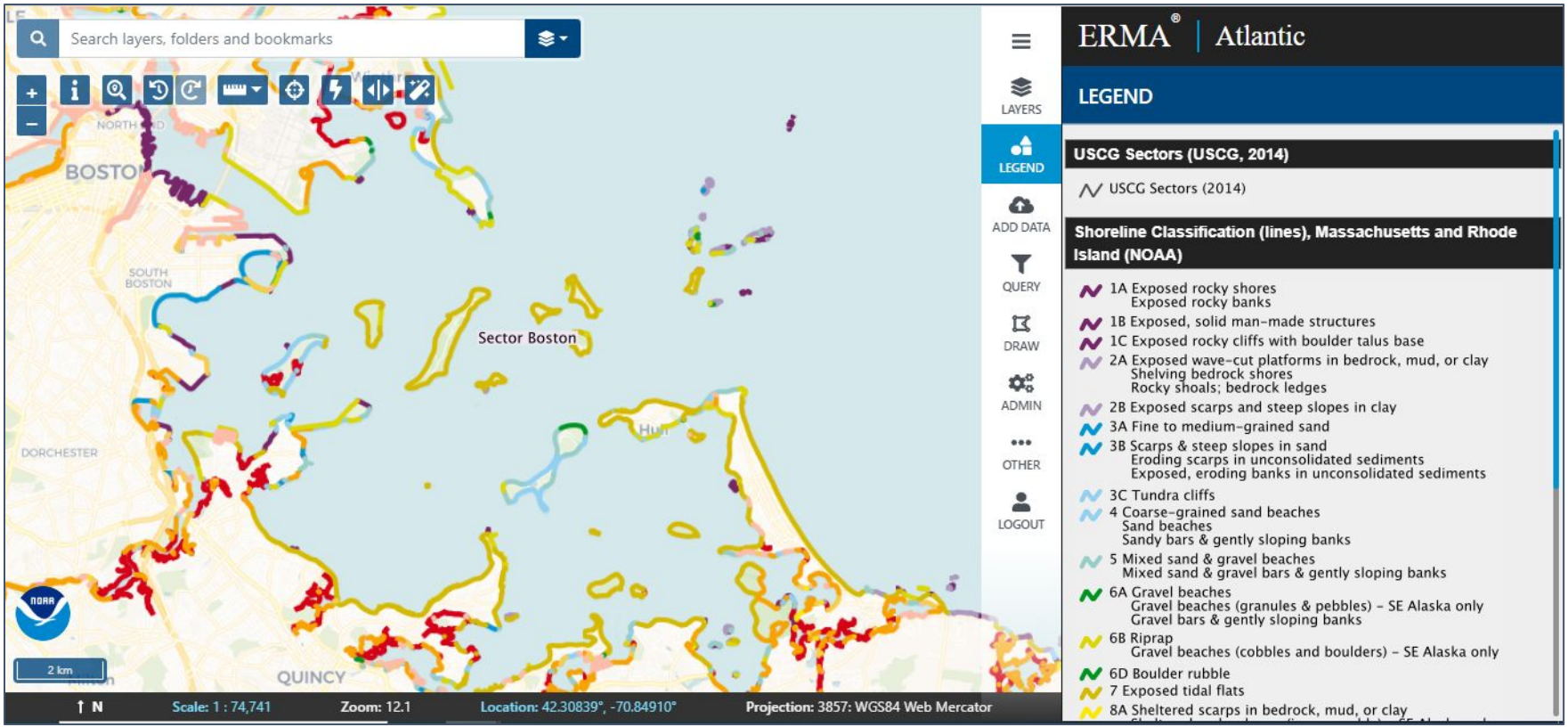
https://response.restoration.noaa.gov/resources/environmental-sensitivity-index-esi-maps

ERMA provides:

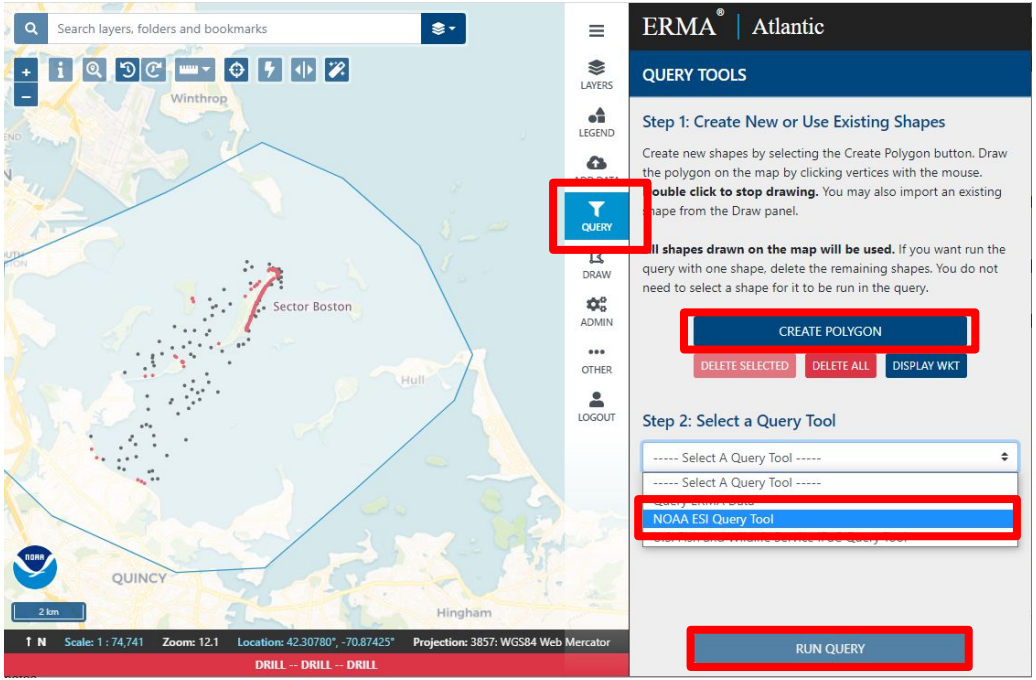
- Links to all pdf maps
- Map display within ERMA
- ESI custom AOI report
- Draft ICS 232 form



Environmental Sensitivity Index (ESI)



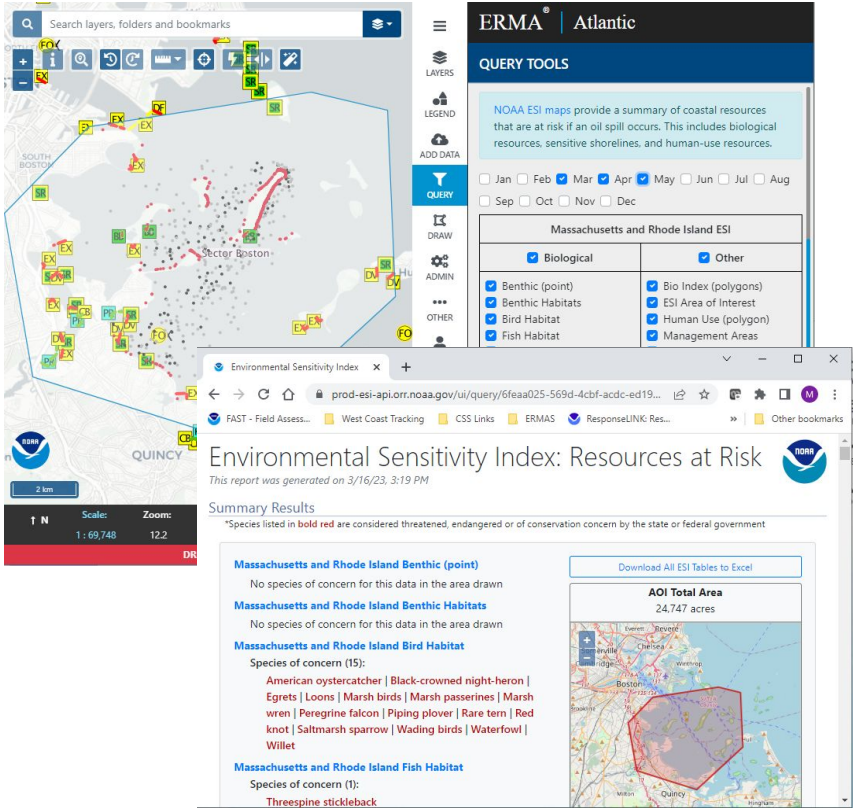
Querying ESIs



A detailed report of the ESI data can be created using ERMA's Query Tools

- **Click Query**
- **Click 'create polygon' and draw your AOI**
- **Choose "NOAA ESI Query Tool"**
- **Click "Run Query"**

Querying ESIs

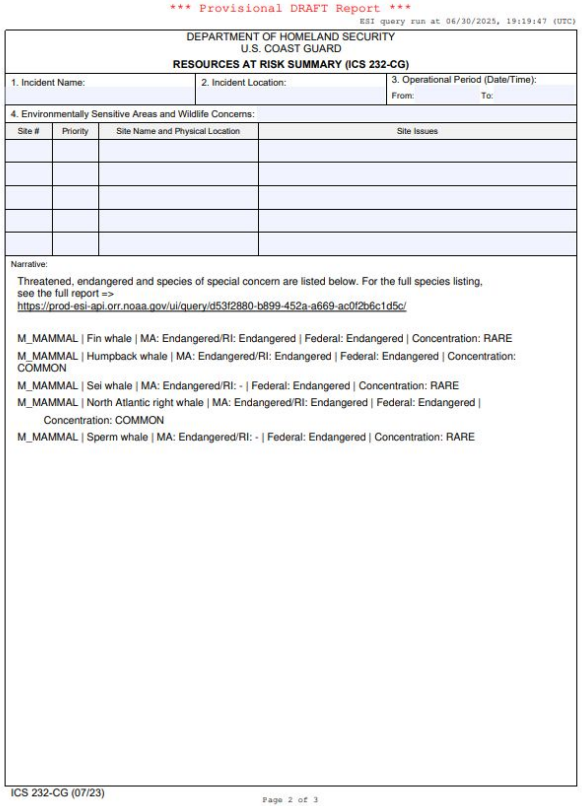


- Choose desired resources
- Choose a time
  - Default is 1 month on either side of the current month
- Click “Run ESI Tool”
- Output report appears in a new window.
- Can be printed to a PDF
- URL is retained: [link]

A similar process flow exists for the USFWS IPaQ tool for dry-side T&E species

response.restoration.noaa.gov

Environmental Sensitivity Index (ESI)



*** Provisional DRAFT Report ***

ESI query run at 06/30/2025, 19:19:47 (UTC)

DEPARTMENT OF HOMELAND SECURITY
U.S. COAST GUARD

RESOURCES AT RISK SUMMARY (ICS 232-CG)

1. Incident Name:	2. Incident Location:	3. Operational Period (Date/Time): From: To:

4. Environmentally Sensitive Areas and Wildlife Concerns:

Site #	Priority	Site Name and Physical Location	Site Issues

Narrative:

Threatened, endangered and species of special concern are listed below. For the full species listing, see the full report =>
https://prod-esi-api.orr.noaa.gov/ui/query/d53f2880-b899-452a-a669-ac0f2b6c1d5c/

M_MAMMAL | Fin whale | MA: Endangered/RI: Endangered | Federal: Endangered | Concentration: RARE

M_MAMMAL | Humpback whale | MA: Endangered/RI: Endangered | Federal: Endangered | Concentration: COMMON

M_MAMMAL | Sei whale | MA: Endangered/RI: - | Federal: Endangered | Concentration: RARE

M_MAMMAL | North Atlantic right whale | MA: Endangered/RI: Endangered | Federal: Endangered | Concentration: COMMON

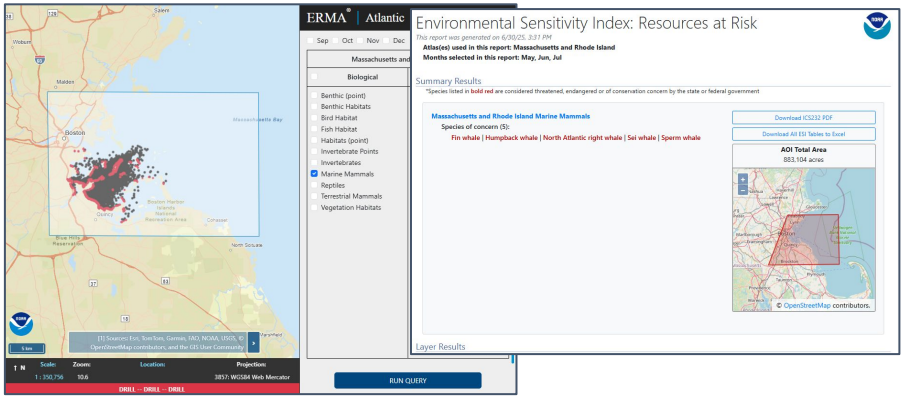
M_MAMMAL | Sperm whale | MA: Endangered/RI: - | Federal: Endangered | Concentration: RARE

ICS 232-CG (07/23)

Page 2 of 3

NOAA Site:
[Link]

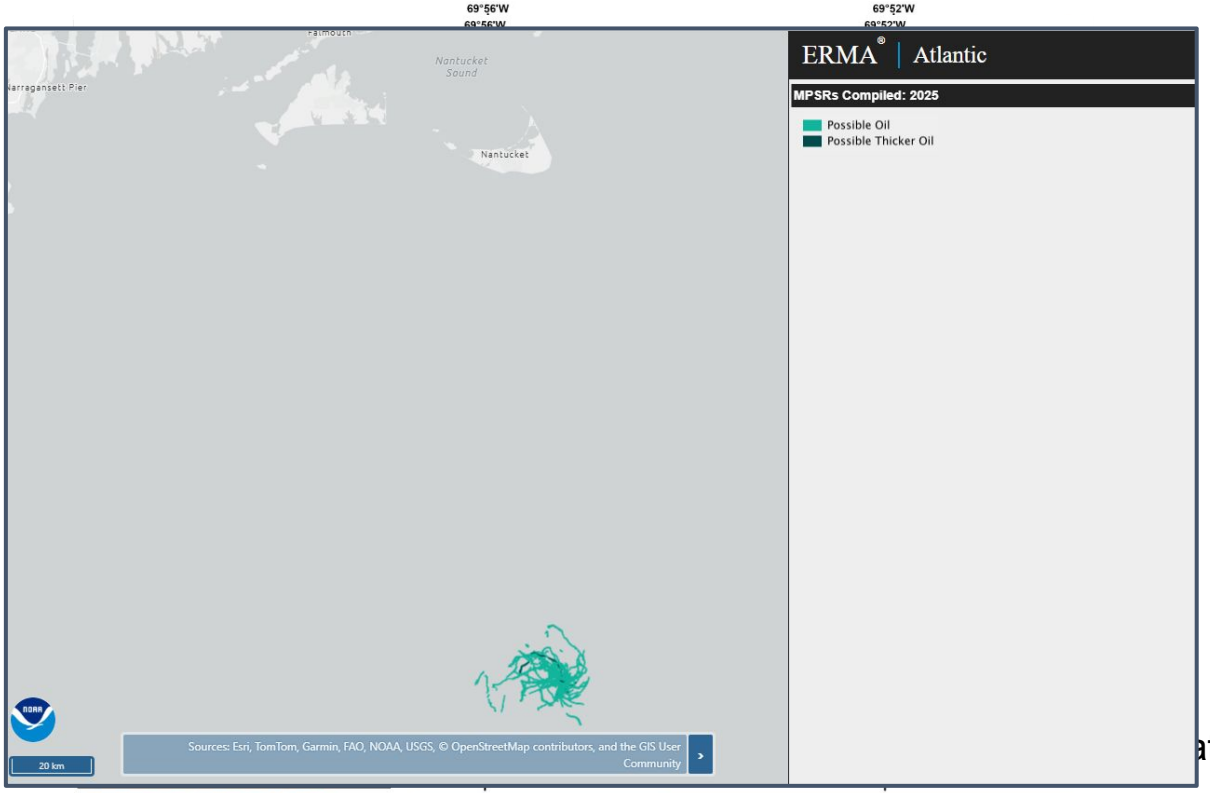
ERMA [links] to maps



Draft ICS 232 (Resources at Risk) Form

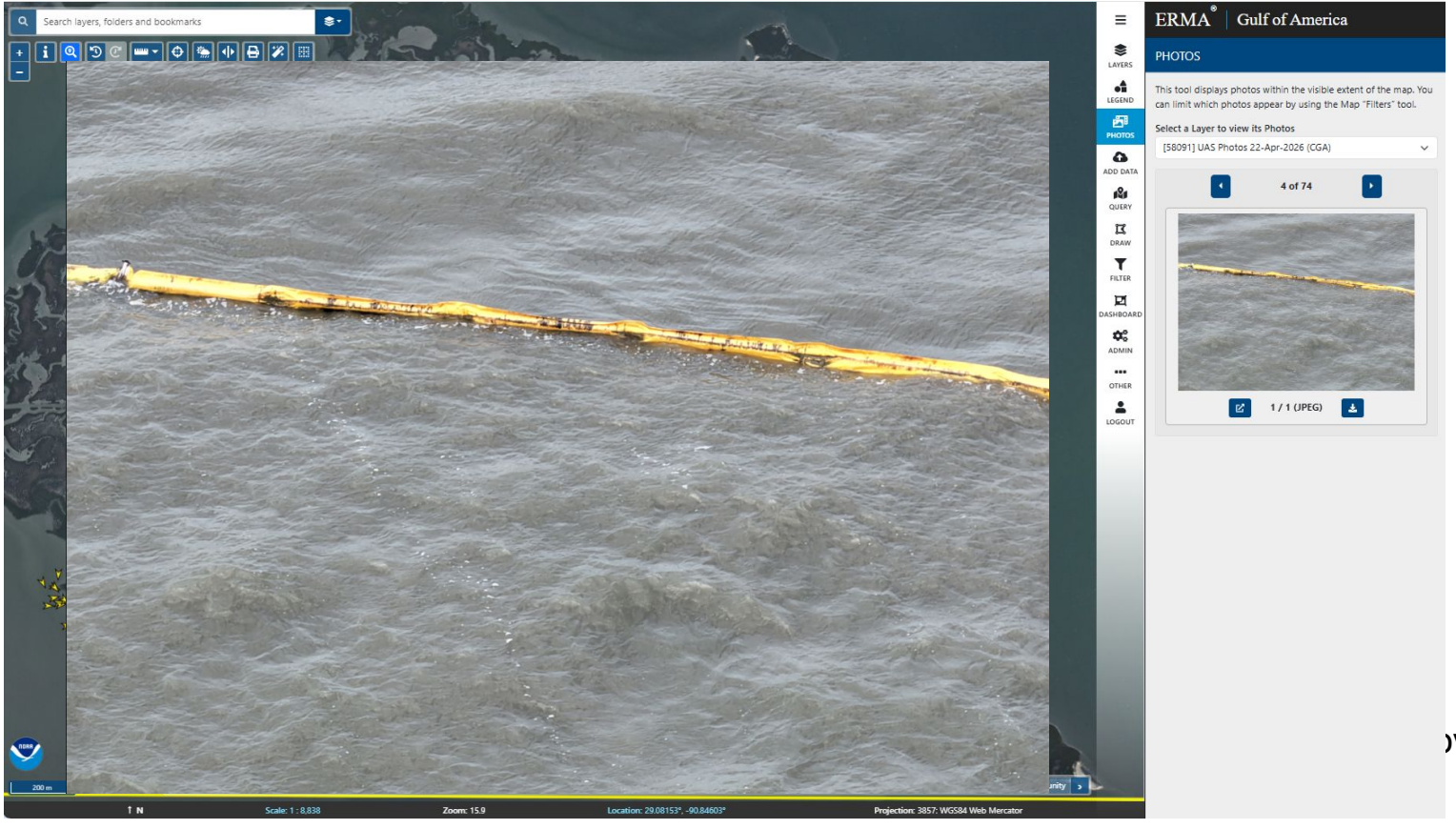
- **Summarizes for an AOI:**
  T&E species
  - **Name / state-federal / abundance / life-stages**
- **Shoreline lengths**
- **Human Use feature counts**
- **Places info into a fillable PDF 232 form**
- ***Not currently tied to GRS - goal**

Marine Pollution Surveillance Reports (MPSR)

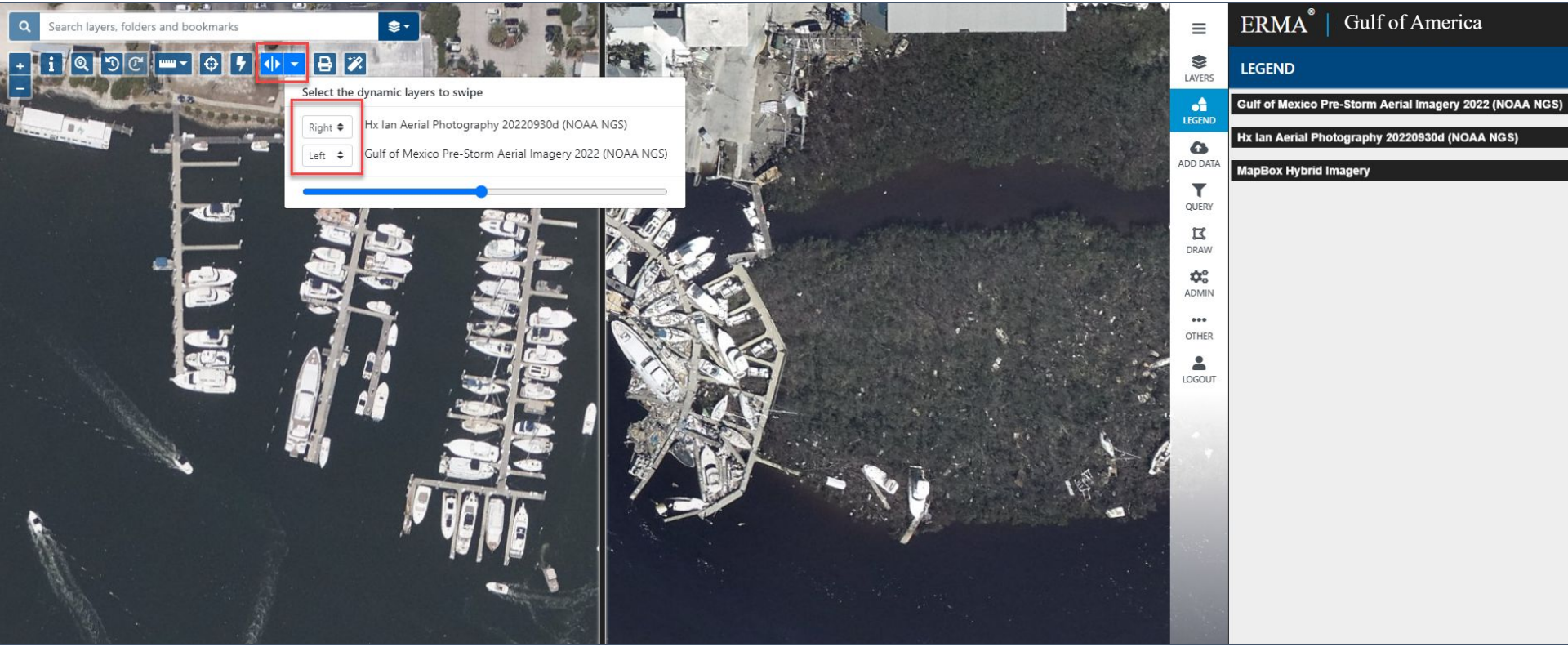


ation.noaa.gov

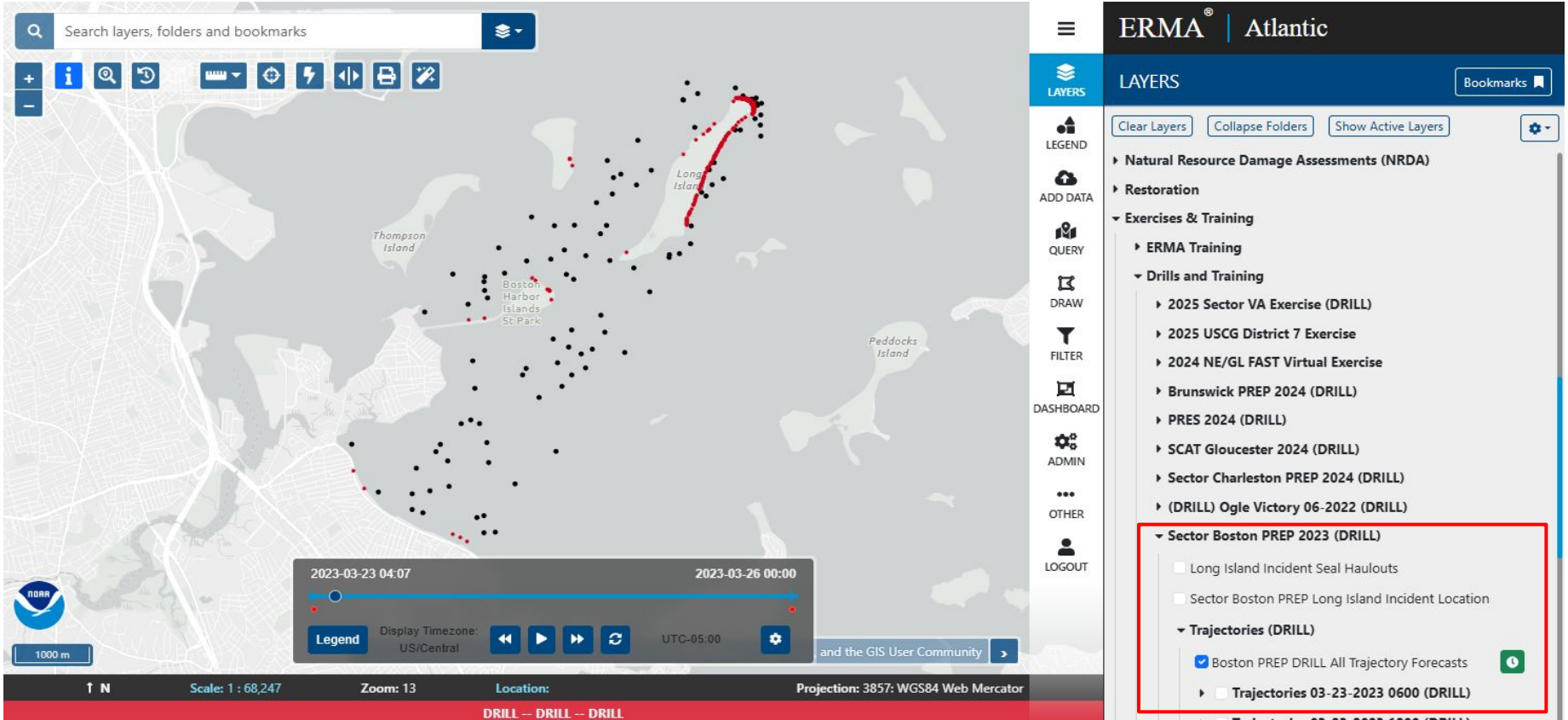
Aerial Overflights (Photo Carousel)



Response Photography (Swipe Tool)

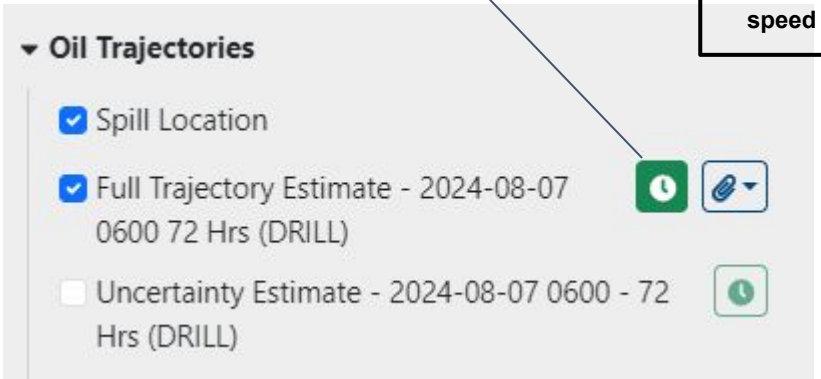


Oil Spill Trajectories

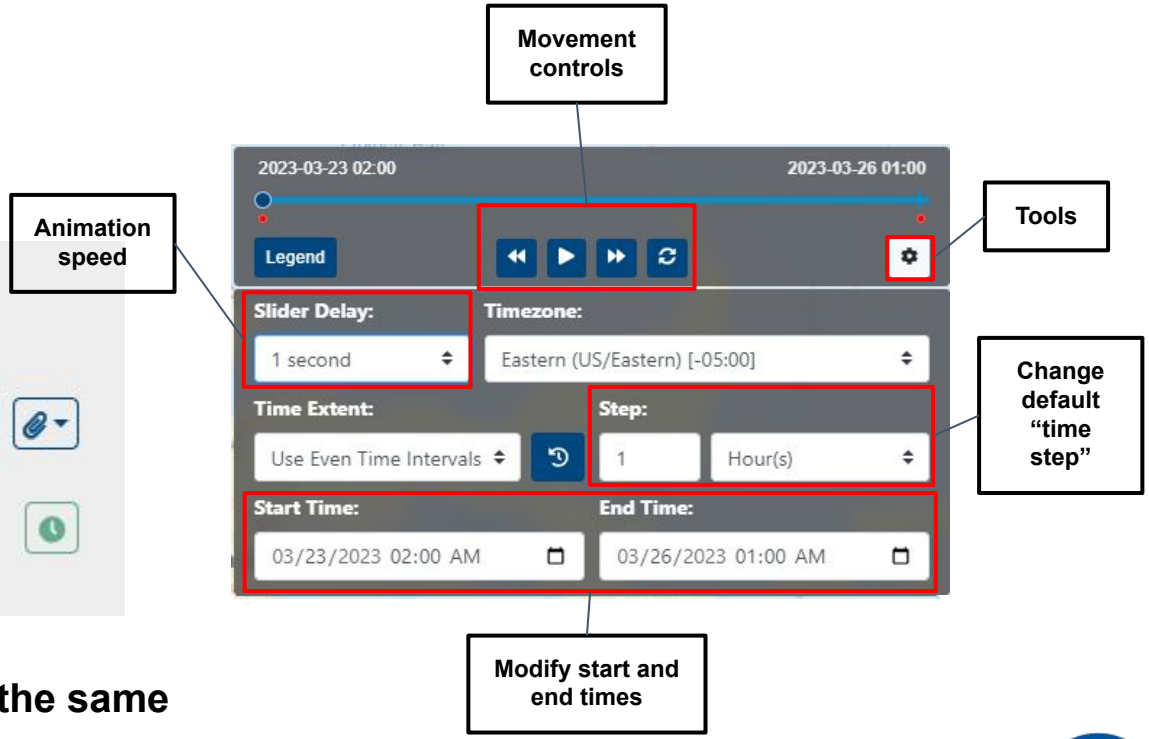


ERMA's Time Slider

Clock icon indicates a time-enabled layer



Multiple enabled layers will share the same date range and animate in unison

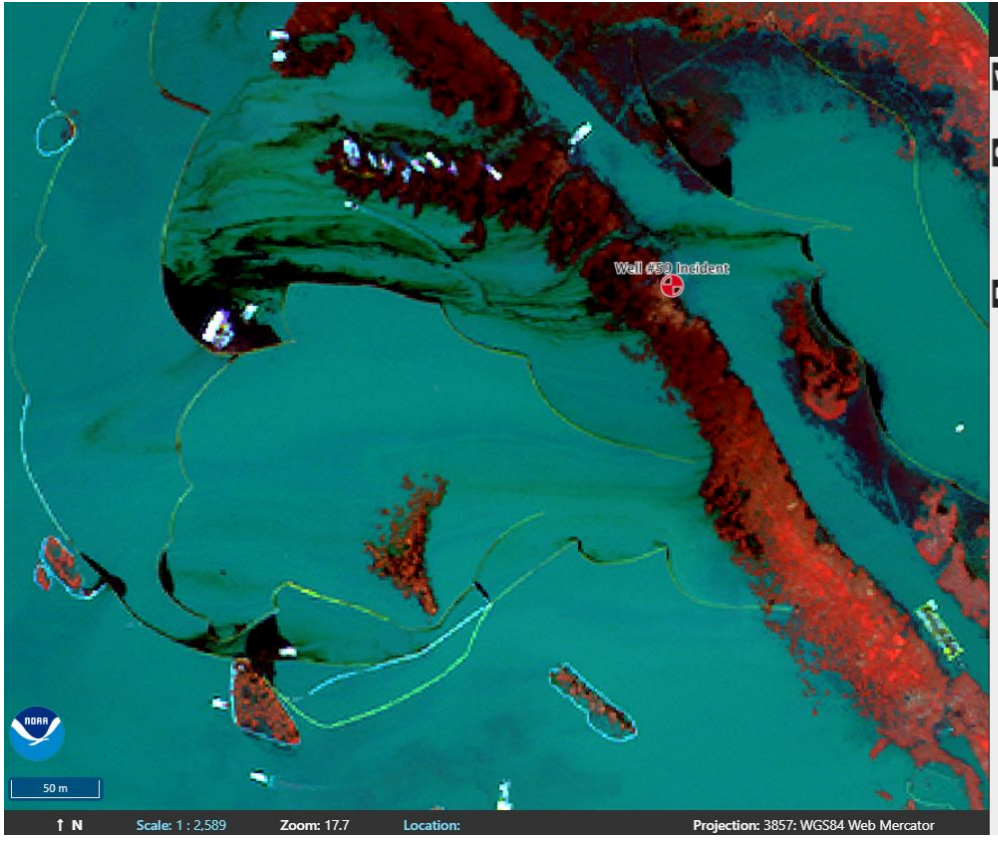


response.restoration.noaa.gov



UAS at Well #59

Infrared Satellite image with response vessels and booms



ERMA® | Gulf of America

Well #59 Incident Location

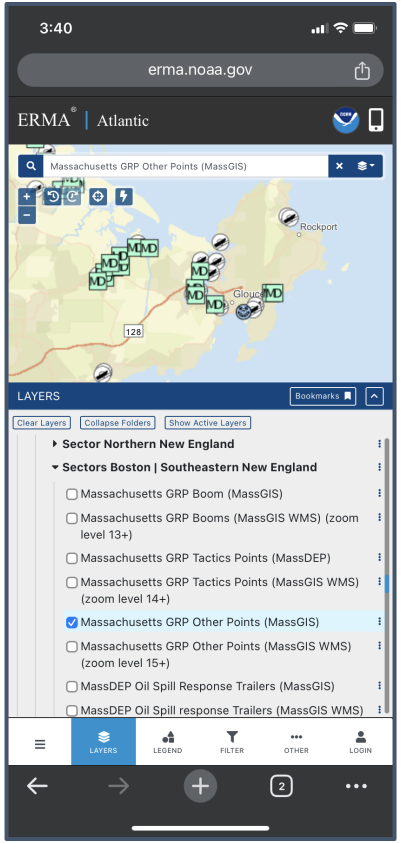
Well #59

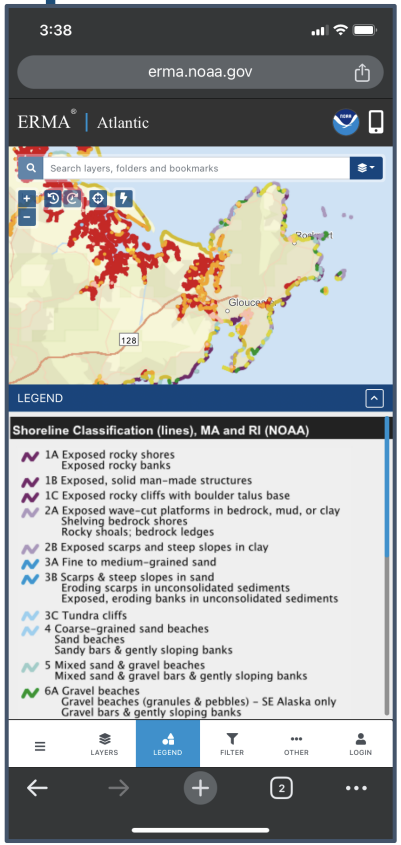
05-May-2025 Satellite Imagery NIR (WorldView3)

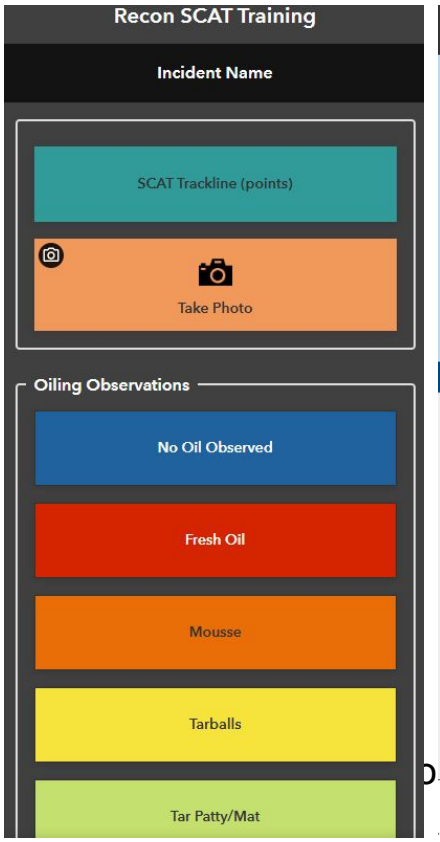
Blank Base Layer

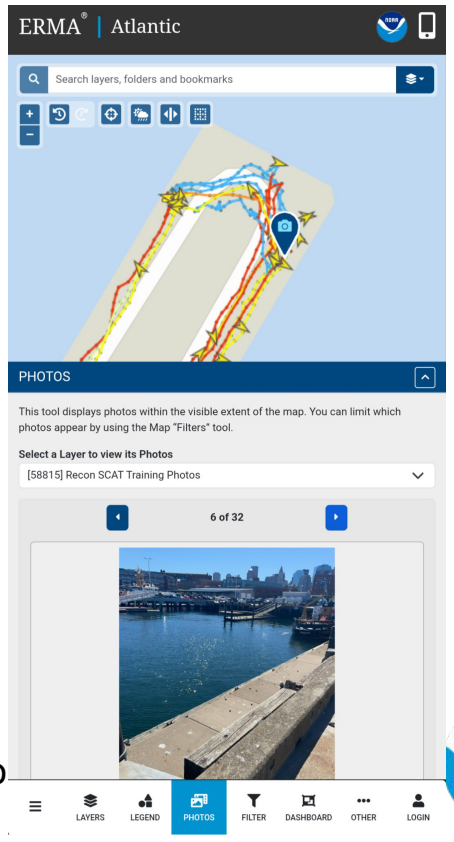
.gov

Scenario Example - ERMA/SCAT in the Field

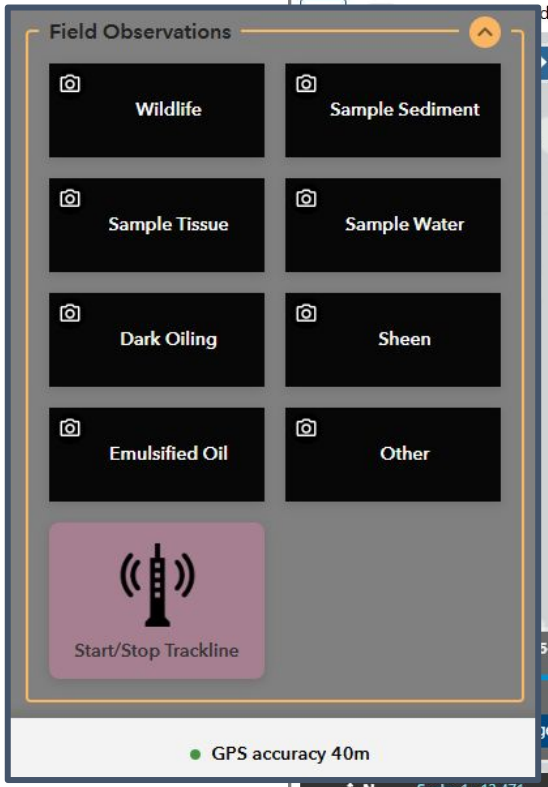


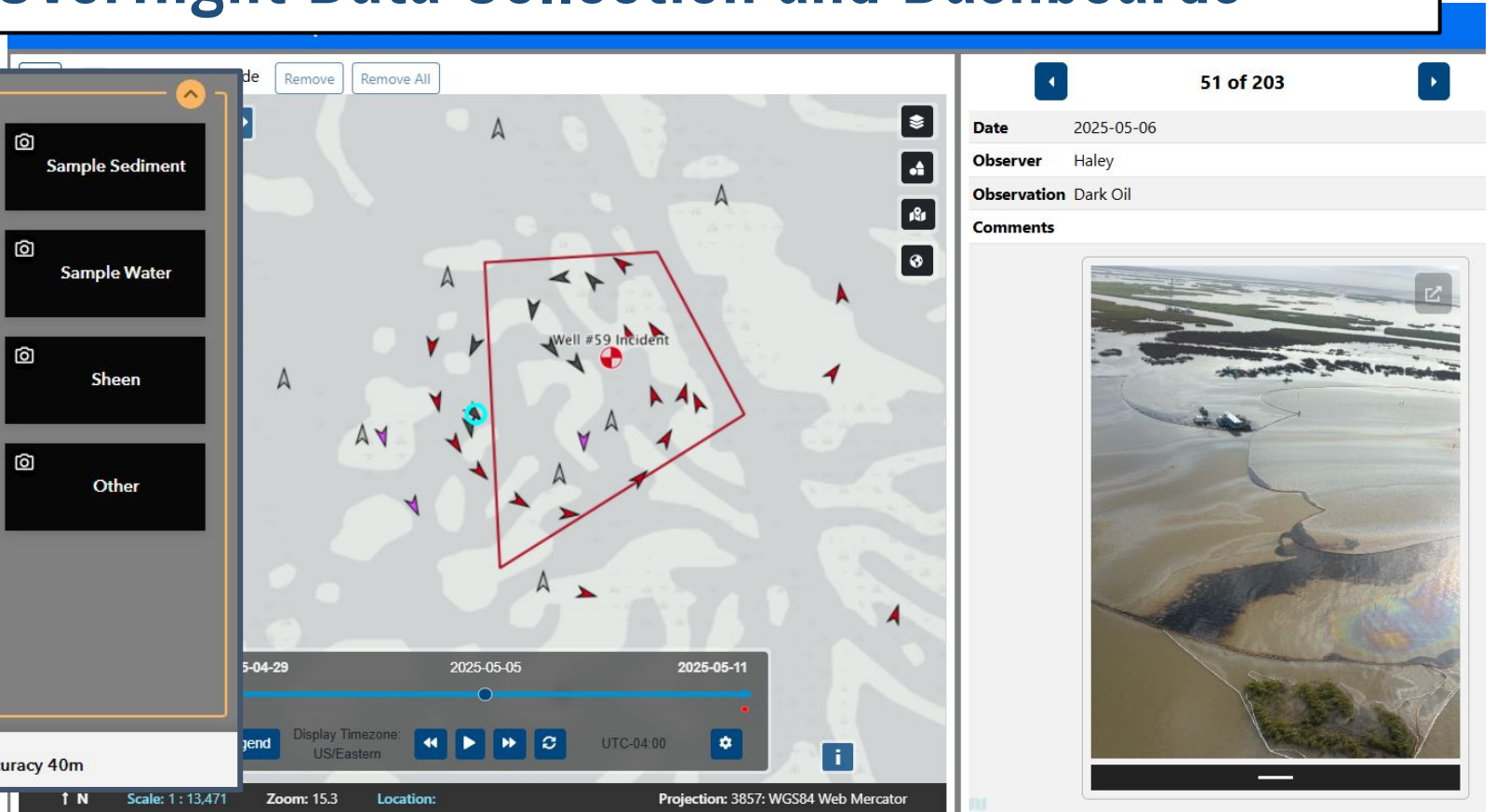






Overflight Data Collection and Dashboards





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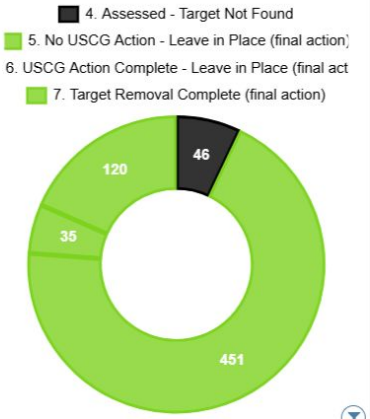
Date	2025-05-06
Observer	Haley
Observation	Dark Oil
Comments	

Dashboard: Emergency Support Function 10 (ESF-10) Target Status

Hurricane Milton Pollution Targets

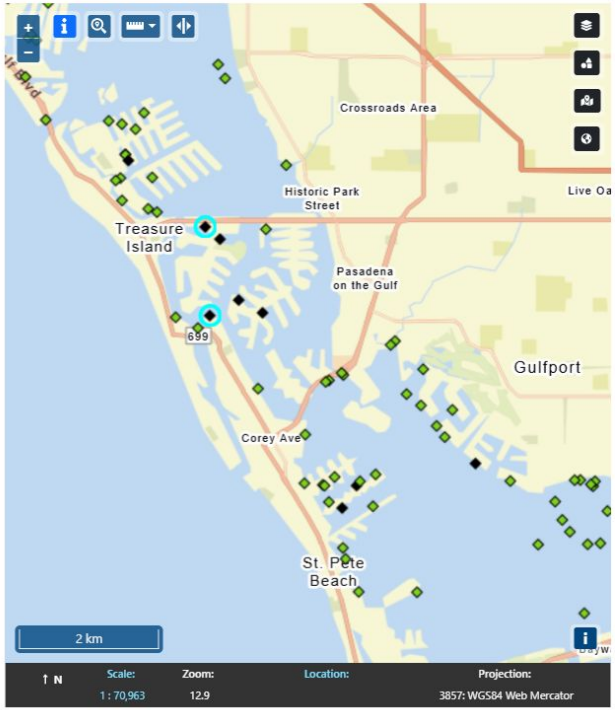
Total Targets	Total Targets In Map	Threat: Mitigate	Pollution Threat	Threat: Monitor	Not Assessed	No Action - LIP	Action Compl...	Target Remov...	Hotspots	Target Not Found	UAV Needed
652	73	0	1	0	0	58	2	4	0	9	0

Total Targets by Status



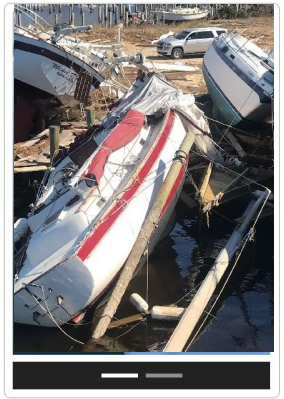
Vessel Type	Count
recreational	73

Hurricane Milton Targets

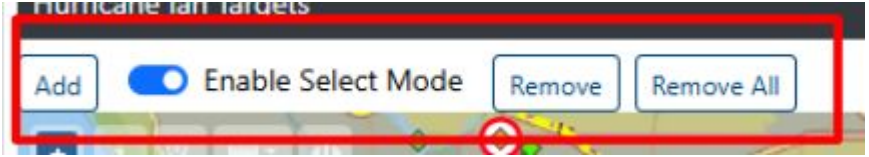


Debris Targets in View

9 of 73

Status	4. Assessed - Target Not Found
Photos	
Target Type	Vessel
Unique ID	251072_004
assessmentdate	2024-10-15T15:35:56Z
hotspot	
uscg_comments	10/15 MO Jet ski floatable dock found where satellite image was detected. No

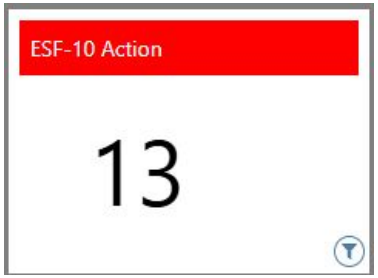
ERMA Tools - Dashboard AOI for Stat Refinement

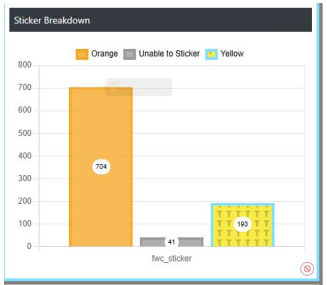


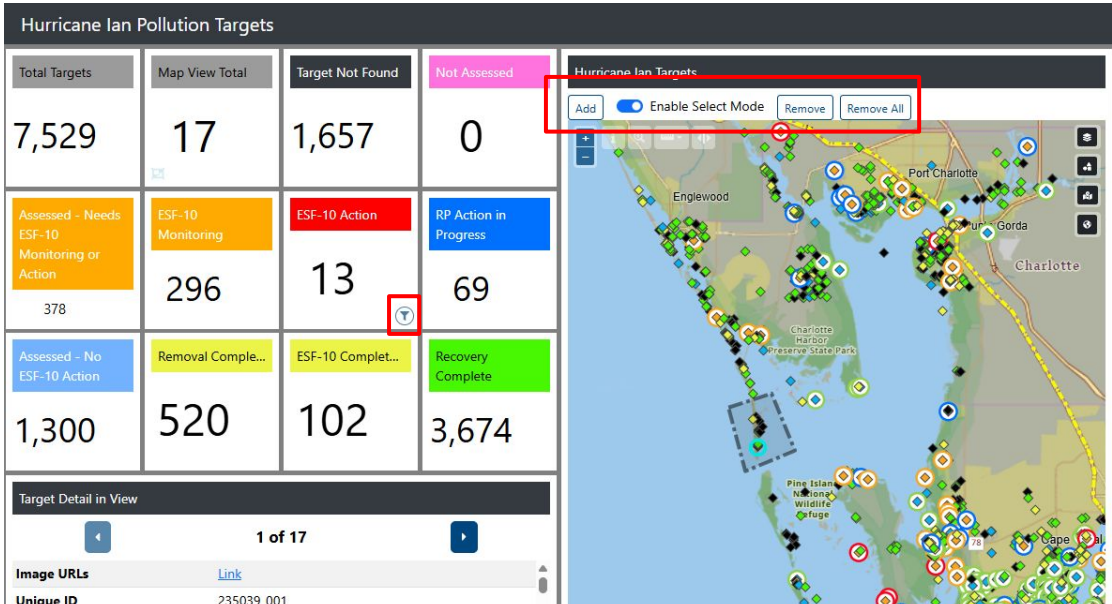
AOI stat filtering: Click “Add” to draw polygon(s) around desired areas to restrict view-specific cards

Filter by card or by chart

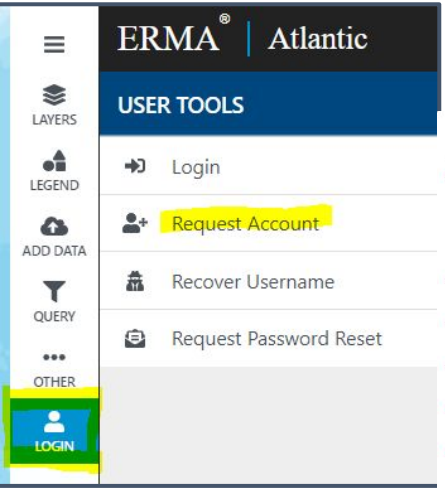
- Clicking the filter icon, or clicking a graph element will change the map display to show just that item

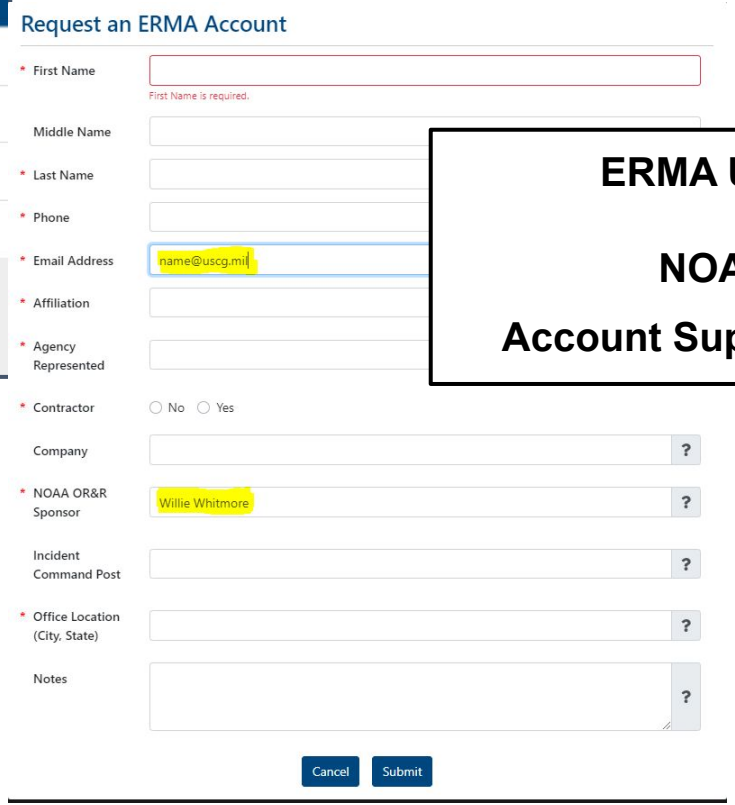






Logging in or Requesting an Account



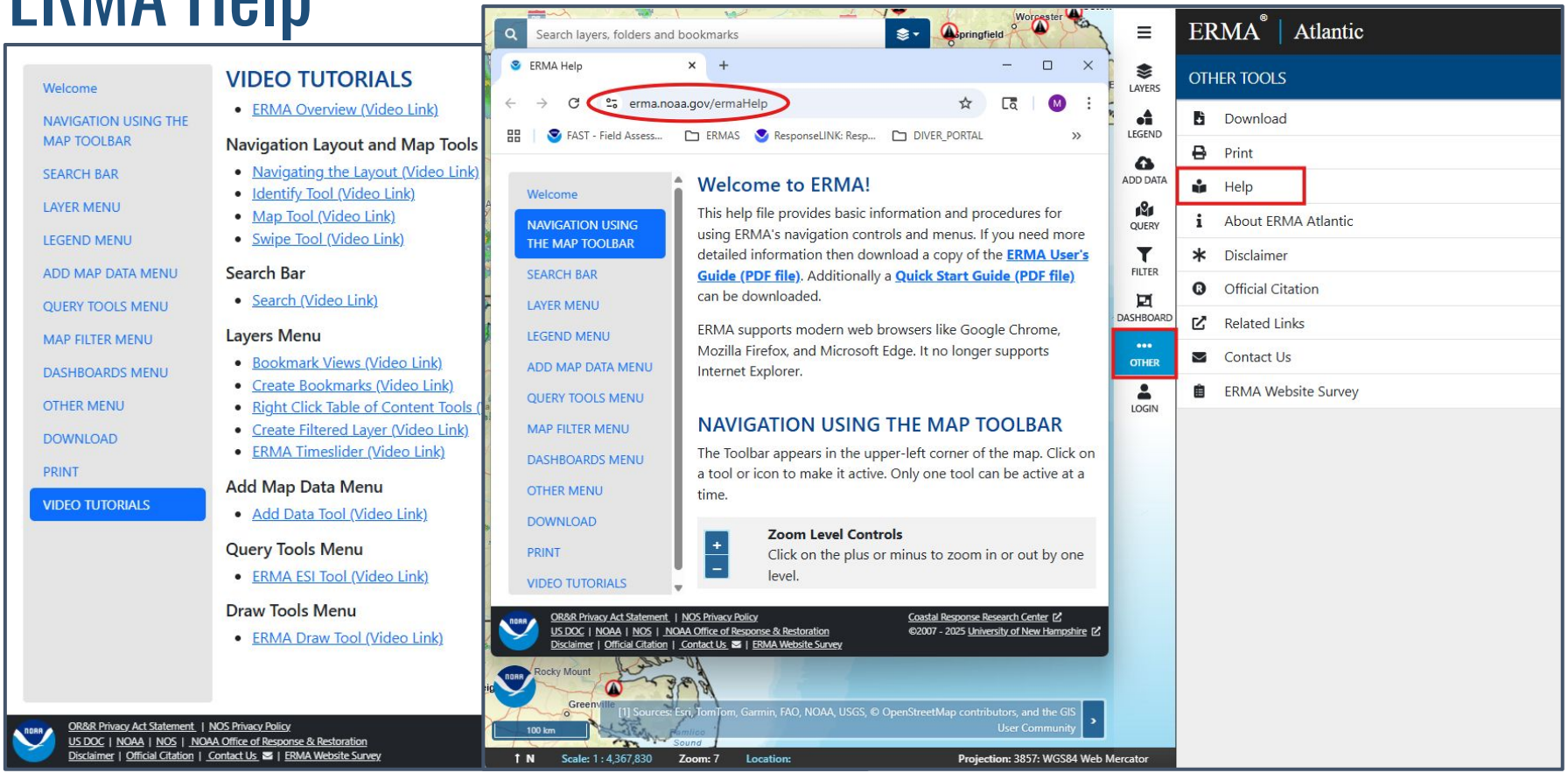


ERMA URL: https://erma.noaa.gov/atlantic
Login / Request Account
NOAA OR&R Sponsor: Willie Whitmore

Account Support: orr.ermaaccounts@noaa.gov

response.restoration.noaa.gov

ERMA Help


Welcome
NAVIGATION USING THE MAP TOOLBAR
SEARCH BAR
LAYER MENU
LEGEND MENU
ADD MAP DATA MENU
QUERY TOOLS MENU
MAP FILTER MENU
DASHBOARDS MENU
OTHER MENU
DOWNLOAD
PRINT
VIDEO TUTORIALS
VIDEO TUTORIALS
ERMA Overview (Video Link)
Navigation Layout and Map Tools
Navigating the Layout (Video Link)
Identify Tool (Video Link)
Map Tool (Video Link)
Swipe Tool (Video Link)
Search Bar
Search (Video Link)
Layers Menu
Bookmark Views (Video Link)
Create Bookmarks (Video Link)
Right Click Table of Content Tools
Create Filtered Layer (Video Link)
ERMA Timeslider (Video Link)
Add Map Data Menu
Add Data Tool (Video Link)
Query Tools Menu
ERMA ESI Tool (Video Link)
Draw Tools Menu
ERMA Draw Tool (Video Link)
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ERMAS
ResponseLINK: Resp...
DIVER_PORTAL
Welcome
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Welcome to ERMA!
This help file provides basic information and procedures for using ERMA's navigation controls and menus. If you need more detailed information then download a copy of the ERMA User's Guide (PDF file). Additionally a Quick Start Guide (PDF file) can be downloaded.
ERMA supports modern web browsers like Google Chrome, Mozilla Firefox, and Microsoft Edge. It no longer supports Internet Explorer.
NAVIGATION USING THE MAP TOOLBAR
The Toolbar appears in the upper-left corner of the map. Click on a tool or icon to make it active. Only one tool can be active at a time.
Zoom Level Controls
Click on the plus or minus to zoom in or out by one level.
OR&R Privacy Act Statement | NOS Privacy Policy
US DOC | NOAA | NOS | NOAA Office of Response & Restoration
Disclaimer | Official Citation | Contact Us | ERMA Website Survey
Coastal Response Research Center
©2007 - 2025 University of New Hampshire
Springfield
Worcester
Rocky Mount
Greenville
[1] Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community
100 km
N
Scale: 1 : 4,367,830
Zoom: 7
Location:
Projection: 3857: WGS84 Web Mercator
LAYERS
LEGEND
ADD DATA
QUERY
FILTER
DASHBOARD
OTHER
LOGIN
ERMA® | Atlantic
OTHER TOOLS
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ERMA Overview - Questions?

Bookmarks
- Allows users to save/share a streamlined TOC for the layers of interest

Draw Tool
- Draw/share features that others can see and use in queries

Query Tool
- Draw a polygon and get a report of the ERMA features

Layer Filtering
- See only features that match text or numerical values in the attributes

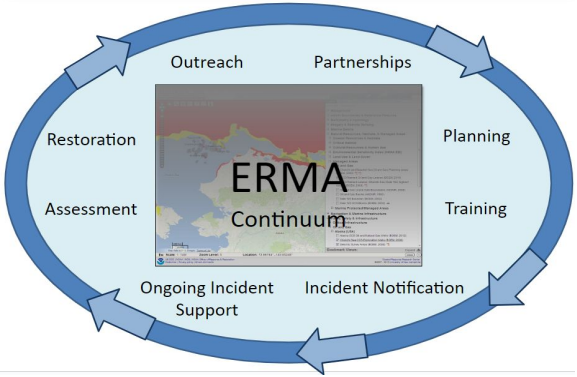
Swipe Tool
- Quickly compare multiple datasets

Clean Mode
- Removes tools/menus for a clean screen capture

ERMA's URL
- Contains all parameters to send to another user to see the exact same view as you see

Add Local Data
- Add your own data from Excel files or GIS data

Dashboards
- Map views and AOI statistics for selected topics



ERMA Availability:
- USCG COP and Data Sharing
- 24/7 Availability
- Reach out to your Scientific Support Coordinator

ERMA Data:
- Proprietary and Public data for and after an incident
- Controlled access to information
- 3 Things! (Search, Recent Data, Bookmarks)

ERMA Functionality:
- Supports a variety of ICS related activities
- Provides Analysis and Tools
- Dashboards and Reporting

Exercise

Matt Dorsey: mathew.dorsey@noaa.gov

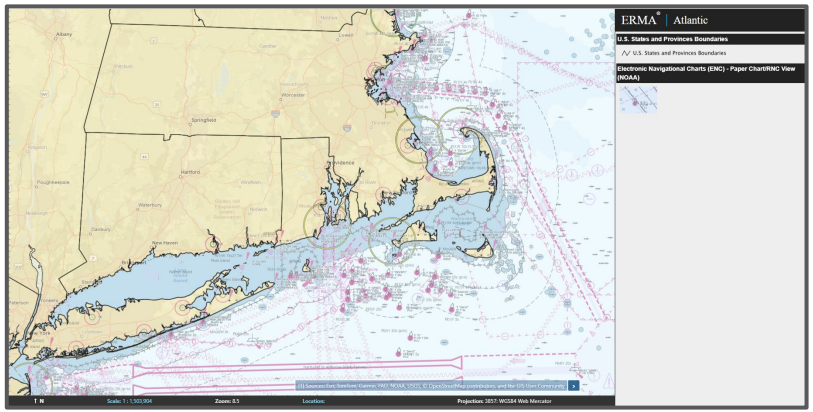
ERMA email: orr.erma@noaa.gov

Exercise: https://erma.noaa.gov/atlantic

Using ERMA Complete the following tasks:

1. **Search to find Essex River (Hint: search bar "Geographic Locations")**
2. **Identify what the most sensitive shoreline in the area (Hint: search bar to find ESI MA layer)**
3. **Identify what types of Boom should be used in the area. Search/turn on the Massachusetts GRS Boom, Tactics (Keyword search for "GRS")**
4. **Use the ESI query tool to create a draft ICS 232 of the Essex River AOI.**
5. **Use the URL above to interact with ERMA on your mobile device.**

Thank You



https://erma.noaa.gov

https://erma.noaa.gov/atlantic

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ERMA accounts: orr.ermaaccounts@noaa.gov

Recon SCAT/VADR

Accounts and Layers made for the sole use of Training. Reach out to SDB with questions regarding additional account creation. All accounts will have access to the QuickCapture and Field Maps applications.

	App Type	App Name	ERMA Layers	ERMA Dashboard
Recon SCAT Training	**QuickCapture**	Recon SCAT Training	ERMA Layers	Dashboard
VADR Recon Training	**Field Maps**	VADR Recon Training	ERMA Layers	

Username	Password
SCAT_Team_1	SCAT_Team1
SCAT_Team_2	SCAT_Team2
SCAT_Team_3	SCAT_Team3
SCAT_Team_4	SCAT_Team4
SCAT_Team_5	SCAT_Team5
SCAT_Team_6	SCAT_Team6
SCAT_Team_7	SCAT_Team7
SCAT_Team_8	SCAT_Team8

Steps to Quick Capture

1) Open/Download Quick Capture App
2) Select Sign in with **ArcGIS Enterprise**
3) Insert link: https://esri.orr.noaa.gov/arcgis
4) Login using **Username & Password** below
5) Select **+** button, navigate to **QC name**

Steps to VADR

1) Open/Download the Esri Field Maps app
2) Sign in with ArcGIS Enterprise
3) use: https://esri.orr.noaa.gov/arcgis
4) Login using **Username & Password** below
5) Select the VADR app (ex: VADR Recon Training)



