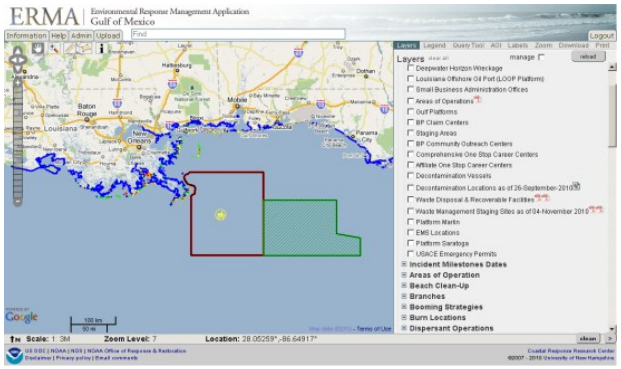
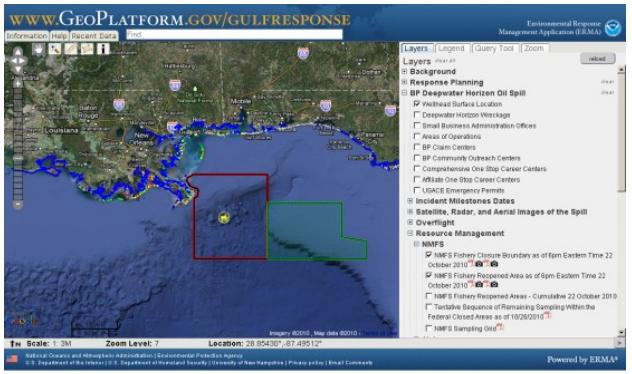
NOAA | National Ocean Service

Office of Response and Restoration





ERMA®
Environmental Response Management Application

Matt Dorsey

Oil Spill Technology Conference
San Ramon, CA
January 28, 2013

What is ERMA?

- Online mapping tool
- Analyze and visualize environmental information relevant to all hazards
- Prepare for, respond to, assess impacts from hazardous incidents or conditions
- Provides centralized access to information
- Increases communication, coordination, and efficiency

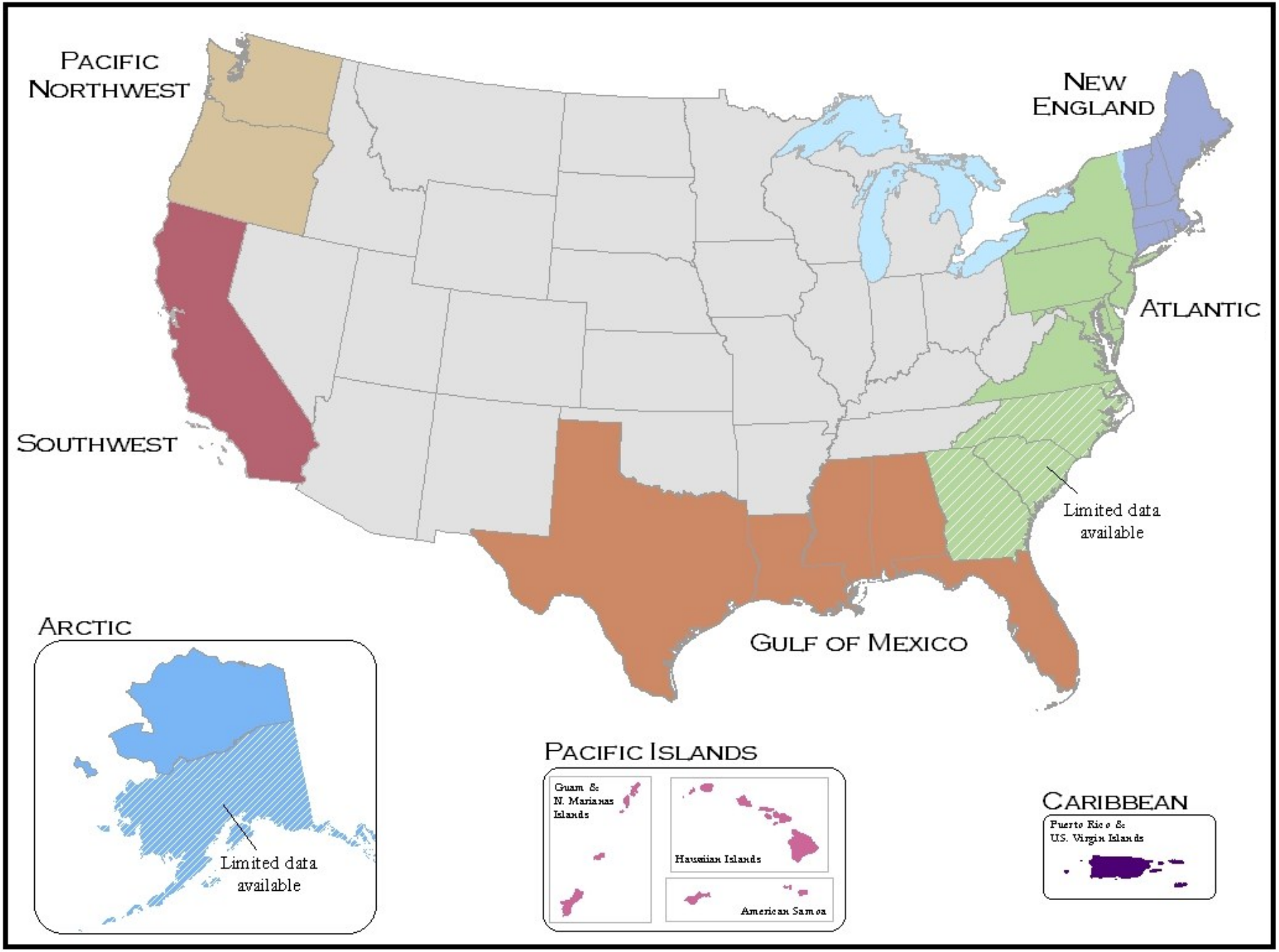
Use ERMA to…

Visualize the situation status during an oil spill drill

Assess damage and plan for restoration

Analyze threats from climate change, drilling, and hurricanes

Create a Common Operational Picture in a disaster response


PACIFIC NORTHWEST
NEW ENGLAND
ATLANTIC
SOUTHWEST
Limited data available
GULF OF MEXICO
ARCTIC
Limited data available
PACIFIC ISLANDS
Guam & N. Mariana Islands
Hawaiian Islands
American Samoa
CARIBBEAN
Puerto Rico & U.S. Virgin Islands

Common Operational Picture

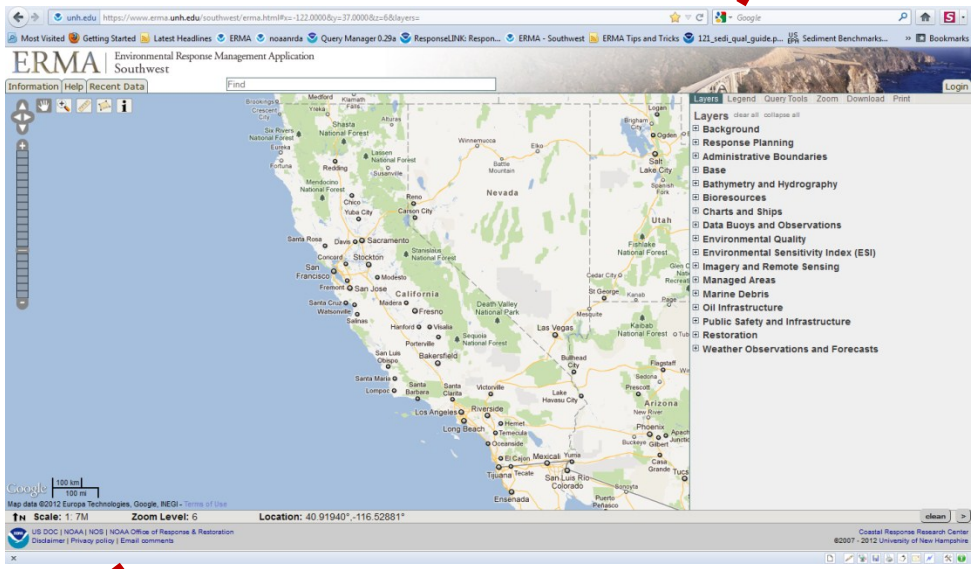
People

Command Post Responders

Remote Responders

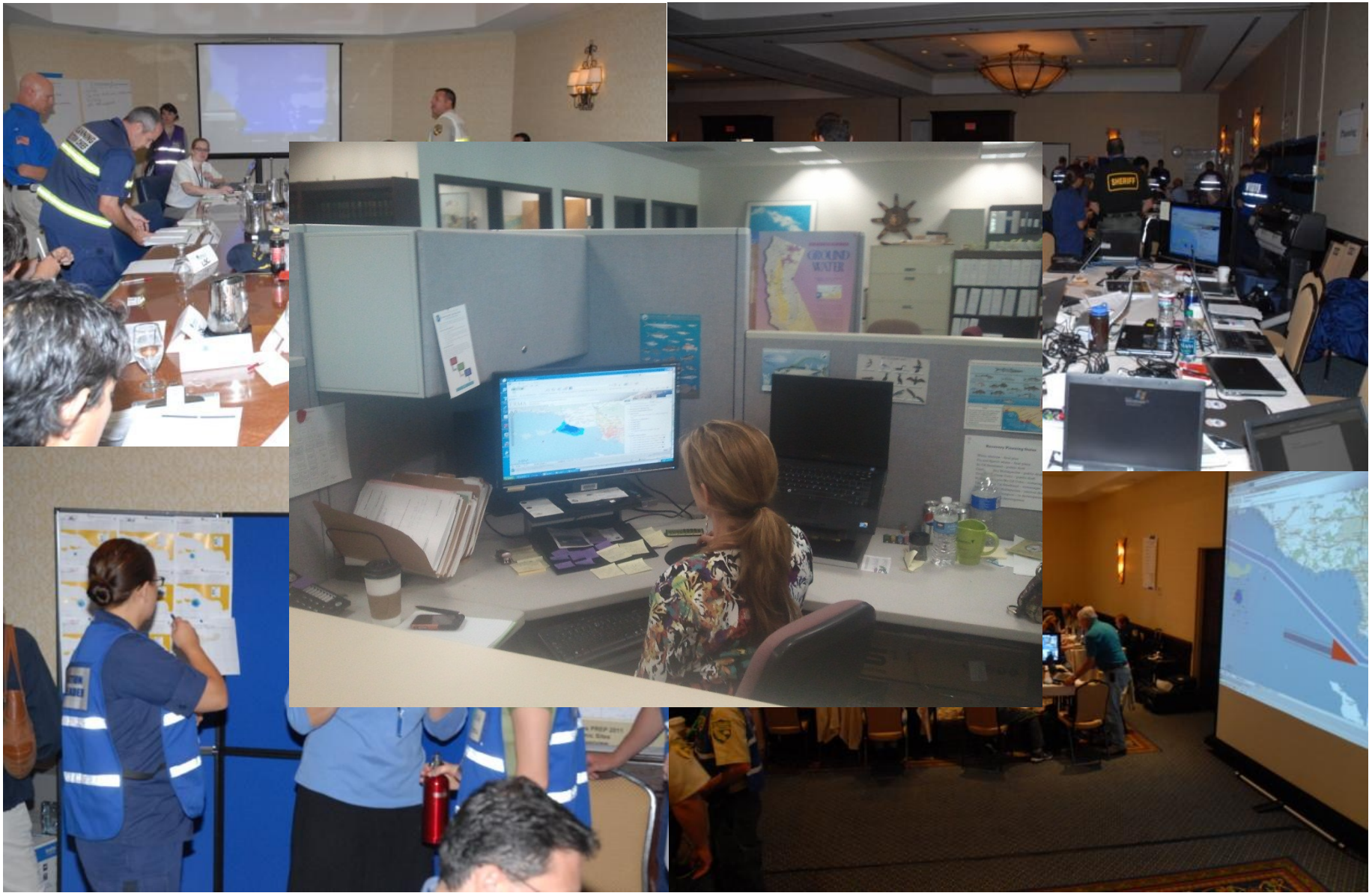
Public

OSCs



Field Responders

Common Operating Picture



Common Operating Picture

Phases of a spill

- **Planning**
  - Easily view ACP data
  - Collaborate as committee
- **Spill/Drill Response**
  - Current Situation Status
  - Operations Tracking
  - Wildlife Observations
- **Damage Assessment**
  - Data carry over
  - Visualize logical areas of investigation
- **Restoration**
  - Staging/Planning
  - Progress Monitoring

Planning - ACP Data

ERMA | Environmental Response Management Application Southwest

Information | Help | Recent Data | Admin | Upload

Logout

Zoom | Download | Print

2-424 -A Site Strategy - Paradise Cay Eelgrass & Marina 2-424 -A

County and Thomas Guide Location: AAA - Mill Vall Marin

NOAA CHART: Entrance to San Francisco Bay 18649

Latitude N: 3 7 54 Longitude W: 122 27

Last Page Update : 7/1/2005

CONCERNS and ADVICE to RESPONDERS:

Eelgrass has high ecological value and is used by lots of birds and fish. Eelgrass leaves are rough, and unlike most water plants, oil will readily attach. Booming eelgrass will also protect the sandy shoreline.

HAZARDS and RESTRICTIONS:

Shallow throughout. Some obstructions near shore where o

SITE STRATEGIES

Because this is a low energy area, light boom and few
are southerly, heavier or redundant gear will be neces

Strategy 2-424.1 Objective: Primary: Assess vulnerab

Assign a scientist to assess eelgrass exposure to oil a

Strategy 2-424.2 Objective: exclusion around eelgrass

Use 5,100 ft of boom (4X4+ under calm conditions and
from the southeast corner (jetty) of Paradise Cay Mari

Strategy 2-424.3 Objective: exclude oil from entering

deploy 250' swamp boom in chevron configuration at e

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no	Anchoring type and gear	Boom boat
2-424.1	0	0	0	0	0		0
2-424.2		5100		0	6	22#+ danforths	1
2-424.3	0	500	0	0	6	13#+ anchors	0

Identify

ACP Booming Strategies

gid	type	strat_no	acp	describe	label	
1110	hboom	2-424.2	2	4500' swamp boom	Harbor Boom	http://ftp.dfg.ca.gov/Public/OSPR/WebMapp

New Lookup

California Coastal Records Project

N37 49.21 W122 29.57 Image 201007628 Sat Sep 25 12:30:49 2010

Nearest caption: Kirby Cove, Marin Headlands (at Image 201007632, 950 ft North)

Lagunitas-Forest Knolls, Woodacre, Lagunitas, Five Brooks, Bolinas, Stinson Beach, Bolinas Bay

Golden Gate Heights, Hunters Point, Oakland

Google 5 km 2 mi

Map data ©2011 Google - Terms of Use

Scale: 1: 217K Zoom Level: 11 Location: 37.82977°,-122.33783°

clean

Common Operational Picture

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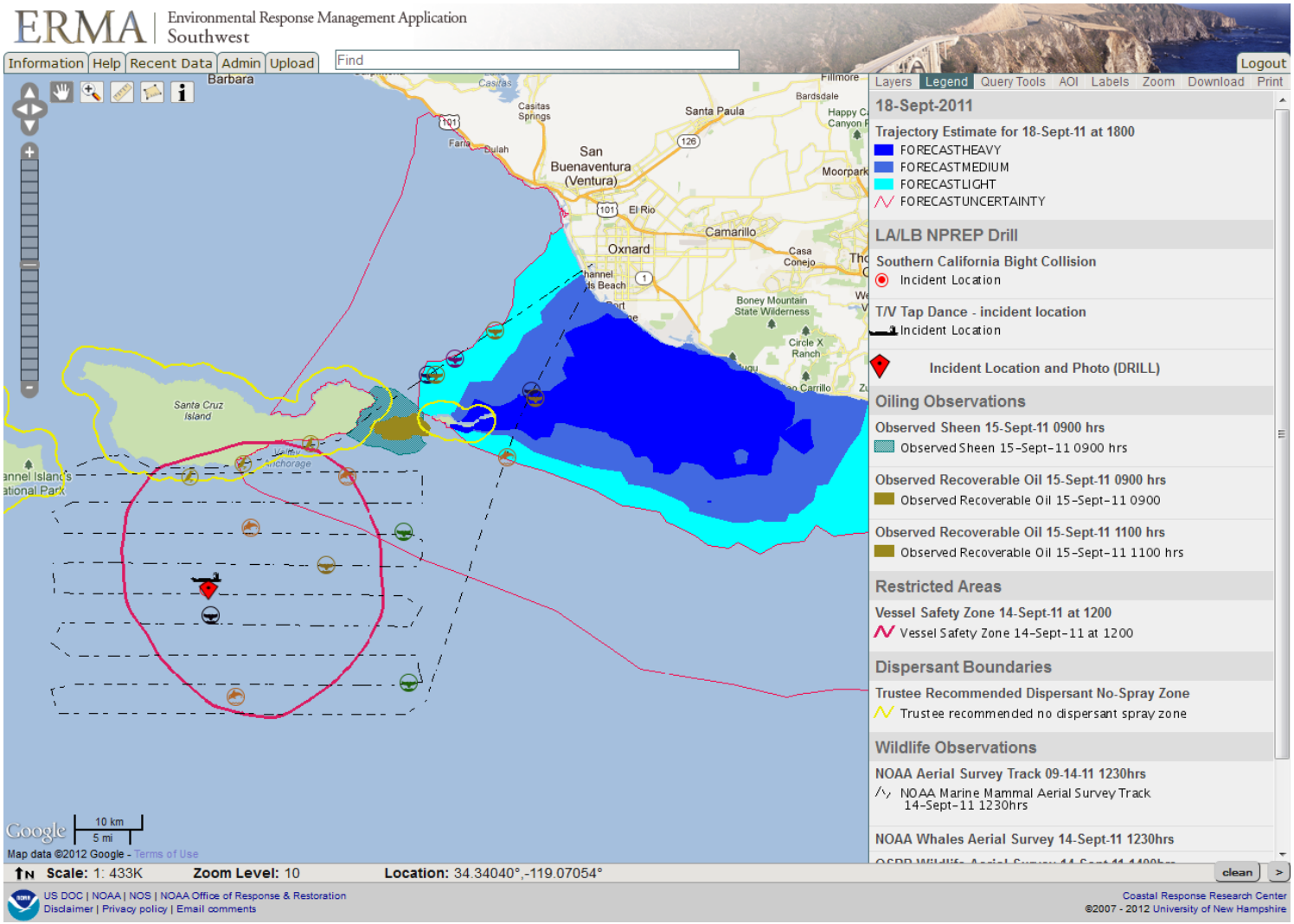
Spill/Drill - Situation Status



Common Operational Picture

Phases of a spill

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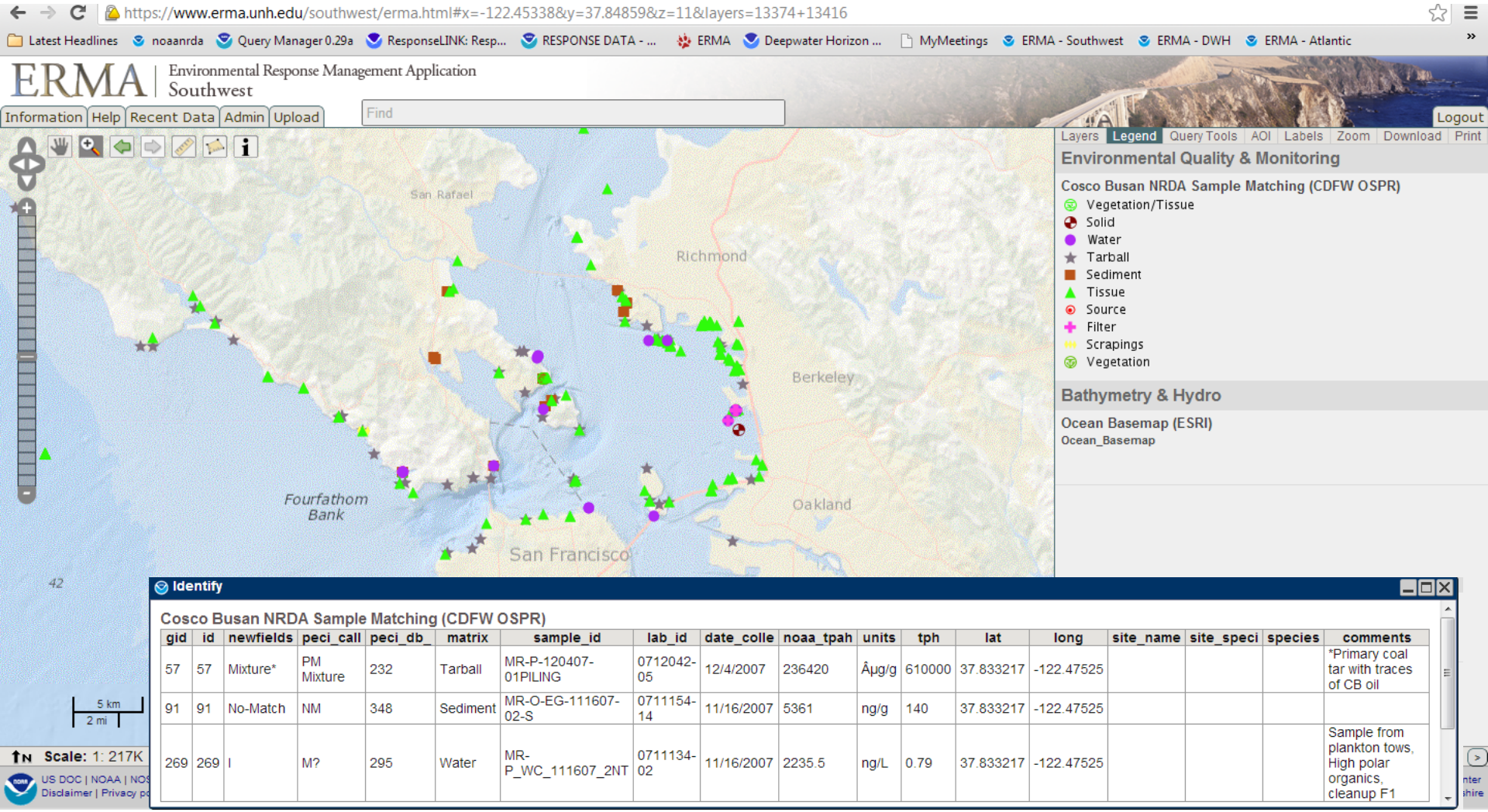
NRDA



gid	id	newfields	peci_call	peci_db_	matrix	sample_id	lab_id	date_colle	noaa_tpah	units	tph	lat	long	site_name	site_speci	species	comments
57	57	Mixture*	PM Mixture	232	Tarball	MR-P-120407-01PILING	0712042-05	12/4/2007	236420	Âµg/g	610000	37.833217	-122.47525				*Primary coal tar with traces of CB oil
91	91	No-Match	NM	348	Sediment	MR-O-EG-111607-02-S	0711154-14	11/16/2007	5361	ng/g	140	37.833217	-122.47525				
269	269	I	M?	295	Water	MR-P_WC_111607_2NT	0711134-02	11/16/2007	2235.5	ng/L	0.79	37.833217	-122.47525				Sample from plankton tows, High polar organics, cleanup F1

Common Operational Picture

Phases of a spill

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  - Wildlife Observations
- **Damage Assessment**
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  - Visualize logical areas of investigation
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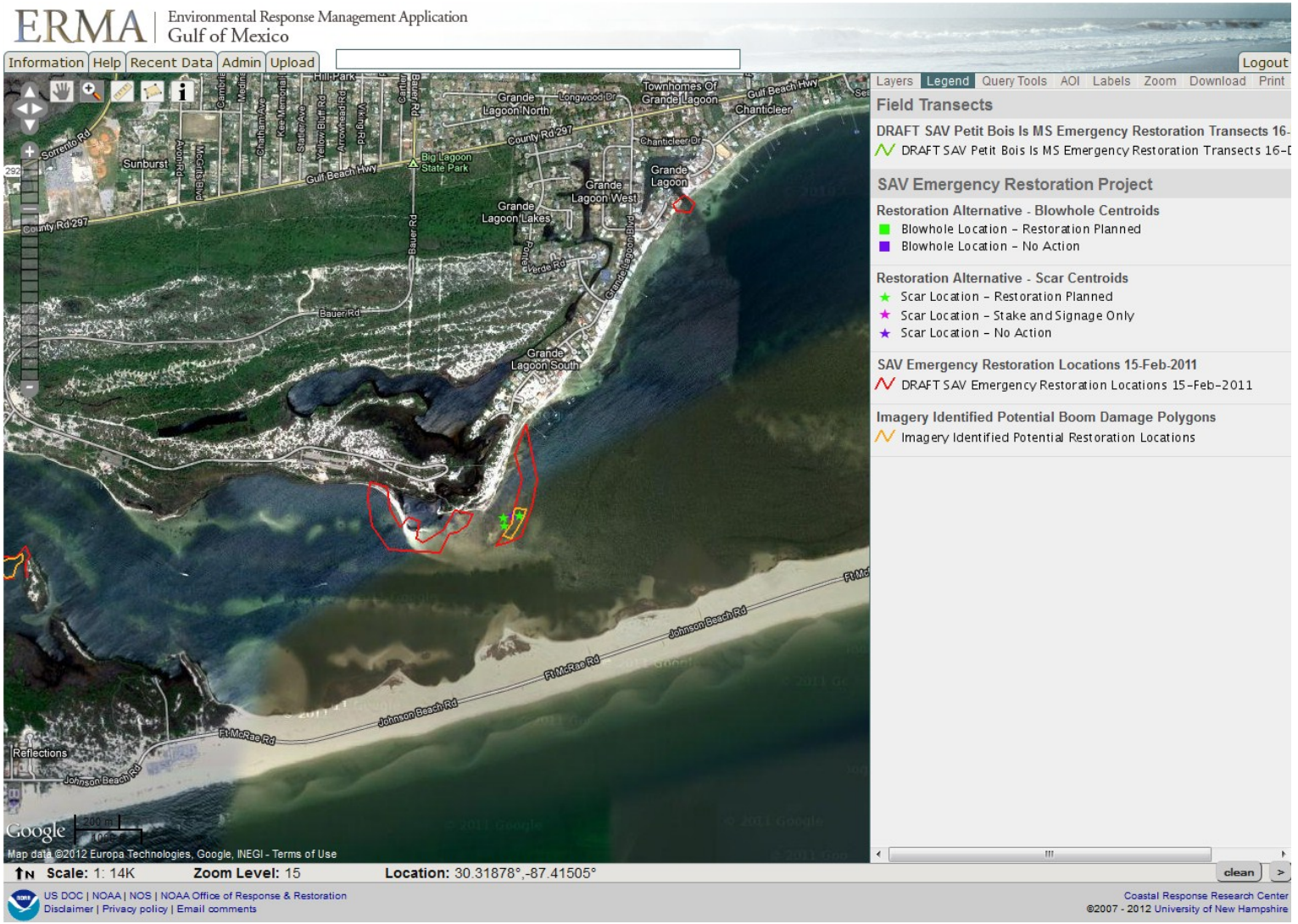
  - Staging/Planning
  - Progress Monitoring

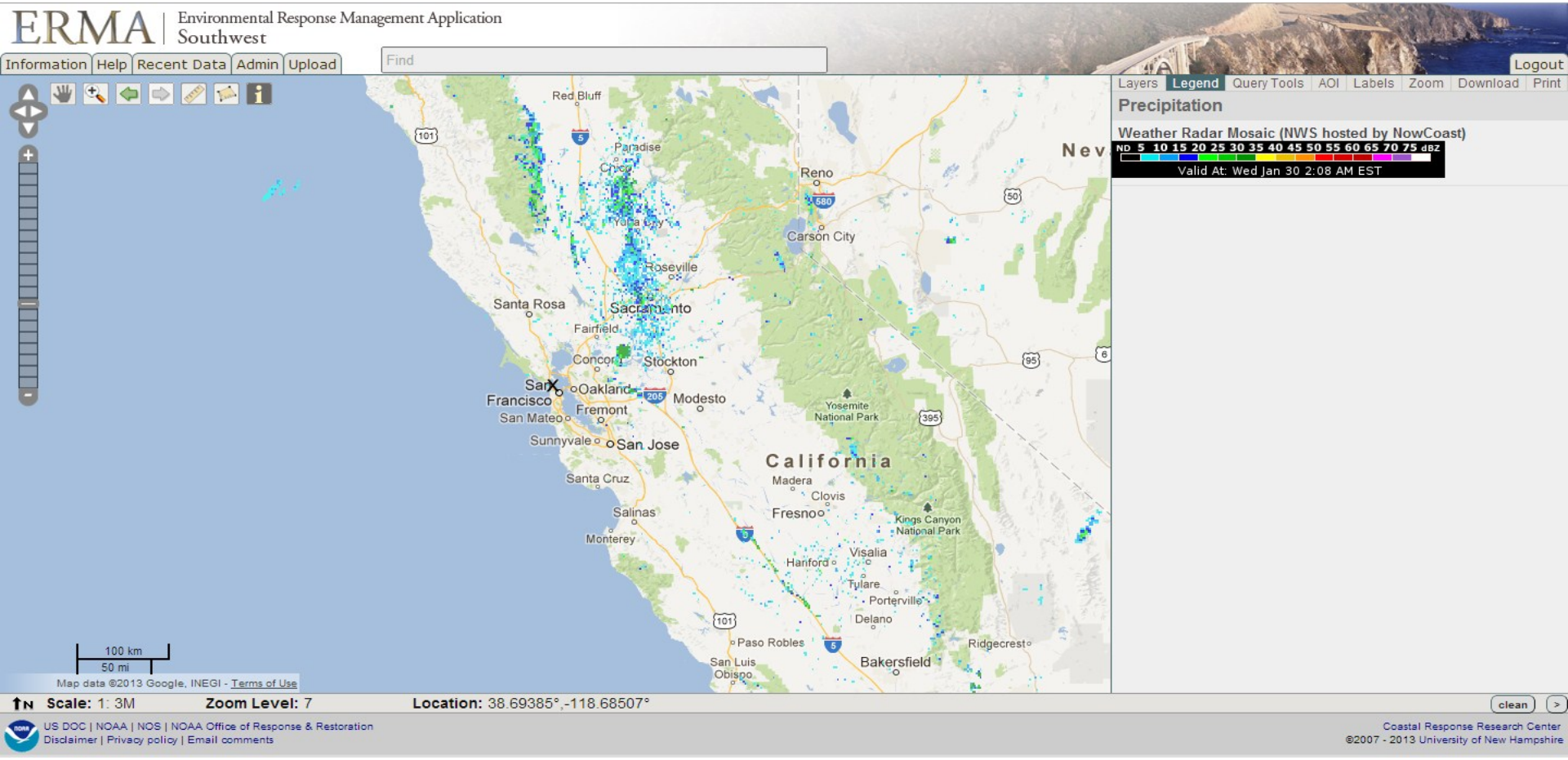
Restoration



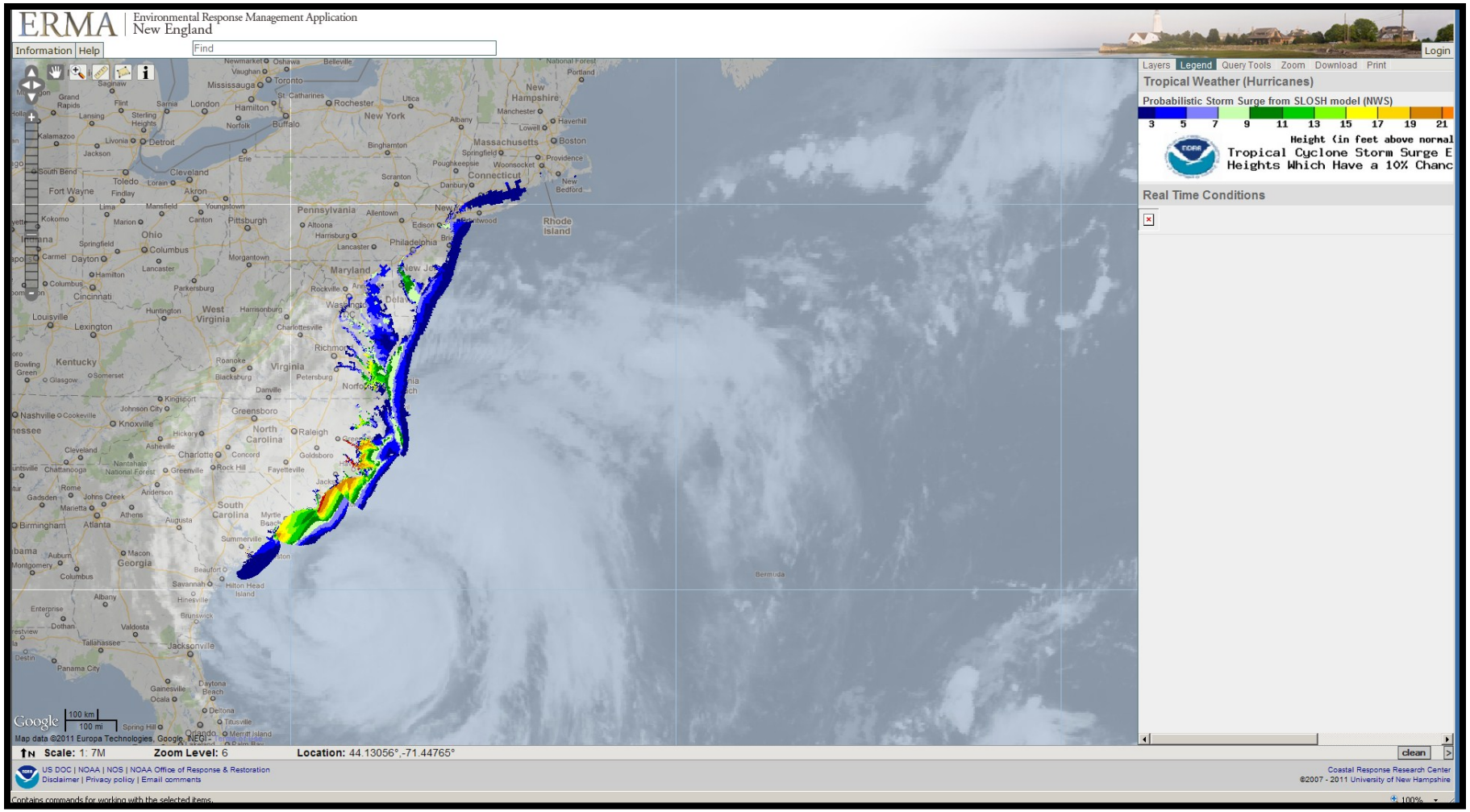
Types of Information in ERMA

- Base Mapping
  - Google aerial, terrain, roads
  - Nautical charts
- Incident Information
  - Trajectories
  - Resource tracking –MMIS & Vessel Name
  - Shoreline oiling
  - Sampling data
- Weather & Buoys
  - Hurricane/Storms
  - Remote-sensing imagery
- Resources at Risk
  - NOAA ESI data layers
  - Local habitat and species
  - Seafood safety
- Document & Photo Links
  - ESI and GRP .pdfs
  - Attached to layers
  - Field photos

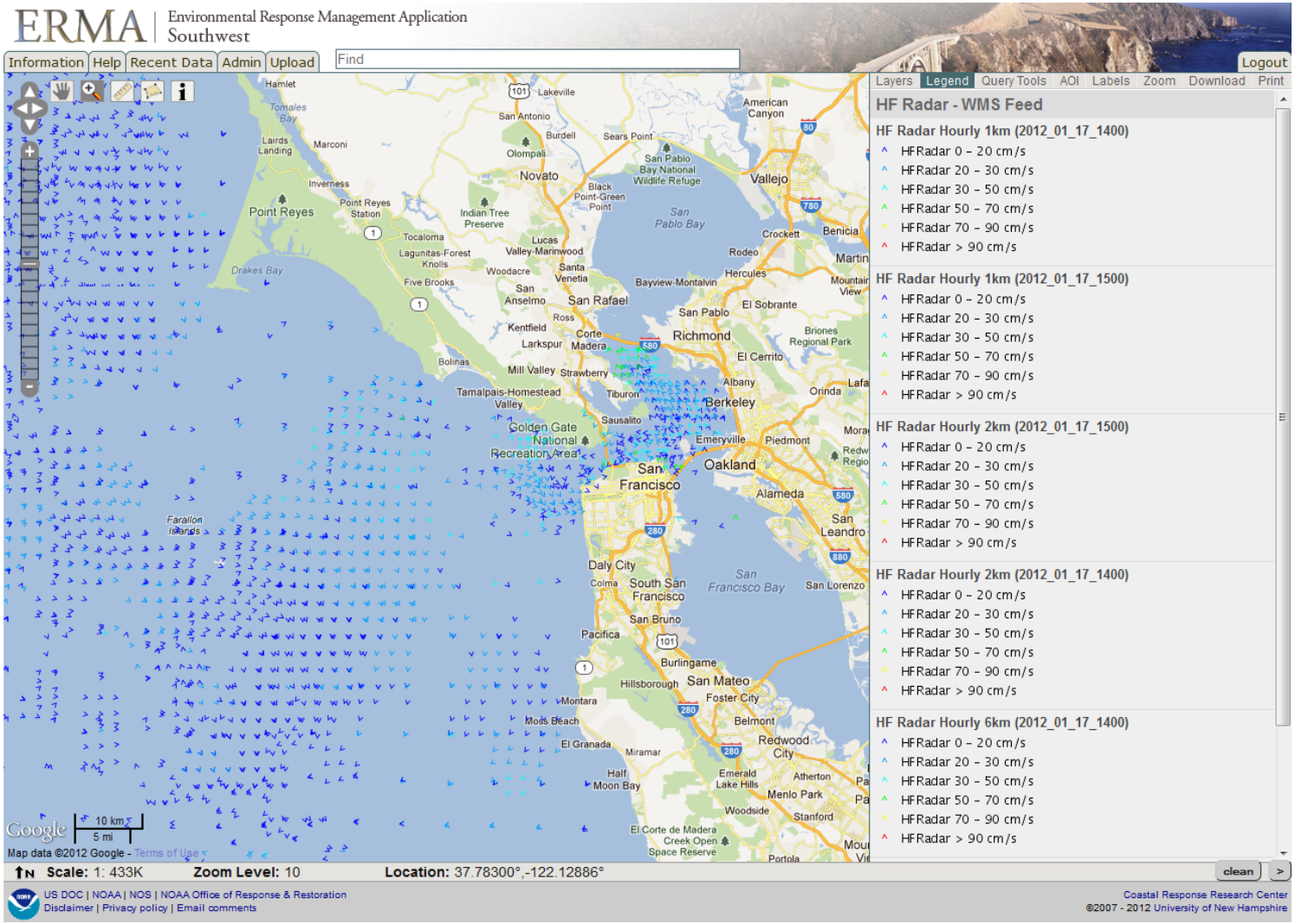
Current Weather Conditions



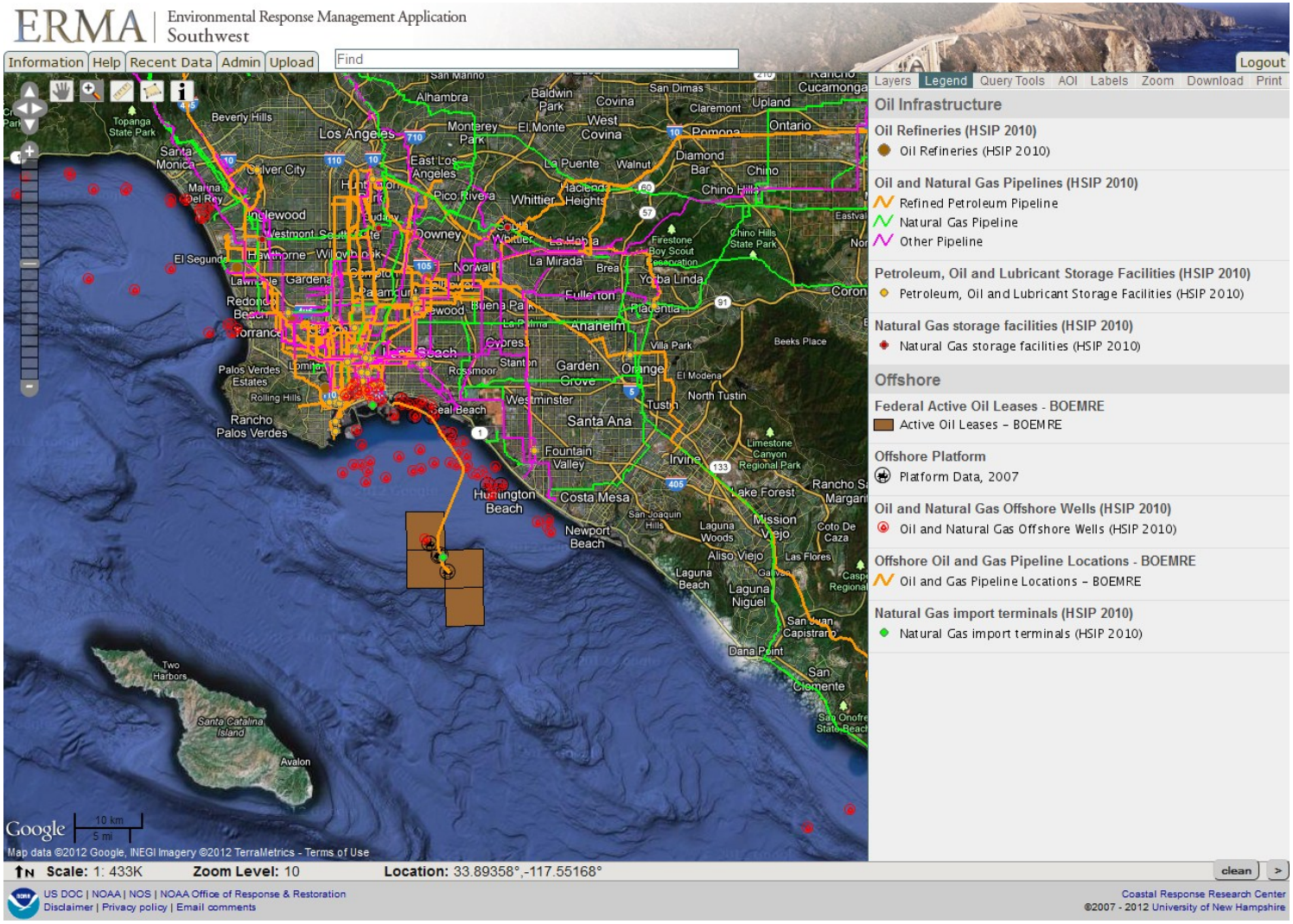
Model Output and Satellite



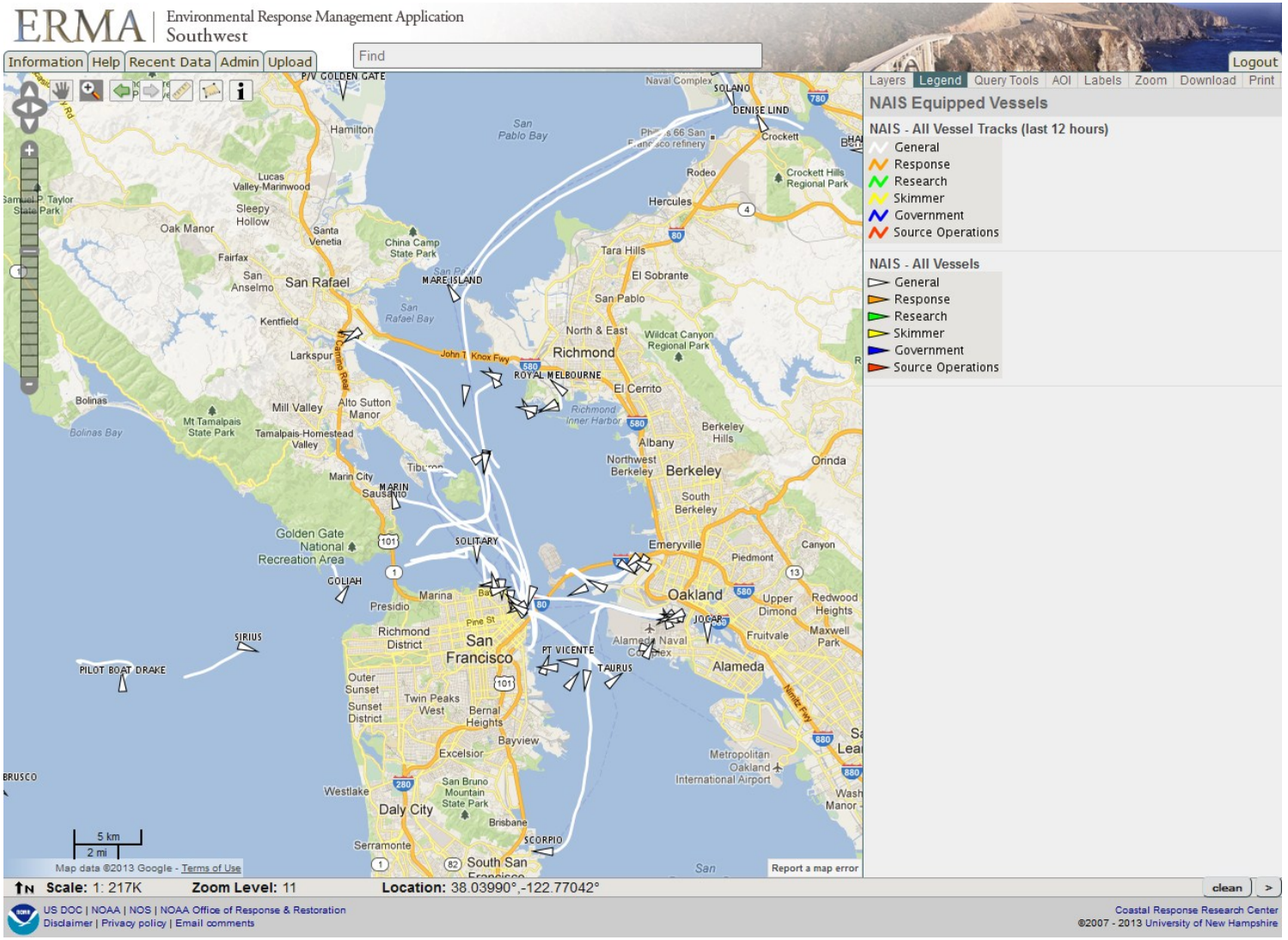
HF Radar – Live Feed



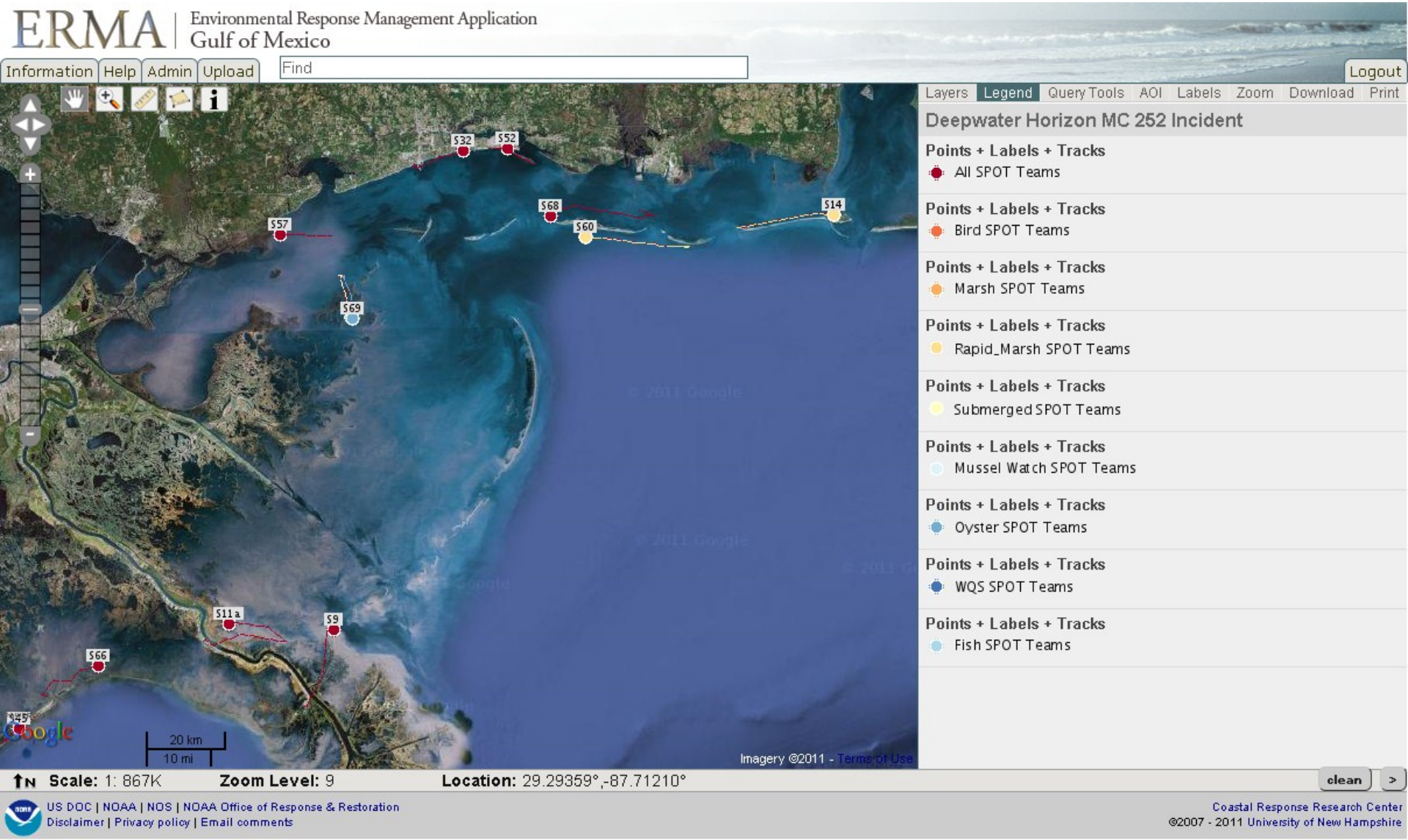
Offshore/Onshore Oil Infrastructure



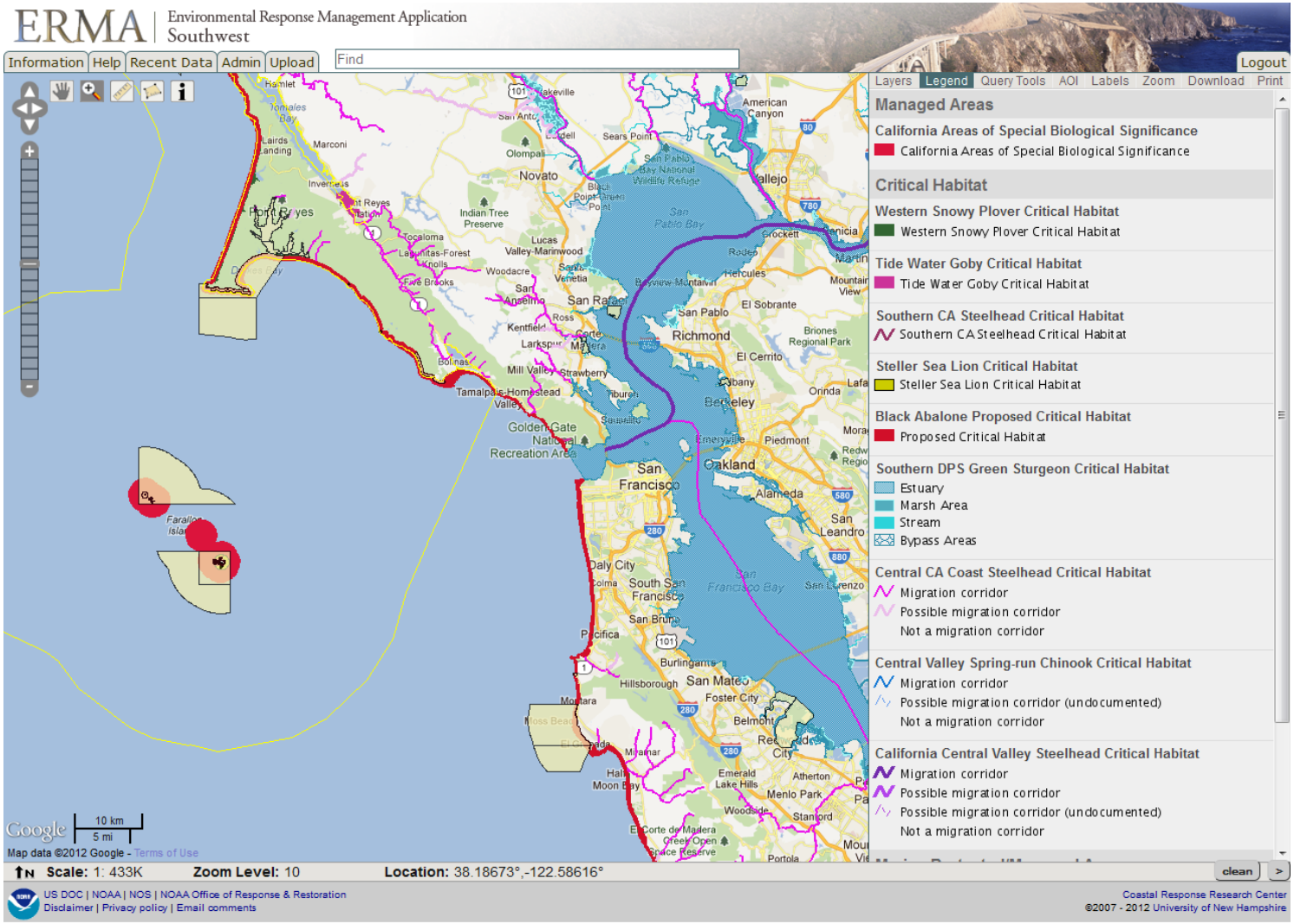
Vessel Tracking



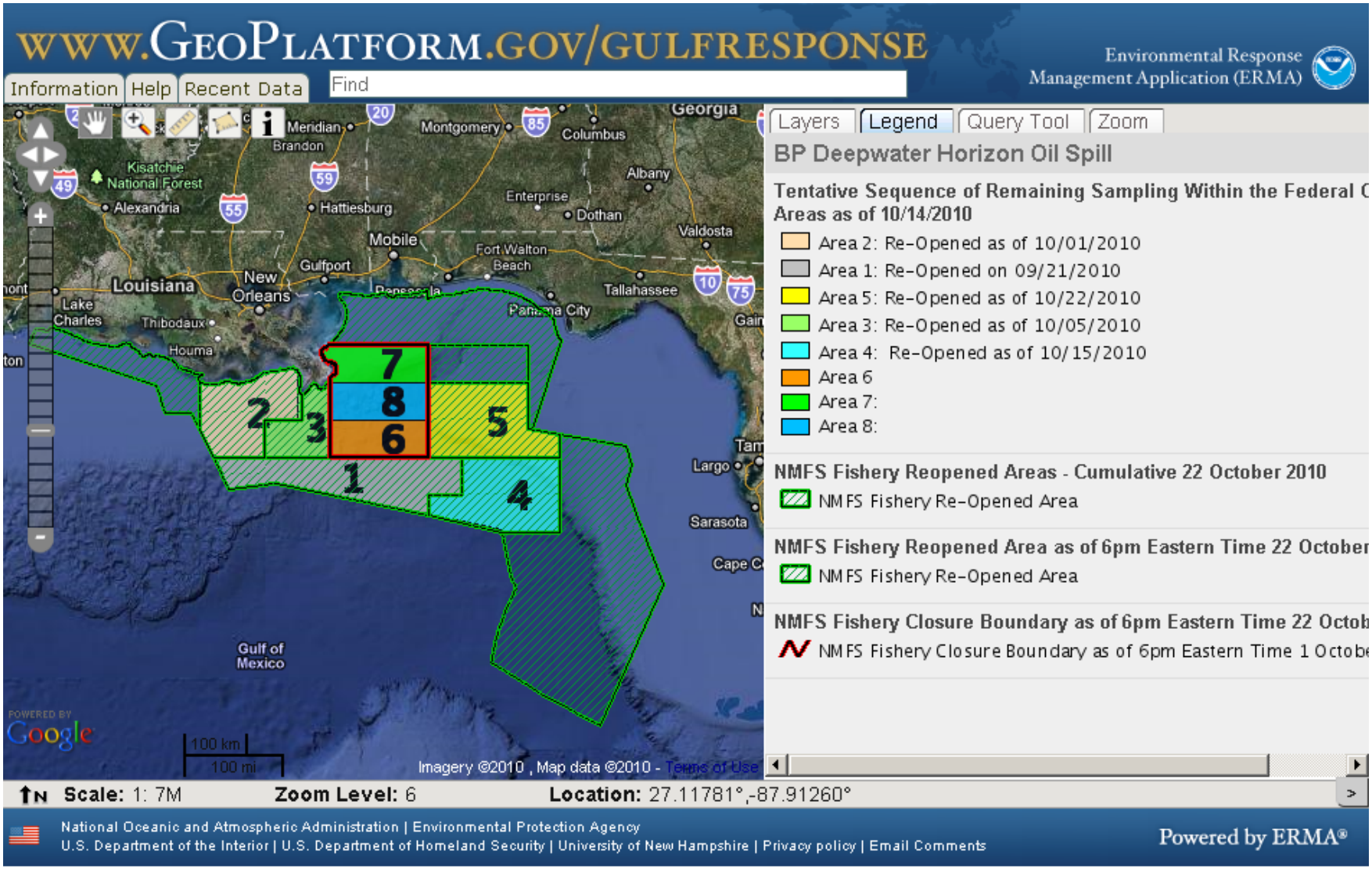
Field Personnel Tracking



Marine Protected Areas



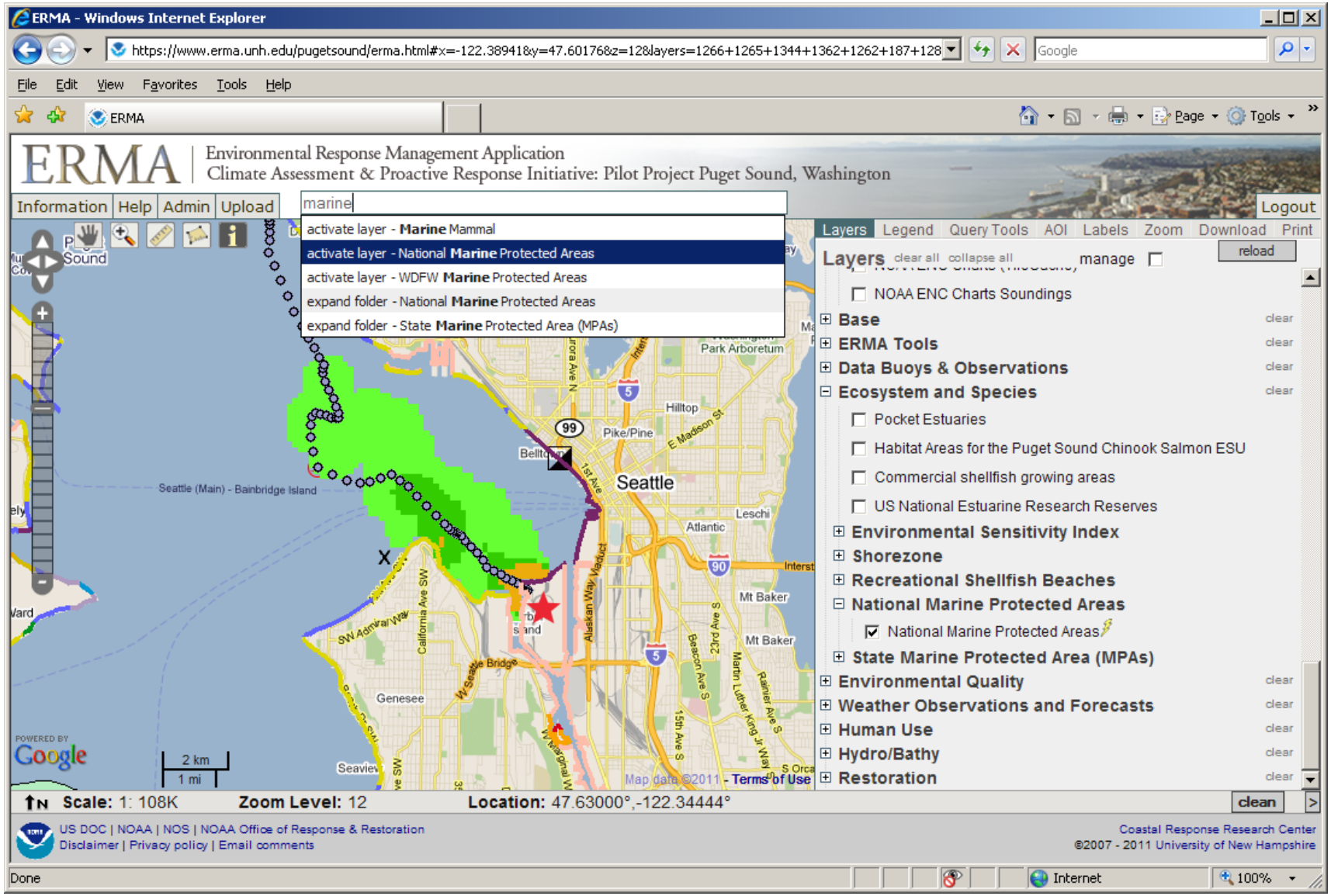
Fishery Closures and Re-Openings



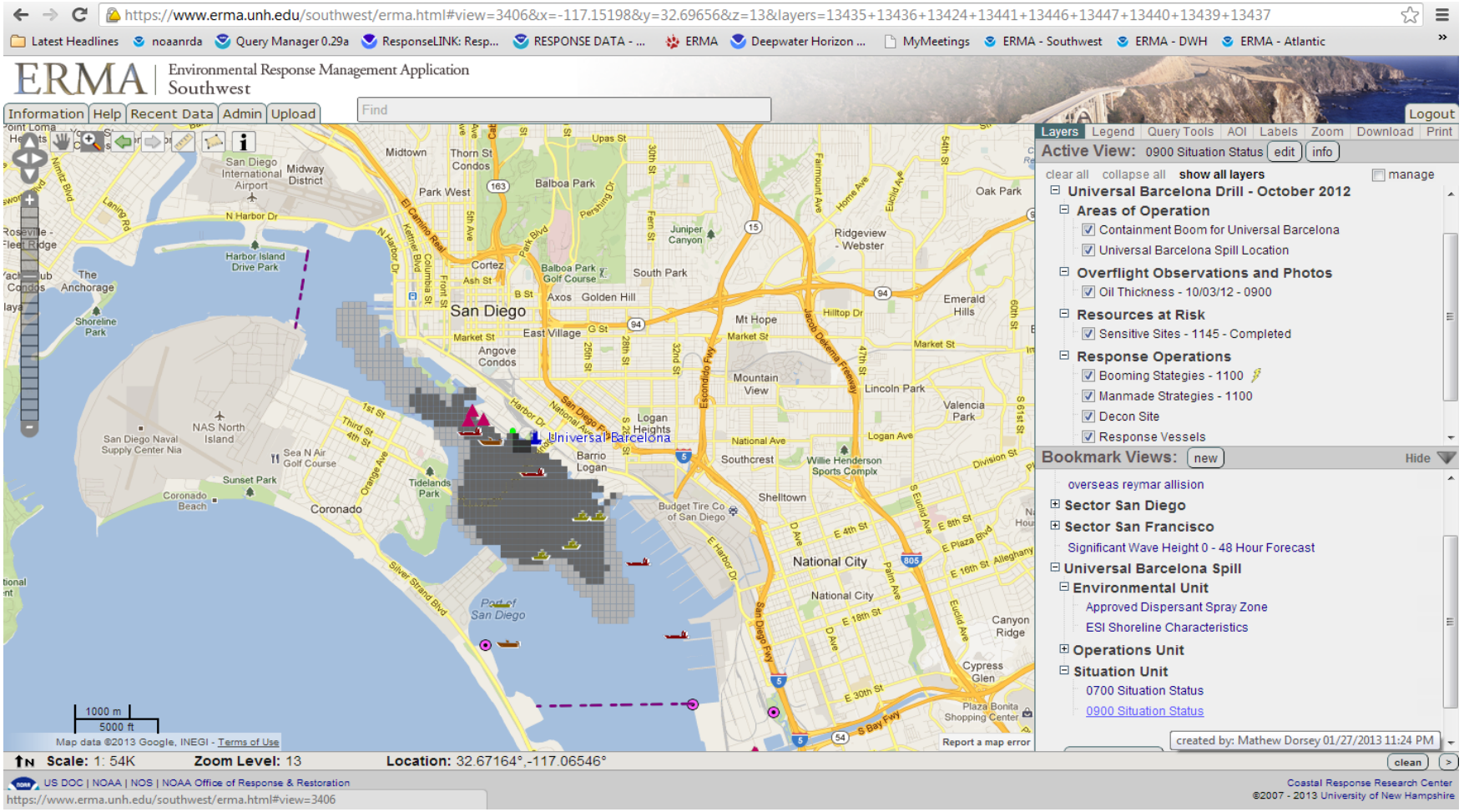
Interactive Tools

- **Zoom To**
  - Lat/Long
  - Place name
  - Ship – Vessel Name (NEW)
- **Bookmark Views (NEW)**
  - Saves layers and location
  - Customizable slideshow
- **Areas of Interest**
  - User-made map features
- **Measurement Tools**
  - Length/Area
- **Animations**
  - Show key layers across time
- **Full Metadata Access**
- **Find tool**
  - Automated search of all layers
- **Map Labels**
  - Customize with user-made feature labels
- **Print Tools**
  - Timestamp
  - Various page sizes
- **Interactive Query Tools**
  - Layer Query by Polygon
  - NOAA ESI
  - US Fish and Wildlife IPAC
- **Identify tool**
  - Analytical chemistry results
  - Status of ship locations

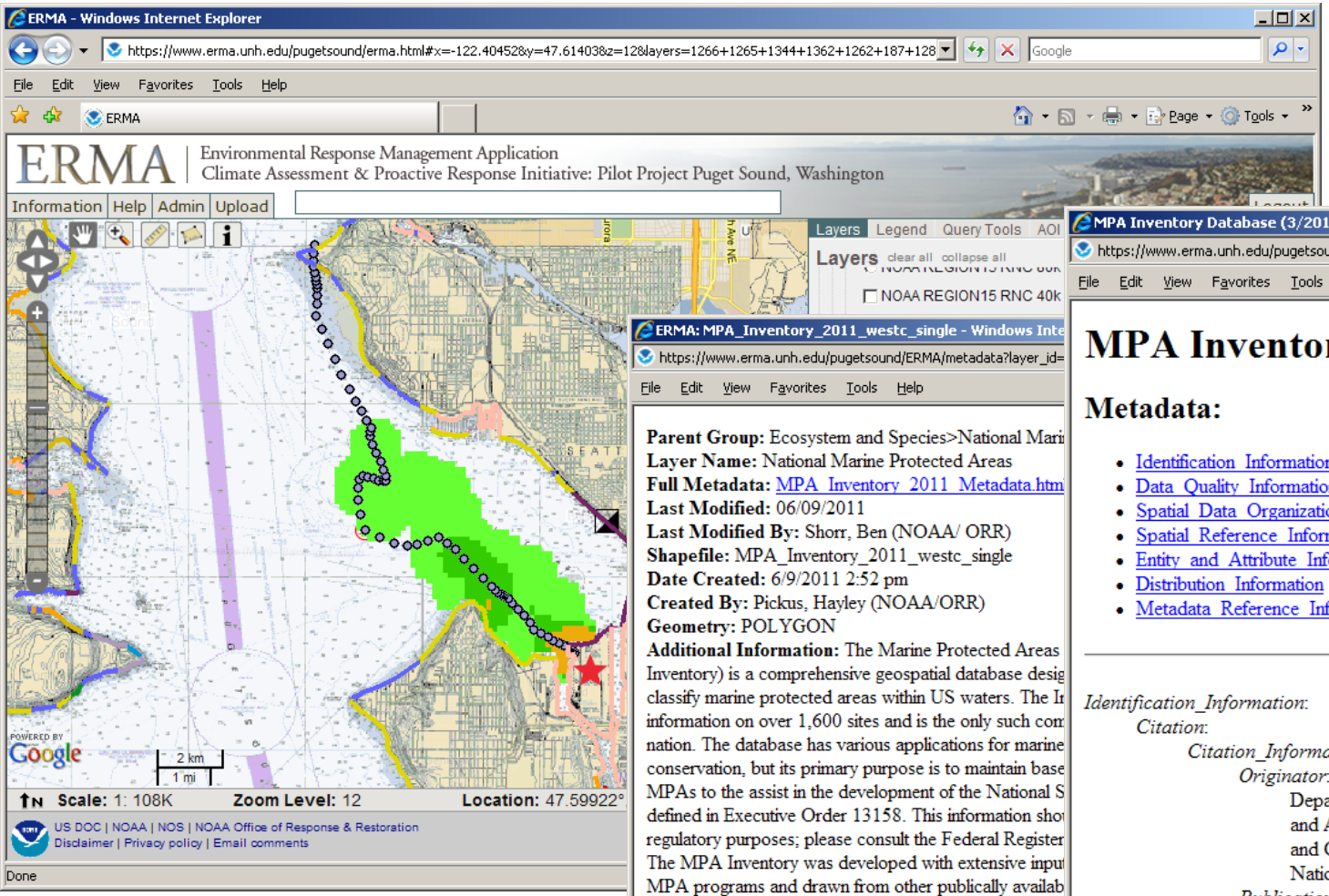
“Find” Feature Layers



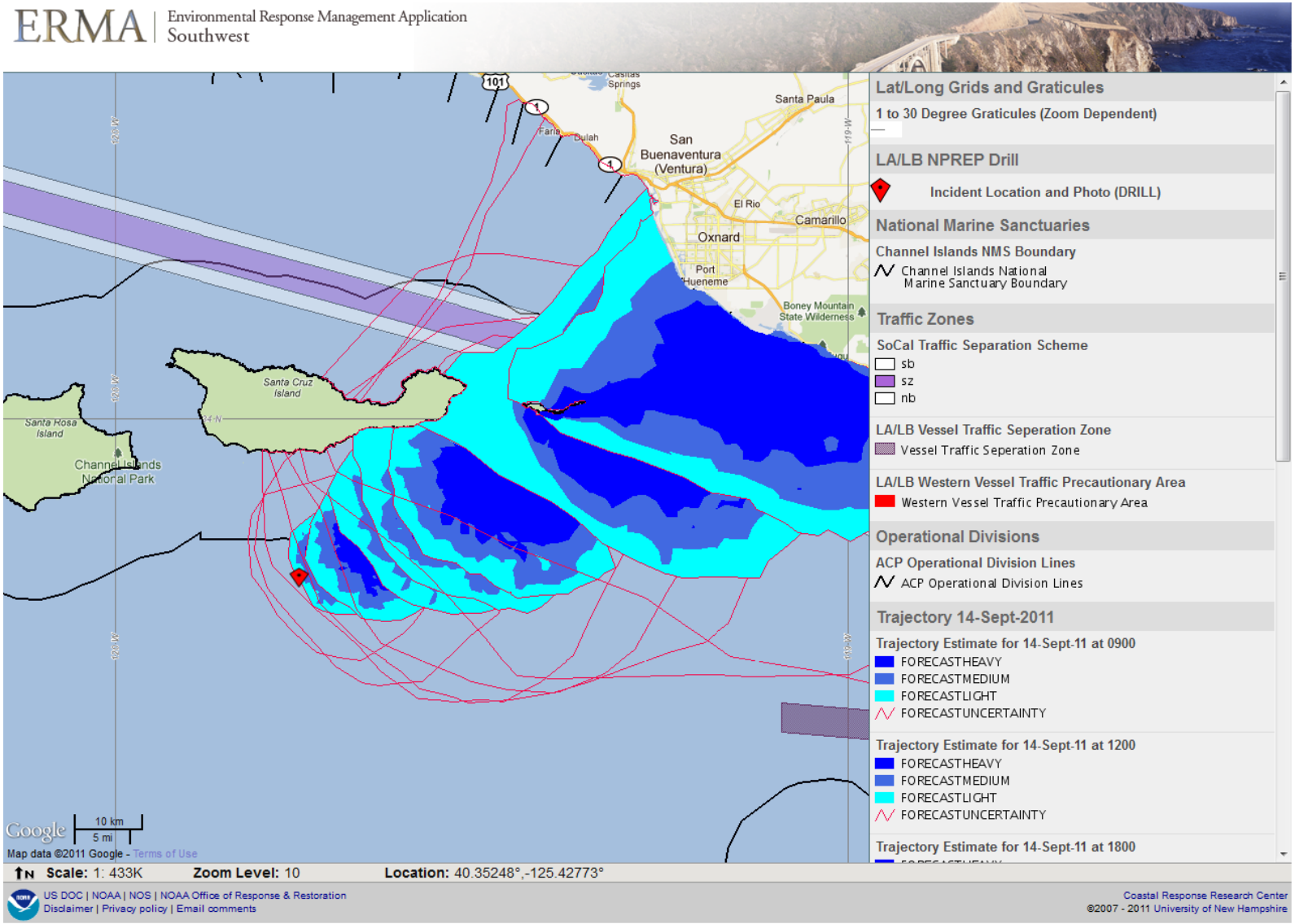
Bookmarked Map Views



Full Metadata Access



Animation


ERMA | Environmental Response Management Application Southwest
Santa Paula
San Buenaventura (Ventura)
El Rio
Camarillo
Oxnard
Port Hueneme
Boney Mountain State Wilderness
Santa Cruz Island
Santa Rosa Island
Channel Islands National Park
Lat/Long Grids and Graticules
1 to 30 Degree Graticules (Zoom Dependent)
LA/LB NPREP Drill
Incident Location and Photo (DRILL)
National Marine Sanctuaries
Channel Islands NMS Boundary
Channel Islands National Marine Sanctuary Boundary
Traffic Zones
SoCal Traffic Separation Scheme
sb
sz
nb
LA/LB Vessel Traffic Seperation Zone
Vessel Traffic Seperation Zone
LA/LB Western Vessel Traffic Precautionary Area
Western Vessel Traffic Precautionary Area
Operational Divisions
ACP Operational Division Lines
ACP Operational Division Lines
Trajectory 14-Sept-2011
Trajectory Estimate for 14-Sept-11 at 0900
FORECASTHEAVY
FORECASTMEDIUM
FORECASTLIGHT
FORECASTUNCERTAINTY
Trajectory Estimate for 14-Sept-11 at 1200
FORECASTHEAVY
FORECASTMEDIUM
FORECASTLIGHT
FORECASTUNCERTAINTY
Trajectory Estimate for 14-Sept-11 at 1800
Google
10 km
5 mi
Map data ©2011 Google - Terms of Use
Scale: 1: 433K
Zoom Level: 10
Location: 40.35248°,-125.42773°
US DOC | NOAA | NOS | NOAA Office of Response & Restoration
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Coastal Response Research Center
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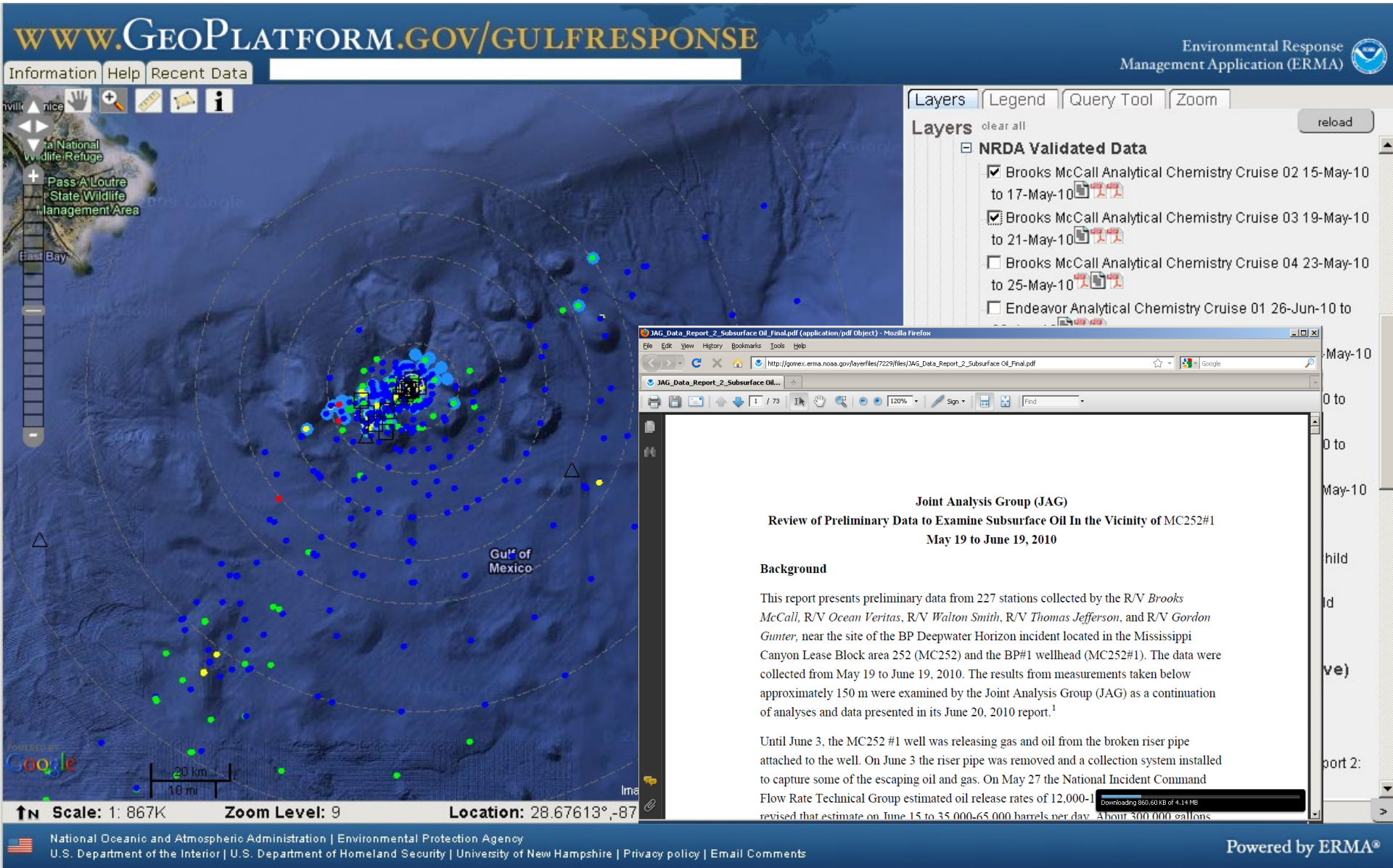
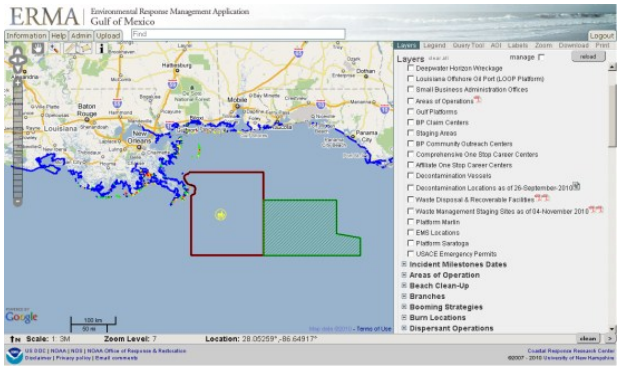
Link to Data Reports & Documentation

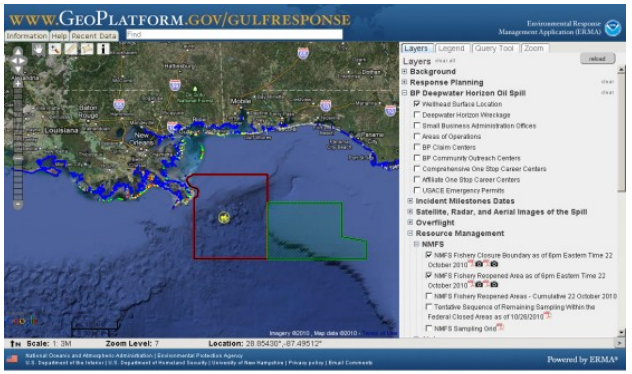


Targets and Field Photos (GeoRSS and Photologger)

Benefits

- Customize your view to see only relevant information
- Download the data for your own use
- Distributive upload capability - upload multiple layers by multiple people
- Secure access to sensitive data sets
- Open Source
- Communicate with the public
- Improved collaboration across agencies and organizations through common view





https://www.erma.unh.edu/southwest

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mathew.dorsey@noaa.gov