



Environmental Unit Overview

PRESENTED BY: ANDREW TAYLOR

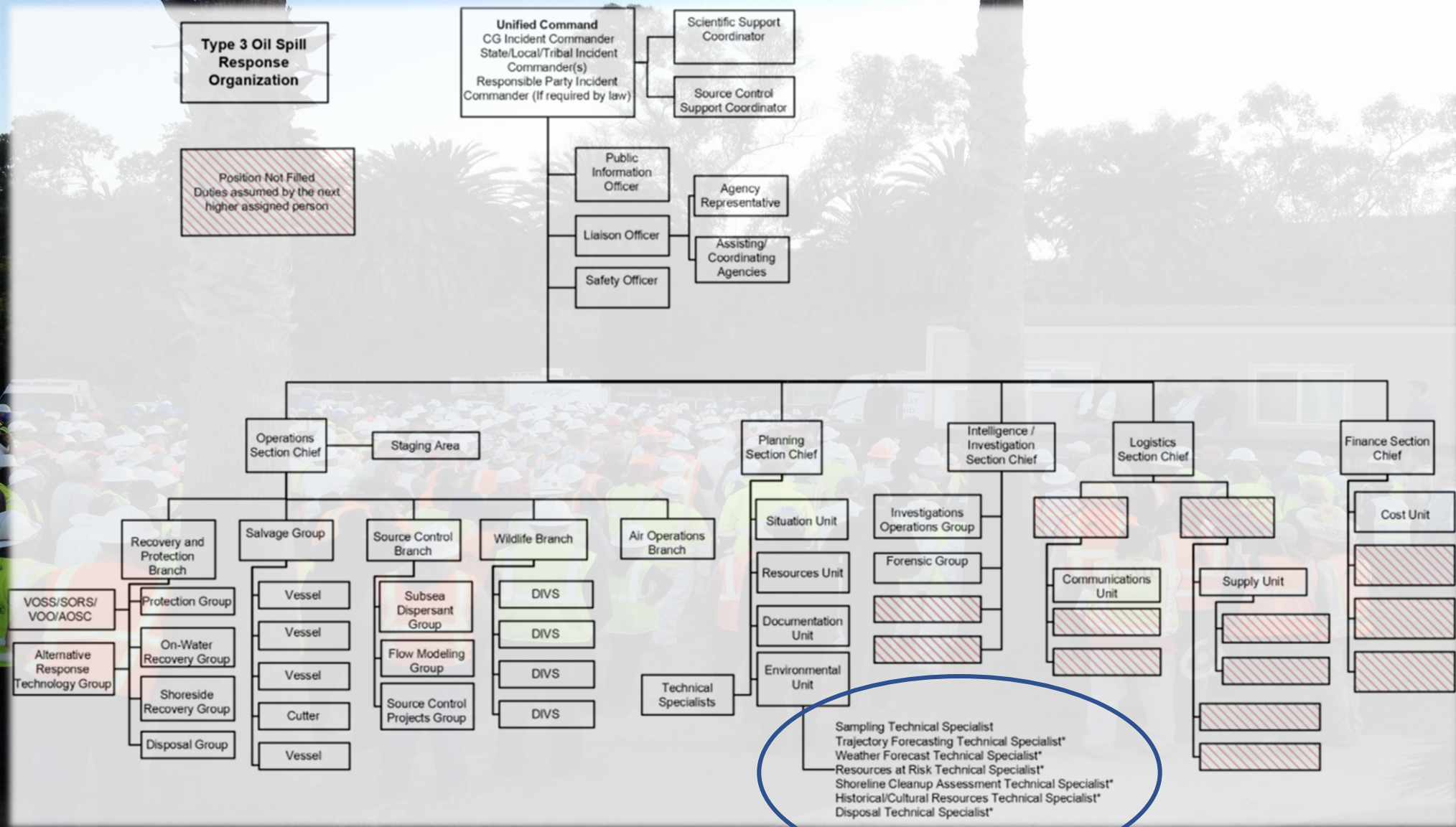
California Department of Fish and Wildlife



Overview

- Role of the Environmental Unit
- Sensitive Site Protection Strategies and Priorities
- Shoreline Cleanup Assessment Technique (SCAT)
- Endpoints and sign-off

Incident Command System (ICS)





Environmental Unit

- Sampling Technical Specialist
- Trajectory Forecasting Technical Specialist
- Weather Forecast Technical Specialist
- Resources at Risk Technical Specialist
- Shoreline Cleanup Assessment Technical Specialist
- Historical/Cultural Resources Technical Specialist
- Disposal Technical Specialist
- Fisheries Closure
- Applied Response Technologies

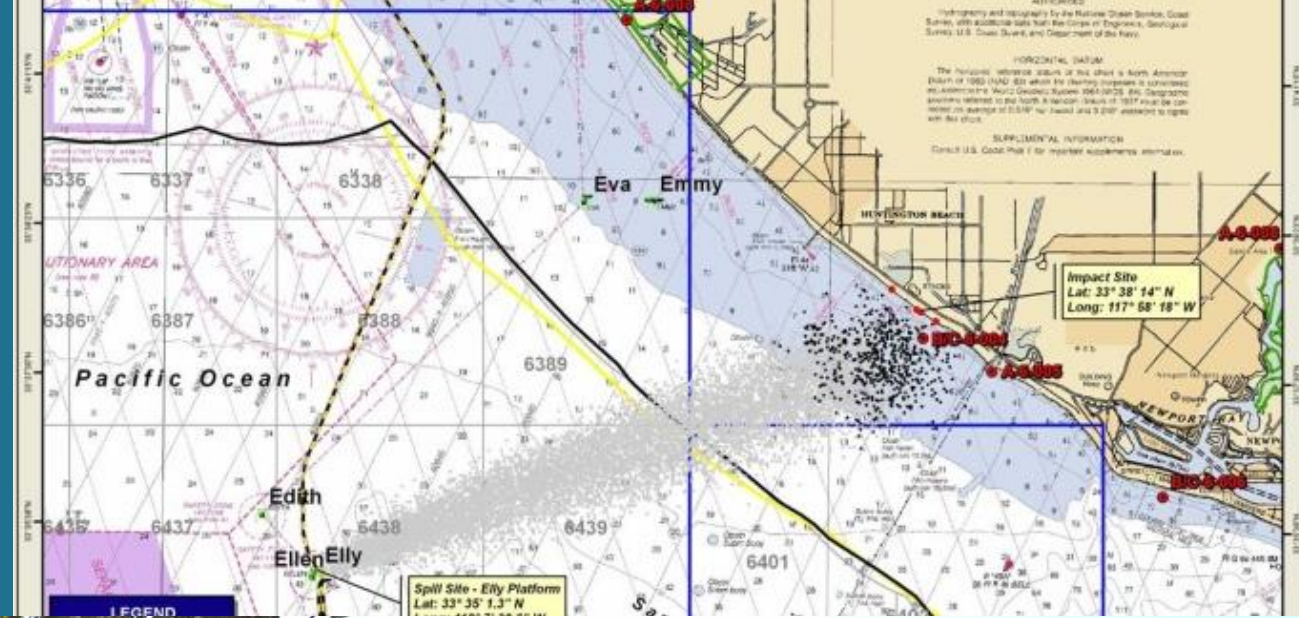
Sampling Technical Specialist

- Responsible for providing a Comprehensive Sampling Plan
 - ✓ Determine sample locations
 - ✓ Sampling methods
 - ✓ Field documentation
 - ✓ Chain of custody
 - ✓ Quality control
 - ✓ Analyses to be performed



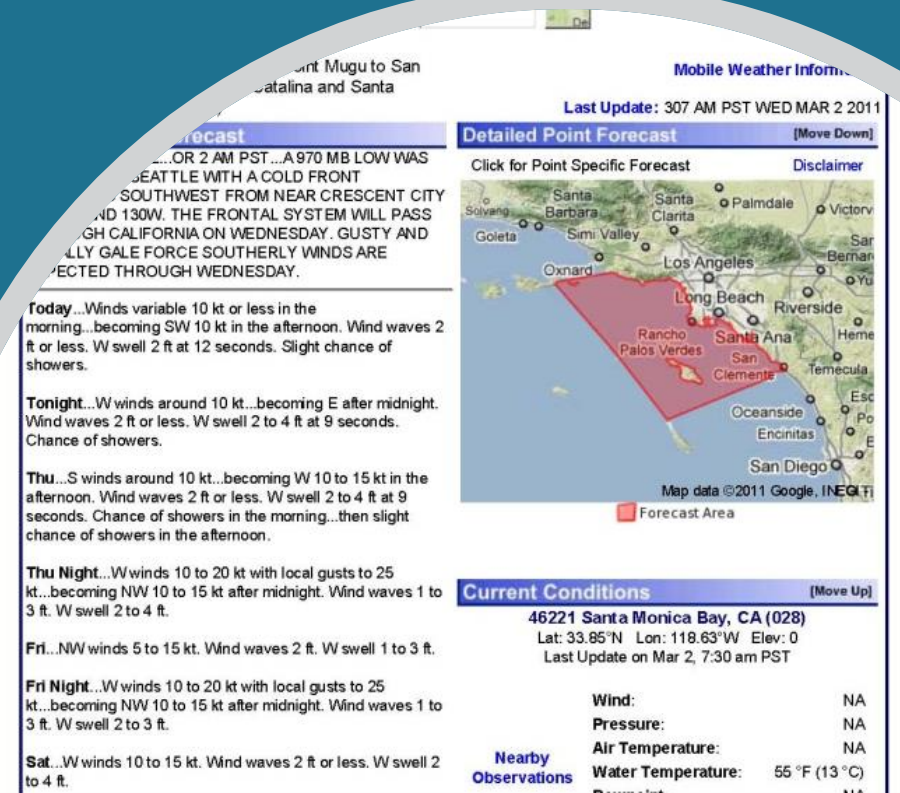
Trajectory Forecasting Technical Specialist

- The Trajectory Analysis Specialist makes projections based on:
- Field observations
- Remote sensing (satellites, aircraft, shore-based radars, etc.)
- Computer modeling
- Weather, tides, & currents



Weather Forecasting Technical Specialist

- Responsible for acquiring and reporting incident-specific weather forecasts.
- Works closely with the Scientific Support Coordinator and Trajectory Forecasting Technical Specialist.
- Information will be posted at the Situation Unit.



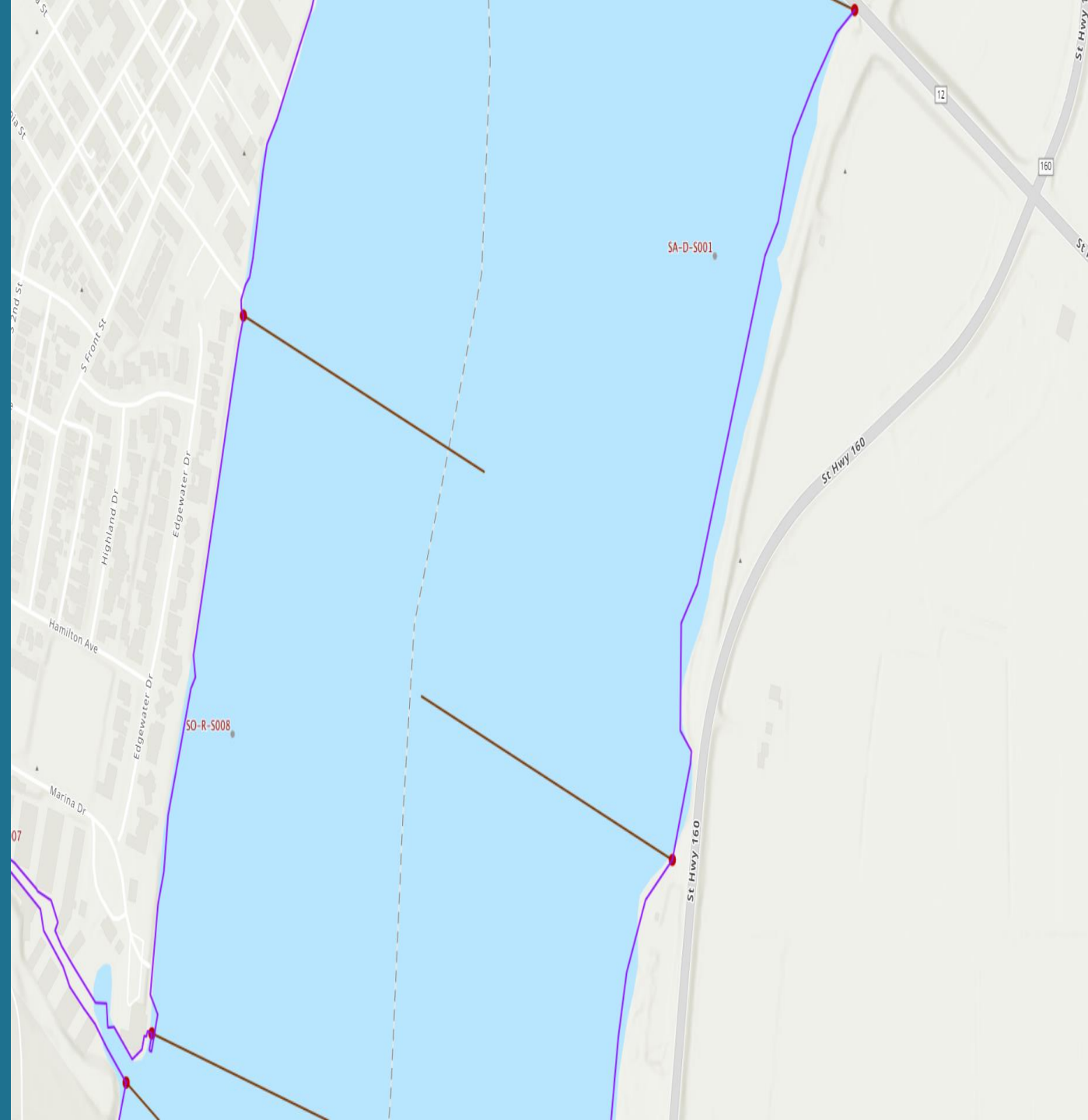
Resources at Risk Technical Specialist

- Identifies resources at risk from the spill
- These resources include:
 1. Environmental Sensitive Sites
 2. Cultural/Historical Sites
 3. Economical Resources
- Develops a priority list for site protection (ICS 232)



Shoreline Cleanup Assessment Technique Technical Specialist

- Staff of field teams (SCAT) and data processors (GIS)
- Mapping the extent of the oiling on the shoreline
- Provide cleanup recommendations



Historical/Cultural Resources Technical Specialist

- Responsible for identifying and resolving issues related to historical/cultural sites impacted or threatened by the spilled oil
- Works closely with:
 - State Historical Preservation Officer
 - Land Management Agencies
 - Native Tribes
 - Other Concerned Parties

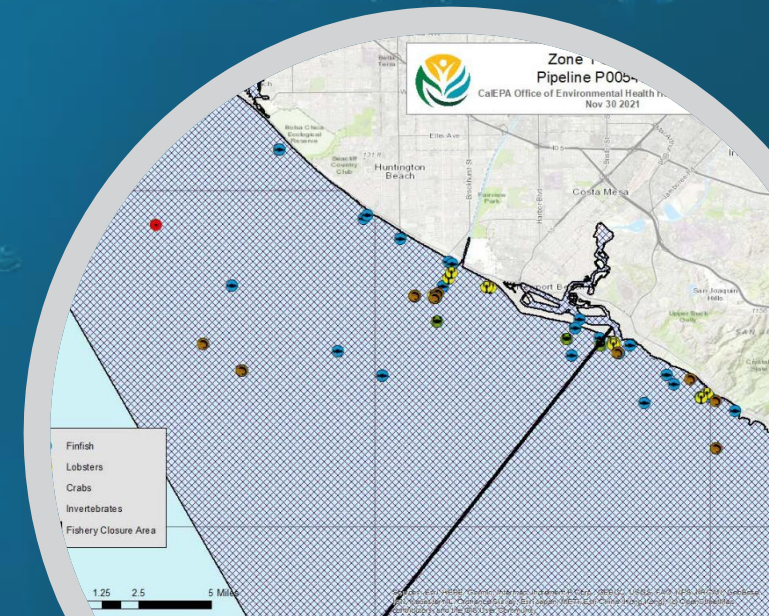


Disposal Technical Specialist

- Responsible for developing a comprehensive management plan for all waste which will be generated by the spill.
 - Waste storage and segregation
 - Reporting and permits
 - Oil waste quantification
 - Waste transportation
 - Waste disposal

Fishery Closure

- CDFW-OSPR notifies the Office of Environmental Health Hazard Assessment (OEHHA)
- Based on:
 - Type of oil and volume that spilled
 - Season
 - Location (e.g., near shore versus offshore; inland versus marine)
 - Seafood species in the area
- If closed for >48 hrs seafood testing is required to reopen the fishery





Applied Response Technologies

Two general types of ART

1. In-situ burning (ISB)
2. Oil Spill Cleanup Agents (OSCA)
 - ◆ Dispersants
 - ◆ Surface washing agents
 - ◆ Sorbents
 - ◆ Solidifiers
 - ◆ Bioremediants

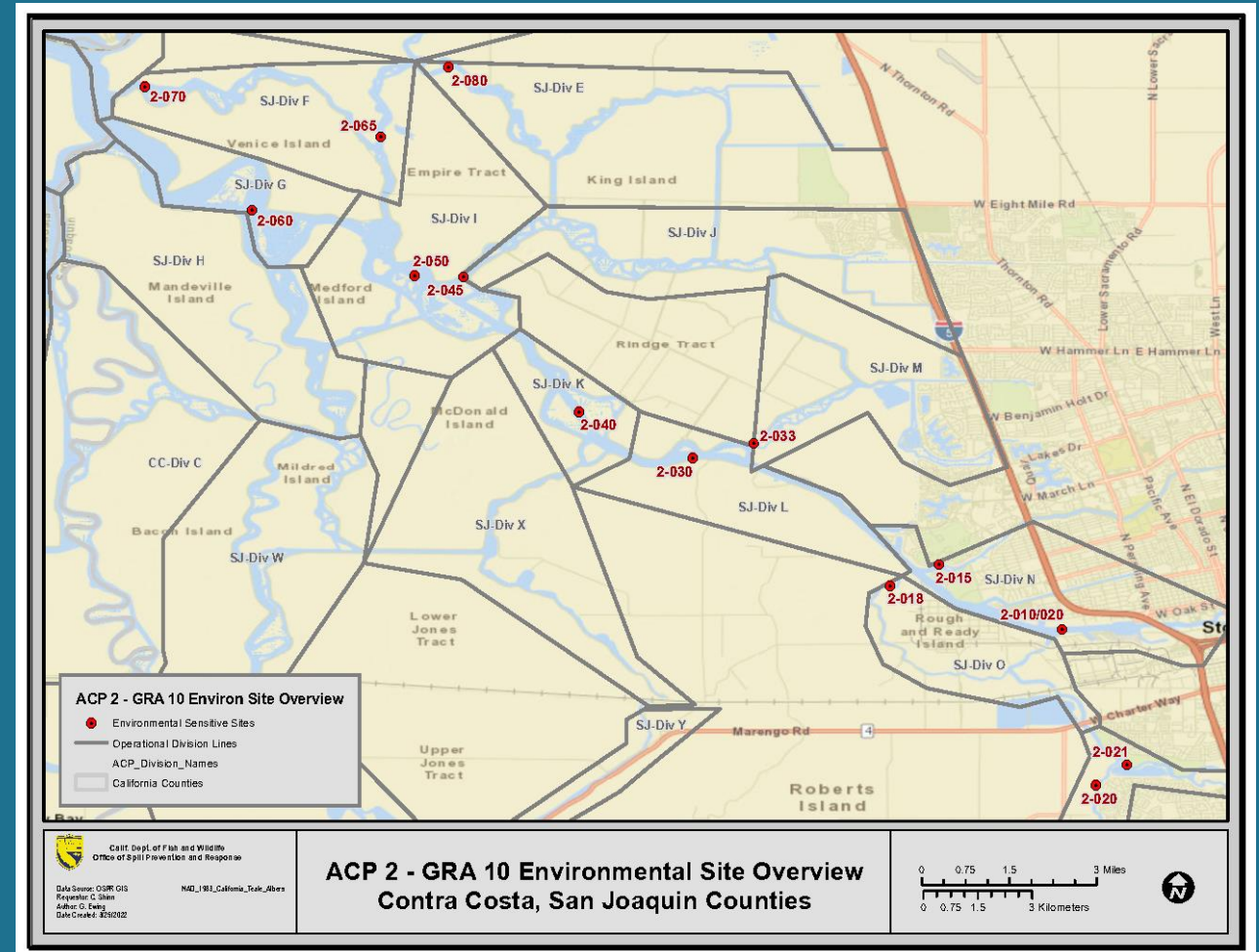
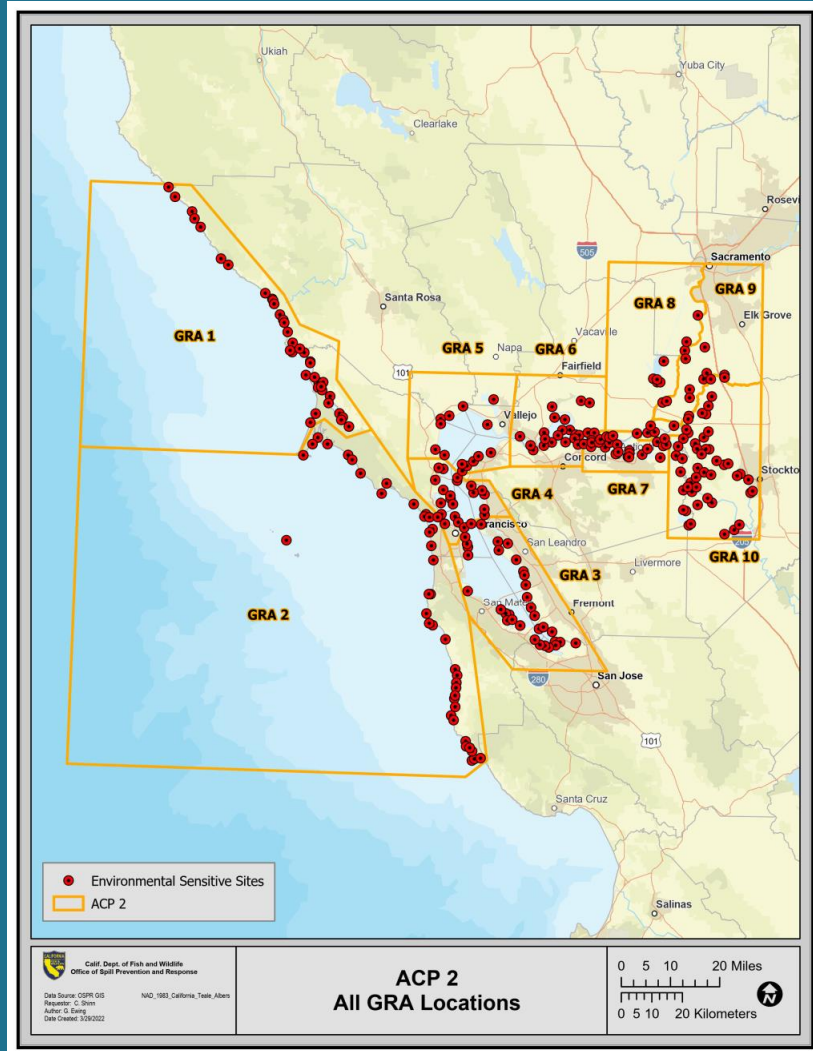
Sensitive Site Protection Strategies and Priorities

A photograph of a large body of water, likely a bay or harbor, under a clear blue sky. In the foreground, a yellow containment boom is visible, curving across the water. In the middle ground, a small white boat with a canopy is moving across the water. The background shows a distant shoreline with buildings and mountains.

- Resources at Risk
 - Environmental Sensitive Sites
 - Habitats, Birds, Marine Mammals
 - Cultural/Historical Sites
 - Cultural and Tribal Resources, Historic Structures and Sites
 - Economic Resources
 - Water Intakes, Marinas, Recreational Areas and Parks

Area Contingency Plan

- Sensitive Site Summaries
- Sensitive Site Strategies
- Sensitive Site Diagram
- Economic, Cultural and Archeological Resources



Site Summary and Strategy

2-050-A Site Summary - San Joaquin River, Ward Cut Islands Complex

2-050-A

County: San Joaquin ACP Division/Segment:

NOAA Chart: 18661 SACRAMENTO / Map Book: SF Bay and Delta Decimal Degrees: 38.027221 -121.472215
SAN JOAQUIN RIVER

Site Description:

Site is an island complex along the Deep Water Channel from light R8 to light R16. These islands include Tinsley, Ward, Headreach, Fern, Little Venice Islands and many small unnamed channel and berm islands. Though some parts of the islands are partially developed, most are in very natural states varying from freshwater marsh to shrub scrub to riparian. The channels bordering agricultural islands have heavily rip-rapped levees.

Resources at Risk:

ESI and Habitat: 6B Riprap
9B Vegetated low banks
10B Freshwater marshes

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	Swainson's hawk	FP, ST		Mar-Sep
Birds	California black rail	FP, ST		Mar-Aug
Fish	longfin smelt	ST		Nov-May
Fish	steelhead - Central/Northern California	FT		Nov-Apr
Fish	delta smelt	FT, SE		Mar-May
Plants	Mason's lilaeopsis	SR		Apr-Nov
Reptiles	giant garter snake	FT, ST		Jul-Oct

FT-Federally Threatened, FE-Federally Endangered, FP-Federally Protected, SE-State Endangered, ST-State Threatened, SP -State Protected, SR-State Rare, SSC-Species of Special Concern, BGEPA-Bald and Golden Eagle Protection Act, SSSP-State Special Status Species

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
E	/Manager	Central Delta Water Agency	(209) 969-7755
E	/Office	Mandeville Island Reclamation District	(209) 946-0268
E	/Office	Rindge Tract Reclamation District	(209) 403-4018
E	/Office	Rindge Tract Reclamation District	(209) 956-8800
E	/Engineer	Terminus Tract Reclamation District	(209) 649-4555
E	/Engineer	Terminus Tract Reclamation District	(209) 465-5883
E	/Office	Tinsley Island Reclamation District	(209) 351-2222
E	/Office	Webb Tract Reclamation District	(209) 943-5551
O	/Dispatch, 24-hr	California Department of Water Resources	(916) 574-2714
S	/Dispatch, 24-hr	San Joaquin Office of Emergency Services	(209) 953-6200
T	/Environmental Program Manager	CA Dept. of Fish & Wildlife, Bay Delta Region	(707) 576-2837
T	/Spill Response Coordinator	USFWS, SF Bay-Delta Office	(916) 799-0588

C - Cultural, Historic, Archaeological; E - Entry/Owner/Access; O - Other; S - Safety; T - Trustee; X - Exclusion or Security

2-050-A Site Strategy - San Joaquin River, Ward Cut Islands Complex

2-050-A

Concerns and Advice to Responders:

The major oil issues here are oiling of vegetation and marshes and penetration into burrows and riprap.

Hazard and Restrictions:

Waters are deep draft except in narrow channels between islands, beware of snags and pilings in the shallows. Aerial traffic beware of power wires. Slips, trips and falls.

Site Strategies:

Site Validation Level: II

Strategy: 2-050.1 Objective: EAST End: Exclude/Divert/Collect boom (at light R16) and divert oil to shore for collection.

Strategy: Set 1300 ft of 9X9+ exclusion/diversion booms across the main channel at a diagonal. Deploy to favor collection of oil on the Rindge Tract shore if possible. Be prepared to execute secondary booming on the three channels at the east end if the primary boom is not adequate: 500' of 9x9+ boom from Rindge Tract levee to opposite isle tip on north side. Set a second 550' boom from McDonald Isle to Tule Isle. Anchor near shore leaving a trailing boom length to maintain seal during tidal changes. Back with sorbent. Shoreside skimming from Rindge Tract (or McDonald Isl). Use 50ft of Oil Snare (OS), 100ft of sorbent boom to collect oil that may accumulate. Contact IC if oil accumulates in skimmable quantities.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	9x9 inch		2350	feet	
Boom	Oil Snare (pom-pom)			50	feet	
Boom	Sorbent			2100	feet	
Anchor	Danforth	25 lb		8		
Vessel	Boom Boat			1		
Vessel	Skiff or Punt			1		
Staff	Staff to Deploy			5		

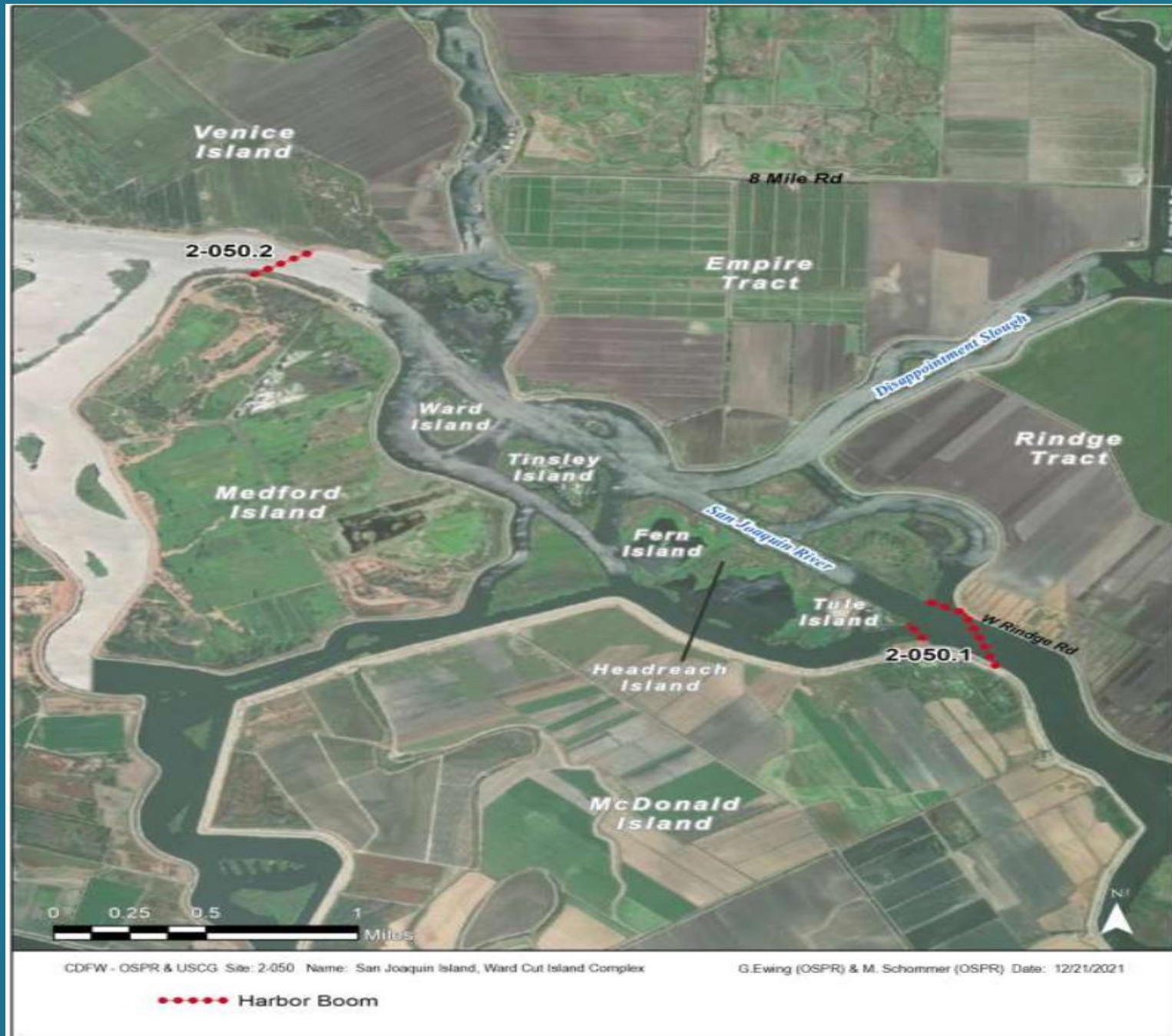
Strategy: 2-050.2 Objective: WEST END: Exclude/Divert/Collect boom. Wind waves are typically a problem here.

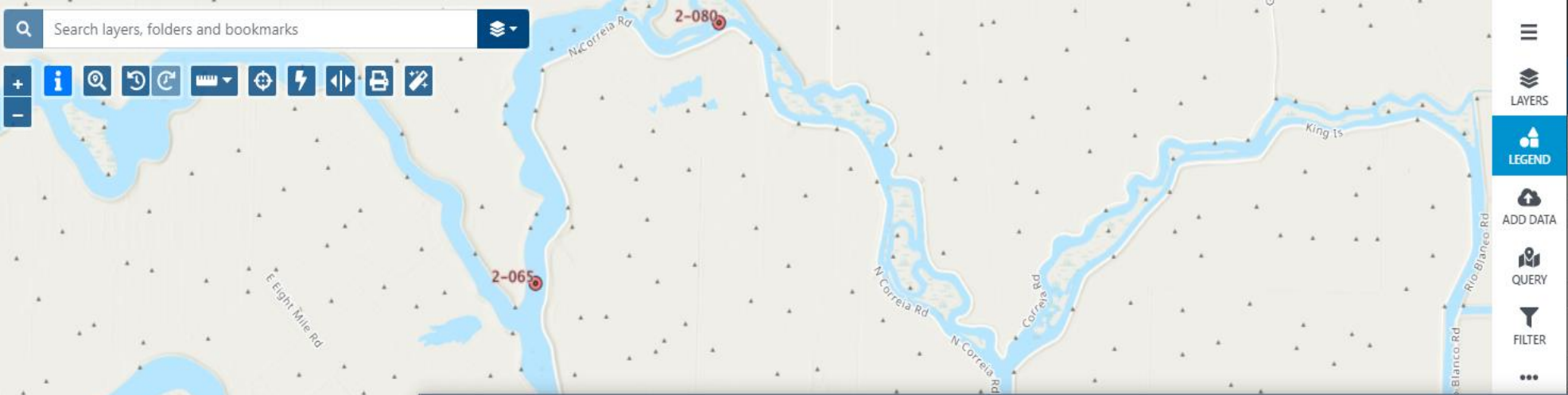
Strategy: At R6 set 1200 ft of 9X9+ Hboom in a long diagonal to divert oil to shore for land-side collection. Favor land-based skim/collect oil at the Venice Isl levee if wind and oil movement permit. Anchor near shore leaving a trailing length for shore seal. Back with sorbent.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	9x9 inch		1200	feet	
Boom	Sorbent			1200	feet	
Anchor	Danforth	25 lb		5		
Vessel	Boom Boat			1		
Vessel	Skiff or Punt			1		
Staff	Staff to Deploy			5		

Site Diagram





ERMA® | Southwest

LEGEND

- ACP Environmental Sensitive Site Names (OSPR, 2023)
 - Environmental Sensitive Site Names
- ACP Environmental Sensitive Sites (OSPR, 2023)
 - ACP Environmental Sensitive Sites
- ACP Economic Sensitive Sites (OSPR, 2023)
 - Economic Sensitive Sites
- ACP SCAT Segment Names - Statewide (OSPR, 2021)

ERMA Identify - Google Chrome

erma.noaa.gov/identify?point=38.03993,-121.49351

ID Location: 38.03993, -121.49351

ACP Environmental Se... ACP Environmental Se...

ACP Environmental Sensitive Site Names (OSPR, 2023) [Layer 44784-wms internal]

gid	latdd	londd	acp_num	site_num_n	site_name	pri_code	area_photo	acp_page
92	38.039810	-121.493400	2.0	2-050	San Joaquin River, Ward Cut Islands Complex	A		http://ftp.dfg.ca.gov/Public/OSPR/WebMapping/ACP/dfg_ospr_acp2/pdfs/sensitive_sites/2-050-A.pdf

ACP Boundary Line (OSPR)

- ACP Boundary Line

DARRP Case Locations

- Oil Spill Case
- Hazardous Waste Site
- Ship Grounding

Esri World Topo

**Environmental Response
Management
Application (ERMA)**

Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

ESI Rank	Estuarine	Lacustrine	Riverine
1A	Exposed rocky shores	Exposed rocky shores	Exposed rocky banks
1B	Exposed, solid man-made structures	Exposed, solid man-made structures	Exposed, solid man-made structures
1C	Exposed rocky cliffs with boulder talus base	Exposed rocky cliffs with boulder talus base	Exposed rocky cliffs with boulder talus base
2A	Exposed wave-cut platforms in bedrock, mud, or clay	Shelving bedrock shores	Rocky shoals, bedrock ledges
2B	Exposed scarps and steep slopes in clay		
3A	Fine to medium-grained sand beaches		
3B	Scarps and steep slopes in sand	Eroding scarps in unconsolidated sediment	Exposed, eroding banks in unconsolidated sediments
3C	Tundra cliffs		
4	Coarse-grained sand beaches	Sand beaches	Sandy bars and gently sloping banks
5	Mixed sand and gravel beaches	Mixed sand and gravel beaches	Mixed sand and gravel bars and gently sloping banks
6A	Gravel beaches Gravel beaches (granules and pebbles)*	Gravel beaches	Gravel bars and gently sloping banks
6B	Riprap Gravel beaches (cobbles and boulders)*	Riprap	Riprap
6C*	Riprap		
7	Exposed tidal flats	Exposed tidal flats	
8A	Sheltered scarps in bedrock, mud, or clay Sheltered rocky shores (impermeable)*	Sheltered scarps in bedrock, mud, or clay	

Shoreline Types

8B	Sheltered, solid man-made structures Sheltered rocky shores (permeable)*	Sheltered, solid man-made structures	Sheltered, solid man-made structures
8C	Sheltered riprap	Sheltered riprap	Sheltered riprap
8D	Sheltered rocky rubble shores		
8E	Peat shorelines		
8F			Vegetated, steeply-sloping bluffs
9A	Sheltered tidal flats	Sheltered sand/mud flats	
9B	Vegetated low banks	Vegetated low banks	Vegetated low banks
9	Hypersaline tidal flats		
10A	Salt- and brackish-water marshes		
10B	Freshwater marshes	Freshwater marshes	Freshwater marshes
10C	Swamps	Swamps	Swamps
10D	Scrub-shrub wetlands; Mangroves**	Scrub-shrub wetlands	Scrub-shrub wetlands
10E	Inundated low-lying tundra		

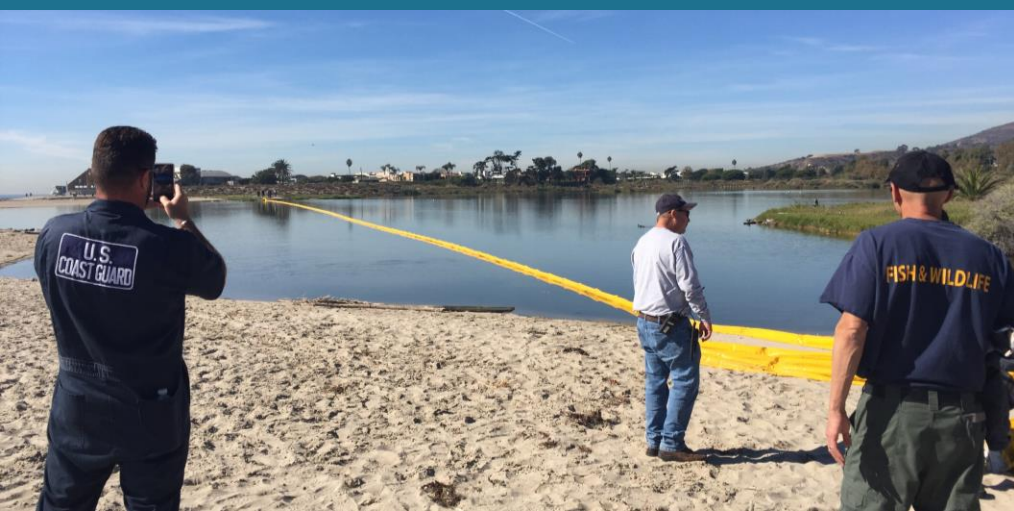
* A category or definition that applies only in Southeast Alaska.

** In tropical climates, 10D indicates areas of dominant mangrove vegetation.

Site Prioritization

- Over flight and/or Trajectory Information
- Tides, Currents, Swells, Wind
- Timing of Impact
- Likelihood of Impact
- Already Impacted

1. Incident Name This is a drill		2. Operational Period (Date/Time) From: 9/27/23 0700 To: 7/28/23 0700		RESOURCES AT RISK SUMMARY ICS 232-CG	
3. Environmentally Sensitive Areas and Wildlife Issues					
Site #	Priority	Site Name and/or Physical Location	Site Issues		
5-105 A	1	Arroyo Sequit Creek	Seabirds, shorebirds, waterfowl, CA brown pelican, steelhead. Exclude oil from creek.		
5-110 A	2	Malibu Lagoon Coastal Wetland	Shorebirds, waterfowl, CA brown pelican, steelhead, tidewater goby Exclude oil from wetland.		
5-115 A	3	Popanga Creek	Seabirds, waterfowl, shorebirds, CA brown pelican, steelhead, tidewater goby. Exclude oil from creek.		
5-120 A	4	Venice Beach	CA least tern (FE, SE), Western snowy plover, grunion, intertidal fish. No shoreline strategies; consider offshore strategies.		
Narrative Technical specialists may be needed to assist with monitoring shoreline response activities. CA least terns present/nesting in the area from April – Sept; Western snowy plovers present year-round, nesting from March – Sept. Nesting bird season Feb – Sept. Responders should take care to minimize impacts to habitat, vegetation, and wildlife from response activities.					
4. Archaeo-cultural and Socio-economic Issues					
Site #	Priority	Site Name and/or Physical Location	Site Issues		
	HHS	Power plants	Water intakes		
	D	Commercial fishing areas			
	D	Aquaculture			
	E	Marinas and houseboats			
	E	Parks, beaches, recreational areas			
	E	Ship/boat repair			
	E	Vessel traffic area			
Narrative Cultural/historic resources at risk may be present, contact the State Historic Preservation Office at (916) 445-7000 and the South Central Coast Information Center at (657) 278-5395. For tribal contacts, work with an CDFW-OSPR incident tribal liaison to contact the Native American Heritage Commission at (916) 373-3710. Minimizing impacts to resources from response activities may require the use of cultural monitors and/or historic/cultural technical specialists.					
5. Prepared by: (Environmental Unit Leader): Sonia Torres				Date/Time: 9/26/2023 0900	
RESOURCES AT RISK SUMMARY				ICS 232-CG (Rev.07/04)	



Sensitive Site Strategy Evaluation Program (SSSEP)

Shoreline Cleanup Assessment Technique (SCAT)

- SCAT is an assessment of shoreline habitats affected from an oiling event using standardized procedures and terminology
- Suggests clean-up strategies to operations
- Identifies constraints to protect sensitive resources
- Monitors clean-up progress
- Continues until clean-up endpoints are met





SCAT is Multi-Agency



Each team is comprised of representatives of the Unified Command:



- Federal On-Scene Coordinator (FOSC)
- State On-Scene Coordinator (SOSC)
- Responsible Party (RP)
- Local On-Scene Coordinator (LOSC)
- Cultural Representative



SCAT Determines

- Shoreline type & physical setting
 - Intertidal zone and substrate
- Degree of shoreline oiling
 - Oil characterization
 - Surface distribution
 - Surface descriptors
- Sensitive resources (ecological, economic, recreational, historic)



PO, FR, Patchy 40%

Medium Grain Sandy Beach

A photograph of three men in blue vests sitting at a table in a meeting room. They are looking at documents and talking. The room has blue curtains and a whiteboard in the background. The text 'Development of Cleanup Endpoints' is overlaid on the left side of the image.

Development of Cleanup Endpoints

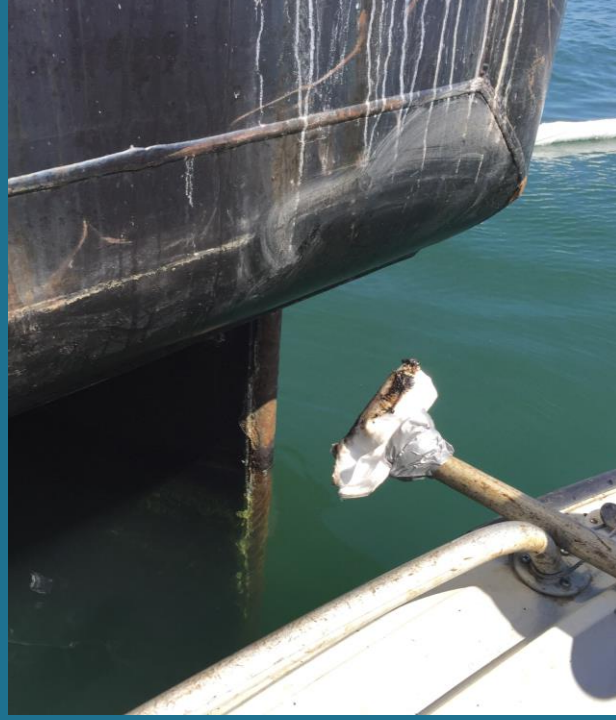
- Developed by the Environmental Unit
- In consultation with trustee agencies and subject matter experts
- Unified Command makes final approval of cleanup endpoints



Selection of Endpoints is Influenced by:

- Safety
- Politics and Economics
- Access
- Sensitive Resource Issues
- Waste Generation
- Scrutiny





End Point Examples

- “No visible oil”
- “No more oil than background”
- “No longer generates sheens that will affect sensitive areas, wildlife, or human health”
- “No longer rubs off on contact”
- “Oil removal to allow recovery / re-colonization without causing more harm than natural removal of oil residues”

Sign-off

- Process of site inspections & recommendations by SCAT segment
- SOFT (Sign-Off Field Team)
 - Final phase of SCAT
 - Knowledgeable staff
 - Stakeholder involvement
- Sign-off procedures
 - Incident-specific
 - Habitat and species-specific





MAZAPETA



Interaction with Local Government



What we can do for you:

- Provide cooperating and responding agencies with information and recommendations for sensitive site protection and prioritization
- Response equipment grants
- Sensitive Site Strategy Evaluation Program
- Vessel and facility plan holder exercise
- Area Committee Meetings

What you can do for us:

- Provide current status information on Resources at Risk
- Deploy and track boom grant equipment to protect economic sensitive sites
- Assist with monitoring environmental sensitive site strategies
- Close county operated tide gates
- Assist with access to county owned properties or facilities

Questions?



Andrew Taylor
Environmental Scientist
California Department of Fish and Wildlife
Office of Spill Prevention and Response

