

Figure 1: GRA 3 Environmental Sensitive Sites + Operational Divisions Overview

ACP 1 – Humboldt Bay

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9811 Humboldt Bay (GRA 3)

Humboldt Bay GRA 3 extends from the north entrance to Humboldt Bay to the south entrance of Humboldt Bay at the western ends of the north and south jetties, respectively, covering approximately 102 miles of tidally influenced shoreline and 27.4 square miles. Humboldt Bay is 14 miles long and 4.5 miles wide at the widest point. There are 12 Environmental Sensitive Sites in GRA 3. Humboldt Bay's GRA 3 shoreline is variable and has been highly manipulated with a mix of modified structures including exposed and sheltered solid man-made structures and riprap, but also includes large sheltered tidal flats and eelgrass beds, salt- and brackish-water marshes, vegetated low banks, fine to medium-grained sand beaches and mixed sand and gravel beaches. Humboldt Bay is California's second largest natural bay and coastal estuary with dozens of smaller sub-estuaries at the bay's confluence with smaller rivers, streams and sloughs fringing the bay also under tidal influence, most manipulated by levees and other water control structures restricting channel width, movement, and natural hydrology. North Humboldt Bay's tidal flats also have numerous subtidal aquaculture leases and produce most of California's oysters.

9811.1 Geographic Response Strategies for Environmental Sensitive Sites

9811.1.1 GRA 3 Site Index

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County: Humboldt ACP Division/Segment: HM - G - S01

NOAA Chart: 18622

Map Book: CA Road Atlas

Decimal Degrees: 40.7674 -124.2171

Site Description:

This response site extends from the cove directly north of the Samoa County Park south about one mile including beaches inside of the USCG Station and toward the north jetty. The public campground and launching ramp facility should be utilized as the staging area of operations for response crews working at this site. The park is managed by Humboldt County. BLM manages the Samoa Dunes Recreation Area (aka North Spit) to the south. Near the mouth of the bay there are a series of coves or pocket beaches where floating debris will naturally be deposited by eddies formed on the outgoing tidal currents. Accumulation of floating debris and oil for collection can be enhanced by the addition of short lengths of boom that extend from shore into the current.

There are multiple subtidal aquaculture sites along the west side of the Samoa Channel and baywater intakes at Redwood Marine Terminal II and Red Tank Docks that supply upland aquaculture and other industrial users nearby. See the Humboldt Bay Shoreline Response Plan for additional information and site contact information for aquaculture.

This area on Humboldt Bay provides important habitat and is a high bird use area year-round. Resources at risk that can be protected using this strategy include seabirds and shorebirds, waterfowl and marine mammals that can be impacted if floating oil leaves the bay on an outgoing tide. Resources inside the bay include cultured oysters, waterfowl, and encrusting intertidal organisms, brant (SSC), waterbirds and shorebirds occur in greater numbers in the fall, winter, and spring (some year round). In winter it is not unusual for over 100,000 birds to use the bay as a feeding or resting site. Offshore birds that are threatened when there is oil in the bay include marbled murrelets (FT, SE), tufted puffins (SSC), brown pelicans, cormorants, ducks, grebes, gulls and loons. Raptors include bald eagle (SE), northern harrier, osprey and peregrine falcon. Marine mammals found in the bay include on occasion, porpoises and whales, but more commonly harbor seals and California sea lions. Humboldt Bay oyster (Pacific, Kumamoto) and clam aquaculture, north bay is home to a large oyster seed production and grow out operation. Care should be taken to minimize impacts to these resources. There are extensive eelgrass beds and mudflats exposed on low tides. Humboldt Bay fisheries include coho (FT, ST) and chinook (FT) salmon, steelhead (FT), coastal cutthroat trout (SSC), green sturgeon (FT, SSC), groundfish (EFH), Dungeness crab, eulachon (FE), longfin smelt (ST), tidewater goby (FE, SSC, Critical Habitat), Pacific herring spawn on eelgrass. Sensitive vegetation in the area includes beach layia, Menzies' wallflower (both FE,SE, CNPS 1B.1), pink sand-verbena (CNPS 1B.1), and dark-eyed gilia (CNPS 1B.2); western bumble bee.

Resources at Risk:

- ESI and Habitat: 3A Fine- to medium-grained sand beaches
- 8B Sheltered solid man-made structures
- 8C Sheltered riprap

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	marbled murrelet	FT, SE	Year-round	
Fish	green sturgeon - Southern	FT, SSC	Year-round	
Fish	longfin smelt	ST	Year-round	
Fish	eulachon	FT	Year-round	
Fish	Pacific lamprey	SSC	Year-round	
Fish	salmonids		Year-round	
Plants	beach layia	FE, SE	Year-round	Mar-Jul
Plants	Menzies' wallflower	FE, SE	Year-round	Mar-Apr

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
C	/	The Wiyot Tribe	(707) 733-5055
O	/	Humboldt Bay Harbor District	(707) 443-0801
O	/	PG&E, Humboldt Bay Generating Station	(707) 269-1800
T	/	Bureau of Land Management	(707) 825-2300
T	/	Humboldt County Parks	(707) 445-7651
T	/	NOAA National Marine Fisheries Service-Arcata	(707) 822-7201
T	/	US Army Corp of Engineers, Eureka	(707) 443-0855
T	/	US Fish and Wildlife Service-Arcata Field Office	(707) 822-7201

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

Additional Site Summary Comments:

For further information about coastal access in this area, please refer to the California Coastal Commission's California Coastal Access Guide. For photos of the coastline in this area, please refer to the California Coastal Records Project (www.californiacoastline.org).

Cultural, Historical, and Archeological sites are known to exist in the area, however, the exact locations of these sites must be ascertained by contacting the Native American Heritage Commission at (916) 373-3710, the State Office of Historical Preservation (916) 445-7000, and/or the Northwest Information Center (707) 588-8455.

Concerns and Advice to Responders:

Oil that is not captured here on out going tides will threaten offshore marine birds and many miles of shoreline. Avoid anchor impacts to eelgrass beds.

Hazard and Restrictions:

Swift currents in the channels and south towards the entrance of Humboldt Bay can create hazards to navigation even when sea conditions are otherwise calm. Ship traffic near response site. Submerged hazard just north of Samoa Campground launch not visible at high tide and shallow hazards exist near breakwaters south of the Coast Guard Station.

Site Strategies:

Site Validation Level: III

Strategy: 1-305.1 Objective: Notify PG&E when oil threatens King Salmon

Strategy: Objective: Notify PG&E Humboldt Bay Generating Station when oil threatens King Salmon. Call (707) 269-1800 (24hours).

Table of Response Resources

Last Page Update

Strategy: 1-305.2 Objective: Collect oil at natural collection sites to minimize the spread of oil around the bay and to prevent oil from exiting the bay

Strategy: Collect oil at natural collection sites to minimize the spread of oil around the bay and to prevent oil from exiting the bay. Install deflection boom at USCG Cove, USCG boat station, Samoa boat launching ramp, and other sites where natural collection can be enhanced with strategic boom deployments. This booming strategy will be most effective on the ebb tide.

Note: Skimming will need to begin as soon as that equipment can be brought to these collection points, but will not be critical until oil begins to collect in skimmable amounts at the various collection points. The installation of the deflection-to-collection booms should be the primary focus of the initial response efforts that are prescribed in this strategy.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	2000 feet				<i>Strategy Updated:</i>
Anchor	Danforth	25 lb		10		<i>Last Test: 10/4/2018</i>
boat	Boom Boat or Skiff			2		
skimmer	SSS/SPS			1		
Staff	Staff to Deploy			8		

Strategy: 1-305.3 Objective: On water skimming of free floating oil

Strategy: On-water skimming of free floating oil. Use self propelled skimmers to begin oil recovery in areas where oil is still concentrated.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
skimmer	SPS			1		
Staff	Staff to Deploy			3		

Logistics:

Directions: Humboldt Bay is adjacent to Highway 101, near the cities of Arcata and Eureka. Highway 255 passes over it on the north end. This site is accessible by land by driving toward Samoa on Highway 255 and taking New Navy Base Road south to the Samoa Campground and Boat Launch. This response site extends from the cove directly north of the campground south about one mile to the jetty including the pocket beaches south of the USCG Station.

Land Access: Large trucks can access much of this area. Gated access south of USCG station is locked at sunset.

On-Water Limitations: The water near shore is shallow, but otherwise navigable. Trailered boats can be launched directly at this site at the county boat ramp. Expect swift currents in channel when launching. Submerged hazards immediately

north of the ramp and in Coast Guard Cove near breakwater.

Facilities, Staging Areas, Command Posts, Available Equipment: The Samoa Campground has restrooms and water and may be suitable for local staging.

Communications Problems: none

Additional Operational Comments: This collection strategy will be most effective to recover oil spilled within Humboldt Bay on the ebb tide. Strategy 1-305.2 was tested in October 2018 and no changes were warranted. The use of a BoomVane was evaluated here in 2014 and was found effective to hold boom in place for collection on ebb tides but required a vessel to deploy.



1-310-A Site Summary - North Humboldt Bay**1-310-A****County:** Humboldt **ACP Division/Segment:** HM - G - S03 HM - G - S23**NOAA Chart:** 18622 **Map Book:** CA Road Atlas **Decimal Degrees:** 40.80641 -124.18232**Site Description:**

The response site is in the Samoa Channel south of the Hwy 255 bridge between Redwood Dock and Indian Island. The western shoreline near Samoa and Redwood Marine Terminal is managed by the Humboldt Bay Harbor District and Indian Island by the Wiyot Tribe. The boom deployment is designed to prevent the spread of oil into the shallow waters of Arcata Bay north of Hwy 255 on the flood tide. Swift tidal currents in the bay can bring oil from the entrance of Humboldt Bay to the sensitive sites in North Bay in one or two tidal cycles. Extensive marsh complexes, wetlands, estuaries, bird habitats, aquaculture.

There are multiple subtidal aquaculture sites along the west side of the Samoa Channel and baywater intakes at Redwood Marine Terminal II and Red Tank Docks that supply upland aquaculture and other industrial users nearby. See the Humboldt Bay Shoreline Response Plan for additional information and site contact information for aquaculture.

This area on Humboldt Bay provides important habitat and is a high bird use area year-round. Waterfowl, shorebirds, gulls, pelicans, cormorants, wading birds, and raptors are all at least occasionally present, with seasonal variations in migratory species, but with high numbers present in the area on any average day. Raptors include bald eagle (SE), northern harrier, osprey and peregrine falcon. Brant (SSC) present Nov-Apr. Other waterfowl and waterbirds include common loon (SSC), redhead (SSC), herons and egrets, yellow rail (SSC). Harbor seals are the only marine mammals typically found at this site but there are river otters and California sea lions nearby in the bay. Anadromous salmonids include coho (FT, ST) and chinook (FT) salmon, steelhead (FT) and coastal cutthroat (SSC) trouts: spawning runs (08-06); juveniles/smolt (02-08). Green sturgeon (FT,SSC), groundfish (EFH), longfin smelt (ST), eulachon (FT) and Dungeness crab. Extensive eelgrass beds. Oyster aquaculture: North Humboldt Bay is home to large commercially successful oyster seed production and smaller grow out operation. Care should be taken to minimize impacts to these resources. Sensitive plants nearby include coastal marsh milk-vetch, dark-eyed gilia, Humboldt Bay owl's-clover, perennial goldfields, round-headed Chinese-houses (all CNPS 1B.2); western bumblebee.

Resources at Risk:

- ESI and Habitat:* 9A Sheltered tidal flats
- 8B Sheltered solid man-made structures
- 10A Salt - and brackish-water marshes

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	marbled murrelet	FT, SE	Year-round	
Fish	green sturgeon - Southern	FT, SSC	Year-round	
Fish	longfin smelt	ST	Year-round	
Fish	tidewater goby	FE, SSC	Year-round	
Fish	Pacific lamprey	SSC	Year-round	
Fish	eulachon	FT	Year-round	
Fish	salmonids		Year-round	
Plants	Humboldt Bay owl's-clover	SSSP	Year-round	Apr-Aug

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

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C	/Coordinator	Northwest Information Center	(707) 588-8455
C	/	The Wiyot Tribe	(707) 733-5055
E	/	Humboldt County Sheriff	(707) 445-7251
O	/	Humboldt Bay Harbor District	(707) 443-0801
T	/	NOAA National Marine Fisheries Service-Arcata	(707) 822-7201
T	/	US Fish and Wildlife Service-Arcata Field Office	(707) 822-7201

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

Additional Site Summary Comments:

For further information about coastal access in this area, please refer to the California Coastal Commission's California Coastal Access Guide. For photos of the coastline in this area, please refer to the California Coastal Records Project (www.californiacoastline.org).

Cultural, Historical, and Archeological sites are known to exist in the area, however, the exact locations of these sites must be ascertained by contacting the Native American Heritage Commission at (916) 373-3710, the State Office of Historical Preservation (916) 445-7000, and/or the Northwest Information Center (707) 588-8455.

Concerns and Advice to Responders:

This strategy should be implemented ASAP; oil will rapidly move towards Arcata Bay on a flood tide from most points in Humboldt Bay north of the jetty. Oiling of north bay could be difficult to clean up and cause long term damage to important habitats. Avoid anchor impacts to eelgrass beds.

Hazard and Restrictions:

Submerged cables near the response site are noted on diagram. Access to this site is best on the water as the islands have restricted access and are off limits to response traffic. Most of the remaining shoreline consists of wide and often shallow mud flats that are soft, deep, and difficult to walk upon and unstable to work on. Swift currents in Samoa Channel will complicate conventional response. Boom with two tension cables is advised. Vessel traffic may complicate response. Redwood Dock is deteriorating and may pose safety hazards, minimize equipment and personnel on the dock.

Site Strategies:

Site Validation Level: III

Strategy: 1-310.1 Objective: On water recovery

Strategy: Use self propelled skimmers to begin oil recovery within Samoa Channel and North Humboldt Bay.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
skimmer	SPS			1		
Staff				3		

Strategy: 1-310.2 Objective: Prevent oil from entering Arcata Bay

Strategy: Prevent oil from entering Arcata Bay. Direct oil with cascaded deflection boom towards Redwood Dock for collection in front of the dock with a swift water skimmer. Use 400ft sections of boom (or less) to from the center channel to deflect oil to a floating skimmer at the Redwood Dock. Use one 600ft length to create the collection pocket in front of the dock. Connect the skimmer to a vacuum truck on shore with approximately 500ft of hose for recovery. Create the collection pocket prior to the cascades so recovery is immediate. Consider additional 400ft cascades and implement 1-330.1 deflection if needed to improve recovery.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Swamp	2000 feet				<i>Strategy Updated:</i> 12/13/2019
Anchor	Danforth	22 lb		12		<i>Last Test:</i> 10/9/2019
boat	Boom Boat or Skiff			2		
skimmer	SPS			1		
Staff				8		
Vac truck				1		
Hose		500 feet				

Logistics:

Directions: Humboldt Bay is adjacent to Highway 101 near the cities of Arcata and Eureka. Highway 255 passes over it on the north end. The response area for this site include the Samoa Channel between the town of Samoa and Indian Island, south of the Highway 255 bridge.

Land Access: Accessible from Samoa at Redwood Marine Terminal. Do not access Indian Island without permission from Wiyot Tribe.

On-Water Limitations: The channels are deep, the shoreline is mudflats. There are numerous public boat ramps around the bay. The nearest launches are directly under the east end of the Highway 255 Bridge in Eureka or the City of Eureka's launch at the marina.

Facilities, Staging Areas, Command Posts, Available Equipment: Public docks and boat launching facilities are available around the bay and the OSROs have on the water response resources pre-staged in the area.

Communications Problems: none

1-310-A Site Strategy - North Humboldt Bay

1-310-A

Additional Operational Comments: Bring a life vest and rain jacket, year round. Do not access Indian Island without permission or escort from Wiyot Tribe. A new collection strategy for 1-310.2 was successfully tested in October 2019 resulting in significant changes. A NOFI Current Buster was tested successfully nearby in 2019, consider deploying with 1-310.1 within Samoa Channel for improved recovery.



1-320-A Site Summary - Mad River Slough**1-320-A****County:** Humboldt **ACP Division/Segment:** HM - G - S05 HM - G - S06**NOAA Chart:** 18622 **Map Book:** CA Road Atlas **Decimal Degrees:** 40.87485 -124.14477**Site Description:**

Mad River Slough enters Arcata Bay at this site. Property ownership in the area includes Humboldt Bay National Wildlife Refuge, CDFW, and the shuttered Sierra Pacific Industries mill site and other private property. Extensive marsh complexes and estuary, mudflats. Extensive slough habitat beyond the Highway 255 bridge should be excluded from oiling if possible.

This area on North Humboldt Bay is a popular and important habitat for wildlife and a high bird use area year-round. Excluding oil from this site is of primary concern. Extensive salt marsh system and wetlands are vulnerable to oiling. Sensitive natural resources nearby include waterfowl, shorebirds, wading birds including herons and egrets, seabirds and waterbirds including brown pelican, grebes, gulls, loons, cormorants; brant (SSC) present nearby Nov-Apr; raptors include bald eagle (SE), northern harrier, osprey, and peregrine falcon. Marine mammals include harbor seals and river otters; muskrat and beaver have also been reported nearby; eulachon (FT), green sturgeon (FT,SSC), longfin smelt (ST), salmonids including chinook (FT) and coho salmon (FT,ST), coastal cutthroat trout (SSC) and steelhead (FT), tidewater goby (FE, SSC, Critical Habitat), Pacific herring spawn on eelgrass, Dungeness crab, groundfish (EFH), Pacific oyster aquaculture in area; eelgrass beds in slough and extensive eelgrass beds nearby in North Humboldt Bay. Sensitive vegetation near the site includes beach layia (FE,SE, CNPS 1B.1), Humboldt Bay owl's-clover, Point Reyes salty bird's-beak (both CNPS 1B.2); western bumble bee.

Resources at Risk:*ESI and Habitat:* 10A Salt - and brackish-water marshes

9A Sheltered tidal flats

8C Sheltered riprap

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Amphibians	Northern red-legged frog	SSC	Year-round	Nov-Feb
Birds	marbled murrelet	FT, SE	Year-round	
Fish	green sturgeon - Southern	FT, SSC	Year-round	
Fish	longfin smelt	ST	Year-round	
Fish	tidewater goby	FE, SSC	Year-round	
Fish	Pacific lamprey	SSC	Year-round	
Fish	eulachon	FT	Year-round	
Fish	salmonids		Year-round	

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

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C	/	The Wiyot Tribe	(707) 733-5055
E	/	Humboldt County Sheriff	(707) 445-7251
O	/	Humboldt Bay Harbor District	(707) 443-0801
T	/Agency Representative	California Department of Fish & Wildlife, Eureka	(707) 445-6493
T	/	Humboldt Bay NWR Complex	(707) 733-5406
T	/	NOAA National Marine Fisheries Service-Arcata	(707) 822-7201
T	/	US Fish and Wildlife Service-Arcata Field Office	(707) 822-7201

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

Additional Site Summary Comments:

For further information about coastal access in this area, please refer to the California Coastal Commission’s California Coastal Access Guide. For photos of the coastline in this area, please refer to the California Coastal Records Project (www.californiacoastline.org).

Cultural, Historical, and Archeological sites are known to exist in the area, however, the exact locations of these sites must be ascertained by contacting the Native American Heritage Commission at (916) 373-3710, the State Office of Historical Preservation (916) 445-7000, and/or the Northwest Information Center (707) 588-8455.

Concerns and Advice to Responders:

Oiling of slough and marsh complex could cause long term damage to important habitats. Avoid anchoring in eelgrass beds. Monitor drainage channel north of trestle bridge, protect with sorbent boom to avoid oiling channel if necessary. Shallow sloughs, extensive mudflats. Depth limitations may complicate vessel access. Deploy boom on high tide if possible. Sheriff may be able to provide access to launch boom or recover product from west side of slough from the former SPI yard. Suggest pulling out all boom necessary with skiff heading east up channel before securing anchor location on eastern shore of channel.

Hazard and Restrictions:

Shallow water at low & high tides. Extensive mudflats. Swift currents. Private property.

Site Strategies:

Site Validation Level: III

Strategy: 1-320.1 Objective: Exclusion booming to exclude the oil from the site.

Strategy: Stretch a boom from one side of the channel to the other. Workers may have to walk upon the mudflats to complete this installation. Hip waders and extreme caution is advised when walking on mudflats. Strategy will be effective on ebb tide by modifying collection location.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	1200 feet				<i>Strategy Updated: Last Test: 9/25/2013</i>
Boom	Swamp	100 feet				
Boom	Sorbent	1200 feet				
Anchor	Danforth	25 lb		4		
boat	Skiff				1	
Staff	Staff to Deploy				6	

Strategy: 1-320.2 Objective: Collect oil when a significant quantity is present.

Strategy: Collect oil from the water surface by employing a skimmer.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
skimmer	SSS				1	
Staff	Staff to Deploy				2	

Logistics:

Directions: Mad River Slough is accessible by land from Highway 255 or from shallow draft boat in the slough at the north end of Humboldt Bay.

Land Access: Vehicle access to site from Highway 255. Locked gates to access west side of slough in shuttered SPI mill.

On-Water Limitations: Shallow slough, small boat launch at site between railroad trestle and Hwy 255 bridge.

Facilities, Staging Areas, Command Posts, Available Equipment: Parking area adjacent to slough at Highway 255, no facilities.

Communications Problems: none

Additional Operational Comments: Contact Humboldt Sheriff for access to area west of slough and north of Hwy 255 restricted by locked gates.



1-324-A Site Summary - Arcata Bay Sloughs**1-324-A****County:** Humboldt **ACP Division/Segment:** HM - G - S07 HM - G - S08 HM - G - S06**NOAA Chart:** 18622 **Map Book:** CA Road Atlas **Decimal Degrees:** 40.8538 -124.0937**Site Description:**

This site includes the tidal estuaries of five small coastal streams that enter Arcata Bay (McDaniel Slough, Jolly Giant Creek at Butcher Slough, Jacoby Creek, Gannon Slough and Rocky Gulch). Ownership and management includes City of Arcata, CDFW, and Humboldt Bay National Wildlife Refuge. High public use area at Arcata Marsh with extensive trails on the waterfront, the other sites provide less public access but are adjacent to Highway 101 and the Humboldt Bay Trail. Site is shallow and most of it will be exposed mudflats at lower tides. Strong tidal movements and the shallow mudflats will make spill control very challenging in this habitat. Extensive eelgrass beds are the subject of much public interest and concern.

This area on North Humboldt Bay is a popular and important habitat for wildlife and a high bird use area year-round. Excluding oil from the stream inlets near the site is of primary concern, their salt marsh systems, estuaries and wetlands are vulnerable to oiling. Sensitive natural resources nearby include waterfowl, shorebirds, wading birds including herons and egrets, seabirds and waterbirds including brown pelican, grebes, gulls, loons, cormorants; brant (SSC) present nearby Nov-Apr; raptors include bald eagle (SE), northern harrier, osprey, and peregrine falcon. Marine mammals include harbor seals and river otters. Fisheries include eulachon (FT), green sturgeon (FT,SSC) may be present in North Bay channels (06-10); longfin smelt (ST), Pacific lamprey (SSC), anadromous salmonids including chinook (FT) and coho salmon (FT,ST), coastal cutthroat trout (SSC) and steelhead (FT): spawning runs (08-06), juveniles/smolts (02-08); tidewater goby (FE,SSC, Critical Habitat), Pacific herring spawn on eelgrass, Dungeness crab, groundfish (EFH), Pacific oyster aquaculture in area; northern red-legged frogs (SSC) in Arcata Marsh; extensive eelgrass beds nearby in North Humboldt Bay; sensitive vegetation near the site includes western lily (FE,SE, CNPS 1B.1), Humboldt Bay owl's-clover, Point Reyes salty bird's-beak (both CNPS 1B.2); western bumble bee.

Resources at Risk:

- ESI and Habitat:* 10A Salt - and brackish-water marshes
 9A Sheltered tidal flats
 8C Sheltered riprap

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Amphibians	Northern red-legged frog	SSC	Year-round	Nov-Feb
Fish	green sturgeon - Southern	FT, SSC	Year-round	
Fish	longfin smelt	ST	Year-round	
Fish	tidewater goby	FE, SSC	Year-round	
Fish	Pacific lamprey	SSC	Year-round	
Fish	eulachon	FT	Year-round	
Fish	salmonids		Year-round	
Plants	Humboldt Bay owl's-clover	SSSP	Year-round	Apr-Aug

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

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O	/	Humboldt Bay Harbor District	(707) 443-0801
T	/Agency Representative	California Department of Fish & Wildlife, Eureka	(707) 445-6493
T	/	City of Arcata	(707) 822-5951
T	/	Humboldt Bay NWR Complex	(707) 733-5406
T	/	NOAA National Marine Fisheries Service-Arcata	(707) 822-7201
T	/	US Fish and Wildlife Service-Arcata Field Office	(707) 822-7201

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

Additional Site Summary Comments:

For further information about coastal access in this area, please refer to the California Coastal Commission's California Coastal Access Guide. For photos of the coastline in this area, please refer to the California Coastal Records Project (www.californiacoastline.org).

Cultural, Historical, and Archeological sites are known to exist in the area, however, the exact locations of these sites must be ascertained by contacting the Native American Heritage Commission at (916) 373-3710, the State Office of Historical Preservation (916) 445-7000, and/or the Northwest Information Center (707) 588-8455.

Concerns and Advice to Responders:

Oiling of slough and marsh complex could cause long term damage to important habitats. Avoid anchoring in eelgrass beds.

Hazard and Restrictions:

Much of the bay is shallow with abraded channels at low tide. Extensive oyster culture near the Samoa Channel should be avoided by boat traffic. Old tidegate, exposed metal edges, and submerged rip-rap with rebar hazards at McDaniel Slough.

Site Strategies:

Site Validation Level: III

Strategy: 1-324.1 Objective: Exclude oil from entering surrounding sloughs, especially Jacoby Creek
Strategy: Exclusion boom the mouth of the creek.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	500	feet			<i>Strategy Updated: 5/24/2018</i>
Boom	Sorbent	100	feet			<i>Last Test:</i>
Stakes, Shovels, Hammers						
Staff				6		

Strategy: 1-324.2 Objective: Exclude oil from entering surrounding sloughs, especially Gannon Slough
Strategy: Exclusion boom the mouth of the slough.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	500	feet			<i>Strategy Updated: 5/24/2018</i>
Boom	Sorbent	100	feet			<i>Last Test:</i>
Stakes, Shovels, Hammers						
Staff				6		

Strategy: 1-324.3 Objective: Exclude oil from entering surrounding sloughs, especially Jolly Giant Creek at Butchers Slough.

Strategy: Exclusion boom the mouth of the slough.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	300	feet			<i>Strategy Updated: 5/24/2018</i>
Boom	Sorbent	100	feet			<i>Last Test:</i>
Stakes, Shovels, Hammers						
Staff				6		

Strategy: 1-324.4 Objective: Exclude oil from entering surrounding sloughs, especially McDaniel Slough.
Strategy: Exclusion boom the mouth of the slough.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	300	feet			<i>Strategy Updated: 5/24/2018</i>
Boom	Sorbent	50	feet			<i>Last Test: 9/24/2014</i>
Stakes, Shovels, Hammers						
Staff				6		

Strategy: 1-324.5 Objective: Exclude oil from entering surrounding sloughs, especially Rocky Gulch.

Strategy: Exclusion boom the mouth of Rocky Gulch from Bracut Industrial Park.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Swamp	300 feet				<i>Strategy Updated: 5/24/2018</i>
Boom	Sorbent	100 feet				<i>Last Test: 10/17/2017</i>
T-Posts						
Staff				4		

Logistics:

Directions: Arcata Bay is at the northern end of Humboldt Bay adjacent to Highway 101 between the cities of Arcata and Eureka. Highway 255 passes over it on the south end of Arcata Bay. Jacoby Creek and Gannon sloughs can be accessed from Highway 101 between Bayside Cutoff and South G Streets. Butcher Slough and McDaniel sloughs can be accessed from the Arcata Marsh at the south end of I Street in Arcata. Butcher Slough can also be accessed from South G Street. Rocky Gulch can be accessed from Bracut Industrial Park along Highway 101.

Land Access: Vehicles can drive near sloughs, foot or shallow draft vessels required for deployment.

On-Water Limitations: Shallow mudflats, small launch at Arcata Marsh, and hand launch at Rocky Gulch

Facilities, Staging Areas, Command Posts, Available Equipment: Parking areas at Arcata Marsh may be appropriate.

Communications Problems: none

Additional Operational Comments: Shallow sloughs, extensive mudflats. Depth limitations may complicate vessel access and boom deployment (minimum 3' tide needed). Contact City of Arcata to facilitate access.



Imagery: NAIP 2012 (Summer) 4-Band

1-326-A Site Summary - Eureka Slough**1-326-A****County:** Humboldt **ACP Division/Segment:** HM - G - S10**NOAA Chart:** 18622**Map Book:** CA Road Atlas**Decimal Degrees:** 40.8103 -124.1465**Site Description:**

Eureka Slough is a large tidal slough on the northern end of the city of Eureka accessible behind the Target store. The response site is northwest of the Highway 101 bridge and extends to the mouth of the slough in the channel east of Daby Island. The slough is tidally influenced for miles upstream of the Highway 101 bridge. Any response should try and exclude oil from moving in with the tides beyond the bridge. Land ownership and management includes Humboldt Bay National Wildlife Refuge, California Department of Fish and Wildlife, and City of Eureka. The water is shallow in much of the slough and large percentages of the total volume are exchanged on average tide cycles. High public use area with Eureka's Waterfront Trail transiting the south edge of the slough.

This area on Humboldt Bay is a popular and important habitat for wildlife and a high bird use area year-round. Excluding oil from Eureka Slough on the flood tide is of primary concern. Extensive salt marsh system upstream and wetlands are vulnerable to oiling. Sensitive natural resources nearby include waterfowl, shorebirds, wading birds including herons and egrets, seabirds and waterbirds including brown pelican, grebes, gulls, loons, cormorants; bank swallow (ST), brant (SSC) present nearby Nov-Apr; raptors include bald eagle (SE), northern harrier, osprey, and peregrine falcon; yellow rail (SSC). Marine mammals include harbor seals and river otters; fish include eulachon (FT), green sturgeon (FT,SSC), longfin smelt (ST), western and Pacific lamprey (both SSC); anadromous salmonids including chinook (FT) and coho salmon (FT,ST), coastal cutthroat trout (SSC) and steelhead (FT): spawning runs (08-06), juveniles/smolts (02-08); tidewater goby (FE, SSC, Critical Habitat), Pacific herring spawn on eelgrass, Dungeness crab, groundfish (EFH), Pacific oyster aquaculture in area; eelgrass beds in slough and extensive eelgrass beds nearby in North Humboldt Bay; sensitive vegetation nearby includes Humboldt Bay owl's-clover, perennial goldfields, Point Reyes salty bird's-beak, round-headed Chinese-houses (all CNPS 1B.2); western bumble bee.

Resources at Risk:*ESI and Habitat:* 10A Salt - and brackish-water marshes

9A Sheltered tidal flats

9B Vegetated low banks

8C Sheltered riprap

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	marbled murrelet	FT, SE	Year-round	
Fish	green sturgeon - Southern	FT, SSC	Year-round	
Fish	salmonids		Year-round	Aug-Jun
Fish	longfin smelt	ST	Year-round	
Fish	tidewater goby	FE, SSC	Year-round	
Fish	Pacific lamprey	SSC	Year-round	
Fish	Western brook lamprey	SSC	Year-round	
Fish	eulachon	FT	Year-round	

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
C	/	The Wiyot Tribe	(707) 733-5055
E	/	City of Eureka	(707) 441-4203
E	/	Eureka Police Department	(707) 441-4044
E	/	Target Store	(707) 442-0201
O	/	Humboldt Bay Harbor District	(707) 443-0801
T	/Agency Representative	California Department of Fish & Wildlife, Eureka	(707) 445-6493
T	/	Humboldt Bay NWR Complex	(707) 733-5406
T	/	NOAA National Marine Fisheries Service-Arcata	(707) 822-7201
T	/	US Fish and Wildlife Service-Arcata Field Office	(707) 822-7201

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

Additional Site Summary Comments:

For further information about coastal access in this area, please refer to the California Coastal Commission's California Coastal Access Guide. For photos of the coastline in this area, please refer to the California Coastal Records Project (www.californiacoastline.org).

Cultural, Historical, and Archeological sites are known to exist in the area, however, the exact locations of these sites must be ascertained by contacting the Native American Heritage Commission at (916) 373-3710, the State Office of Historical Preservation (916) 445-7000, and/or the Northwest Information Center (707) 588-8455.

Concerns and Advice to Responders:

Extensive marsh habitat upstream of the mouth of the slough and Highway 101 bridge makes this site a prime target for exclusion booming. Oiling of slough and marsh complex could cause long term damage to important habitats. Avoid anchoring in eelgrass beds.

Hazard and Restrictions:

Homeless encampments in area. Shallow water at low tide, swift currents, extensive mudflats. Depth limitations may complicate vessel access. Railway trestle can be hazardous.

Site Strategies:

Site Validation Level: III

Strategy: 1-326.1 Objective: Exclude oil from the slough.

Strategy: Exclusion boom the mouth of the slough. The boom can be deployed either to exclude oil from entering or in a manner that diverts oil (see 1-326.2) to the shore behind the Target store where it can be collected with a skimmer. The response area behind the Target store is accessible and large enough to allow vacuum trucks to work there. Extensive tidal flats at lower tides will make boom deployment difficult at this site.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	1000 feet				<i>Strategy Updated: Last Test: 9/29/2015</i>
Boom	Swamp	200 feet				
Boom	Sorbent	100 feet				
boat	Boom Boat					
Staff	Staff to Deploy			6		

Strategy: 1-326.2 Objective: Collect oil

Strategy: Collect oil using a skimmer. The oil should be diverted from out of the channel and toward the small launch ramp behind the Target Store using boom to deflect oil to the collection location on the flood tide. This site is accessible with a vacuum truck, if needed. Boom can be hand launched here.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Swamp	1000 feet				<i>Strategy Updated: Last Test: 9/29/2015</i>
Boom	Sorbent	100 feet				
skimmer	sss			1		
collection and containment package				1		
Staff	Staff to Deploy			6		

Logistics:

Directions: Eureka Slough is 1/4 mi NE from the boat launch below the Hwy 255 Bridge on Waterfront drive. The Target store is at Hwy 101 and Y Street with a small skiff launch behind the store near the Hwy 101 bridge that can be used for site access and boom deployment.

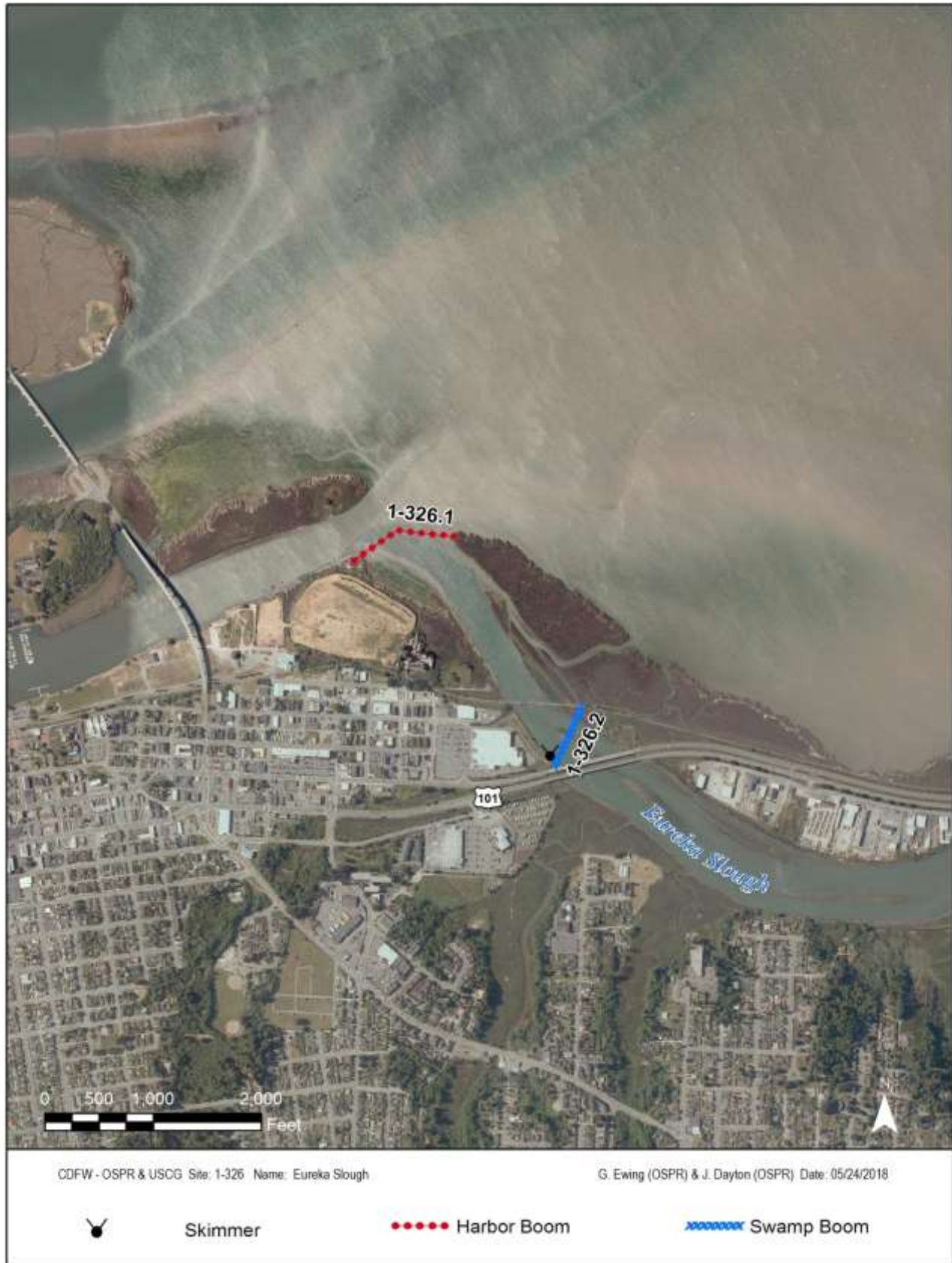
Land Access: Easy drive up access behind the Target store for large trucks.

On-Water Limitations: Water depths are shallow over most of this response area. Boat launching for eastern response efforts can be made below the Hwy 255 bridge. Skiffs can also be hand launched behind the Target store.

Facilities, Staging Areas, Command Posts, Available Equipment: The Target parking lot behind the store is large enough for staging local response equipment only.

Communications Problems: None

Additional Operational Comments: Contact the Target store manager when using this site for response purposes.



1-328-A Site Summary - Woodley Island**1-328-A****County:** Humboldt **ACP Division/Segment:** HM - G - S24**NOAA Chart:** 18622**Map Book:** CA Road Atlas**Decimal Degrees:** 40.80918 -124.15967**Site Description:**

Woodley Island is managed by the Humboldt Bay Harbor, Recreation, and Conservation District and features a large and busy public marina. The response site is designed to stop oil on an incoming tide from moving further up the Eureka channel towards Arcata Bay on a flood tide and strand oil on Woodley Island for collection. It may also be appropriate on the ebb tide to strand floating oil as it comes back down either channel from Arcata Bay. The response area is the two bifurcating channels at the southwest tip of Woodley Island. Oil should be stranded on the shore as near to this the tip of Woodley Island as is feasible under prevailing response conditions. The stranding site is near the Fishermen's Memorial Statue at the southwestern tip of the Island. Oil from the middle channel should be diverted to the west side of the island into the natural collection cove there. Extensive marsh complexes exist further north in Arcata Bay and may be better protected by intercepting oil here, if possible.

This is a popular habitat for wildlife and a high bird use area year-round. Excluding oil from this site is of primary concern. Extensive marsh system and wetlands are vulnerable to oiling. Natural resources nearby include waterfowl, shorebirds, wading birds including herons and egrets, seabirds and waterbirds including brown pelican, grebes, gulls, loons, cormorants; yellow rail (SSC); bank swallow (ST); brant present Nov-Apr; raptors include bald eagle (SE), northern harrier, osprey and peregrine falcon. Marine mammals including California sea lions, harbor seals and river otters; fisheries nearby include eulachon (FT), green sturgeon (FT,SSC), longfin smelt (ST), groundfish (EFH), Pacific and western brook lamprey (both SSC), salmonids including chinook (FT) and coho salmon (FT,ST), coastal cutthroat trout (SSC) and steelhead (FT), tidewater goby (FE, SSC, Critical Habitat), Pacific herring spawn on eelgrass, Dungeness crab, oyster aquaculture in area, extensive eelgrass beds. Sensitive vegetation including Humboldt Bay owls-clover, perennial goldfields, Point Reyes salty bird's-beak, round-headed Chinese-houses (all CNPS 1B.2); western bumble bee.

Resources at Risk:*ESI and Habitat:* 10A Salt - and brackish-water marshes

9A Sheltered tidal flats

8C Sheltered riprap

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	marbled murrelet	FT, SE	Year-round	
Fish	longfin smelt	ST	Year-round	
Fish	tidewater goby	FE, SSC	Year-round	
Fish	Pacific lamprey	SSC	Year-round	
Fish	eulachon	FT	Year-round	
Fish	salmonids		Year-round	
Fish	green sturgeon - Southern	FT, SSC	Year-round	
Plants	Humboldt Bay owl's-clover	SSSP	Year-round	Apr-Aug
Plants	Pt. Reyes bird's-beak	SSSP	Year-round	Jun-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
C	/	The Wiyot Tribe	(707) 733-5055
E	/	City of Eureka	(707) 441-4203
O	/	Humboldt Bay Harbor District	(707) 443-0801
T	/24hr	City of Eureka Public Marina	(707) 499-9755
T	/	NOAA National Marine Fisheries Service-Arcata	(707) 822-7201
T	/	US Fish and Wildlife Service-Arcata Field Office	(707) 822-7201

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

Additional Site Summary Comments:

For further information about coastal access in this area, please refer to the California Coastal Commission's California Coastal Access Guide. For photos of the coastline in this area, please refer to the California Coastal Records Project (www.californiacoastline.org).

Cultural, Historical, and Archeological sites are known to exist in the area, however, the exact locations of these sites must be ascertained by contacting the Native American Heritage Commission at (916) 373-3710, the State Office of Historical Preservation (916) 445-7000, and/or the Northwest Information Center (707) 588-8455.

Concerns and Advice to Responders:

Oiling of marsh complex could cause long term damage to important habitats. Avoid anchoring in eelgrass beds. Be prepared to accommodate vessel traffic between both boom segments. Both strategies should be deployed concurrently with 1-310 to exclude oil and protect Arcata Bay.

Hazard and Restrictions:

There are underwater cables near this response site between Woodley and Indian Islands, see strategy diagram for location, avoid anchoring nearby. The southwest tip of Woodley Island near the Fishermen's Memorial is very shallow at high tide and exposed mudflats at moderate and lower tides. Swift currents in channels may complicate booming, reduce angles or cascade shorter sections.

Site Strategies:

Site Validation Level: III

Strategy: 1-328.1 Objective: Boom, collect and skim oil out of the environment.

Strategy: Place boom from Eureka waterfront near C Street across channel to west end of Woodley Island. Deflect oil from out of the Eureka Channel toward a skimmer at Woodley Island for collection on the flood tide. Channel marker may be used to tie-off boom. This strategy may also be possible to implement on the ebb tide with adjustment in collection location to the Eureka side near the foot of C Street. Expect vessel traffic. Vac truck on shore may be useful for product recovery.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	1200 feet				<i>Strategy Updated: Last Test: 3/26/2013</i>
Anchor	Danforth	25 lb		4		
boat	Boom Boat				1	
skimmer	SPS				1	
Stakes, Shovels, Hammers						
Staff	Staff to Deploy				3	

Strategy: 1-328.2 Objective: Boom, collect and skim oil out of the environment

Strategy: Place boom from the southeastern shore of Indian Island to a skimmer on west end of Woodley Island on flood tide. Cascade boom in 400-500 foot sections due to swift currents. Strategy may be possible on ebb tide with adjustment of boom location and angle, re-orient the boom to maintain a similar collection location. Expect vessel traffic. Vac truck on island may be useful for product recovery.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	1200 feet				
Anchor	Danforth	25 lb		4		
boat	Boom Boat				1	
skimmer	SPS				1	
Staff	Staff to Deploy				5	

Logistics:

Directions: Take Highway 255 west from Eureka and exit at Woodley Island. Access Eureka waterfront from Waterfront Drive.

Land Access: Vehicle access to Eureka waterfront and Woodley Island.

On-Water Limitations: Boat launches at Eureka Marina and below Hwy 255 bridge both accessible on Waterfront Drive. Shallow mudflats outside of channels.

Facilities, Staging Areas, Command Posts, Available Equipment: Eureka boat launch parking lots or Woodley Island parking lot may be suitable for local staging.

Communications Problems: none

Additional Operational Comments: This site should be a priority for implementation with a strong westerly wind pushing product out of Samoa Channel toward Eureka.



County: Humboldt ACP Division/Segment: HM - G - S23

NOAA Chart: 18622 Map Book: CA Road Atlas Decimal Degrees: 40.81571 -124.16812

Site Description:

Tuluwat Island is adjacent to Woodley Island in North Humboldt Bay. Ownership and management includes the Wiyot Tribe, City of Eureka and a handfull of private residences. The site is a low elevation island that has large wetlands that can be submerged at higher tides. The protection strategies here and nearby are designed to exclude oil from the interior wetlands by diversion and exclusionary booming. Extensive marsh system and wetlands are vulnerable to oiling. This is the largest island in Humboldt Bay, it is a sacred site for the Wiyot Tribe. The site has significant cultural and historical value that must also be protected. Strong tidal currents in the Samoa Channel transport most of the water in and out of Arcata Bay.

There are multiple subtidal aquaculture sites along the west side of the Samoa Channel and baywater intakes at Redwood Marine Terminal II and Red Tank Docks that supply upland aquaculture and other industrial users nearby. See the Humboldt Bay Shoreline Response Plan for additional information and site contact information for aquaculture.

This is popular and important habitat for wildlife and a high bird use area year-round. Excluding oil from this site is of primary concern. Extensive salt marsh system and wetlands are vulnerable to oiling. Natural resources nearby include waterfowl, shorebirds, large bird rookery including herons and egrets; seabirds and waterbirds including brown pelican, cormorants, grebes, gulls, loons; yellow rail (SSC); bank swallow (ST); brant present Nov-Apr; raptors include bald eagle (SE), northern harrier, osprey and peregrine falcon. Marine mammals including California sea lions, harbor seals and river otters; fisheries nearby include eulachon (FT), green sturgeon (FT,SSC), longfin smelt (ST), groundfish (EFH), Pacific lamprey (SSC), salmonids including chinook (FT) and coho salmon (FT,ST), coastal cutthroat trout (SSC) and steelhead (FT), tidewater goby (FE, SSC, Critical Habitat), Pacific herring spawn on eelgrass, Dungeness crab, oyster aquaculture in area, extensive eelgrass beds. Sensitive vegetation nearby including Humboldt Bay owls-clover, dark-eyed gilia, perennial goldfields, Point Reyes salty bird's-beak, round-headed Chinese-houses (all CNPS 1B.2); western bumble bee.

Resources at Risk:

ESI and Habitat: 9A Sheltered tidal flats
10A Salt - and brackish-water marshes

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	marbled murrelet	FT, SE	Year-round	
Fish	green sturgeon - Southern	FT, SSC	Year-round	
Fish	longfin smelt	ST	Year-round	
Fish	tidewater goby	FE, SSC	Year-round	
Fish	Pacific lamprey	SSC	Year-round	
Fish	eulachon	FT	Year-round	
Fish	salmonids		Year-round	
Plants	Humboldt Bay owl's-clover	SSSP	Year-round	Apr-Aug

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

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C	/	The Wiyot Tribe	(707) 733-5055
E	/	City of Eureka	(707) 441-4203
O	/	Humboldt Bay Harbor District	(707) 443-0801
T	/	NOAA National Marine Fisheries Service-Arcata	(707) 822-7201
T	/	US Fish and Wildlife Service-Arcata Field Office	(707) 822-7201

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

Additional Site Summary Comments:

For further information about coastal access in this area, please refer to the California Coastal Commission’s California Coastal Access Guide. For photos of the coastline in this area, please refer to the California Coastal Records Project (www.californiacoastline.org).

Cultural, Historical, and Archeological sites are known to exist in the area, however, the exact locations of these sites must be ascertained by contacting the Native American Heritage Commission at (916) 373-3710, the State Office of Historical Preservation (916) 445-7000, and/or the Northwest Information Center (707) 588-8455.

Concerns and Advice to Responders:

Oiling of sloughs and marsh complex could cause long term damage to important habitats. Avoid anchoring in eelgrass beds.

Hazard and Restrictions:

Be aware and avoid submerged cables identified on diagram. This is a sacred site, do not enter without permission and supervision of the Wiyot Tribe. Shallow water at low tide, swift currents, extensive mudflats.

Site Strategies:

Site Validation Level: II

Strategy: 1-330.1 Objective: Stop oil from entering the island's wetlands after a skimmer and boom have been placed in the North Bay at site 1-310

Strategy: Add a short leg of boom from the west shore (anchor point) of the island to deflect oil away from Tuluwat Island into the channel and towards strategy 1-310 for collection on the west side of the Samoa Channel at Redwood Dock. Consider adding additional 400-ft cascades of swamp boom if necessary to improve deflection toward 1-310 collection site across the channel.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Swamp	500 feet				
boat	Boom Boat			1		
Staff	Staff to Deploy			2		
Anchor	Danforth	25 lb		2		

Logistics:

Directions: Tuluwat Island is only accessible by boat from Eureka or Woodley Island. Do not walk on the island.

Land Access: No land access

On-Water Limitations: The island is accessible by boat, and depth is variable. There are private docks on the east side,

Facilities, Staging Areas, Command Posts, Available Equipment: none

Communications Problems: none

Additional Operational Comments: Shallow sloughs, extensive mudflats. Depth limitations may complicate vessel access.



CDFW-OSPR & USCG Site: 1-310, 1-328, & 1-330 Name: North Humboldt Bay

G. Ewing (OSPR) & J. Dayton (OSPR) Date: 4/17/2020

●●●●●●●● Harbor Boom

XXXXXXXXXXXXXXXXXXXX Swamp Boom

— Underwater Cables

● Channel Marker

1-340-A Site Summary - Palco Marsh**1-340-A****County:** Humboldt **ACP Division/Segment:** HM - G - S12**NOAA Chart:** 18622**Map Book:** CA Road Atlas**Decimal Degrees:** 40.7909 -124.1833**Site Description:**

Palco Marsh is a wetland mitigation site behind and adjacent to the Bayshore Mall and west of Highway 101 in Eureka. The City of Eureka is the land manager with the Waterfront Trail crossing the west edge of the marsh making this a high public use area daily. The site includes freshwater wetlands and salt marsh that is hydrokinetically connected to Humboldt Bay providing tidal influence through a water control structure under the trail. The flows into the marsh are muted by the connecting culvert system. Adjoining the marsh and located on the bay are eelgrass beds and sheltered tidal flats.

There are multiple subtidal aquaculture sites along the west side of the Samoa Channel and baywater intakes at Redwood Marine Terminal II and Red Tank Docks that supply upland aquaculture and other industrial users nearby. See the Humboldt Bay Shoreline Response Plan for additional information and site contact information for aquaculture.

Palco Marsh provides important coastal wetland habitat for wildlife in Eureka and adjacent to Humboldt Bay and is a high bird use area year-round. Excluding oil from this site is of primary concern. Extensive salt marsh system and wetlands are vulnerable to oiling. Natural resources nearby include waterfowl, shorebirds, seabirds and waterbirds including brown pelican, cormorants, grebes, gulls, herons and egrets, loons; bank swallow (ST); brant present Nov-Apr; raptors nearby include bald eagle (SE), northern harrier, osprey and peregrine falcon. Marine mammals including harbor seals and river otters nearby; fisheries nearby include eulachon (FT), green sturgeon (FT,SSC), longfin smelt (ST), groundfish (EFH), Pacific lamprey (SSC), salmonids including chinook (FT) and coho salmon (FT,ST), coastal cutthroat trout (SSC) and steelhead (FT), tidewater goby (FE, SSC, Critical Habitat), Pacific herring spawn on eelgrass, Dungeness crab; extensive eelgrass beds nearby. Sensitive vegetation nearby including Humboldt Bay owls-clover, Pacific gilia, Point Reyes salty bird's-beak, and Siskiyou checkerbloom (all CNPS 1B.2).

Resources at Risk:*ESI and Habitat:* 10A Salt - and brackish-water marshes

9A Sheltered tidal flats

5 Mixed sand and gravel beaches

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Fish	salmonids		Year-round	
Fish	green sturgeon - Southern	FT, SSC	Year-round	
Fish	longfin smelt	ST	Year-round	
Fish	tidewater goby	FE, SSC	Year-round	
Fish	eulachon	FT	Year-round	
Fish	Pacific lamprey	SSC	Year-round	
Plants	Pt. Reyes bird's-beak	SSSP	Year-round	Jun-Oct
Plants	Humboldt Bay owl's-clover	SSSP	Year-round	Apr-Aug

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

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Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
C	/	The Wiyot Tribe	(707) 733-5055
E	/	City of Eureka	(707) 441-4203
E	/	Eureka Police Department	(707) 441-4044
O	/Terminal Manager	Chevron Marine Terminal	(707) 444-7850
O	/	Humboldt Bay Harbor District	(707) 443-0801
T	/	NOAA National Marine Fisheries Service-Arcata	(707) 822-7201
T	/	US Fish and Wildlife Service-Arcata Field Office	(707) 822-7201

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

Additional Site Summary Comments:

For further information about coastal access in this area, please refer to the California Coastal Commission's California Coastal Access Guide. For photos of the coastline in this area, please refer to the California Coastal Records Project (www.californiacoastline.org).

Cultural, Historical, and Archeological sites are known to exist in the area, however, the exact locations of these sites must be ascertained by contacting the Native American Heritage Commission at (916) 373-3710, the State Office of Historical Preservation (916) 445-7000, and/or the Northwest Information Center (707) 588-8455.

Concerns and Advice to Responders:

Oiling of sloughs and marsh complex could cause long term damage to important habitats.

Hazard and Restrictions:

Be aware of homeless encampments in the marsh.

Site Strategies:**Site Validation Level: III**

Strategy: 1-340.1 Objective: Prevent oil from entering the marsh

Strategy: Deploy exclusion boom from south of the tidegate structure to the north and across the channel to protect tidegate, channel and marsh. Add sorbent boom near tidegate as appropriate.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Swamp			300	feet	<i>Strategy Updated: 5/29/2018</i>
Boom	Sorbent			40	feet	<i>Last Test: 3/14/2017</i>
Anchor	Danforth	25 lbs		1		
T-Posts						
Staff				3		

Logistics:

Directions: From Highway 101 in Eureka (South Broadway St), take Del Norte Street west to the Eureka Waterfront Trail, the marsh is visible here with the water control structure 1/4 mile south. Gated access to the trail also available from the foot of Vigo Street or Bayshore Way behind the mall.

Land Access: Vehicle access possible from Waterfront Trail; locked gates can be opened by the City of Eureka to facilitate access.

On-Water Limitations: No access by water. Too shallow

Facilities, Staging Areas, Command Posts, Available Equipment: OSROs have staging at their facilities in Eureka. Small parking areas and restrooms at trailhead.

Communications Problems: none

Additional Operational Comments: Contact City of Eureka for access and assistance if a response here is necessary.



County: Humboldt ACP Division/Segment: HM - G - S12 HM - G - S13

NOAA Chart: 18622 Map Book: CA Road Atlas Decimal Degrees: 40.7714 -124.1973

Site Description:

This site extends from the mouth of the Elk River on Humboldt Bay and includes the tidal marsh complex upstream. This site is within the City of Eureka and is also known as the Elk River Wildlife Sanctuary managed by the city. High public use area daily as Eureka's Hikshari' Trail lies adjacent to the estuary. Tidal influence extends well upstream of the Highway 101 bridge. The inlet consists of sheltered tidal flats with eelgrass beds. Elk River spit AKA Stinky Beach is fine- to medium-grained sand.

There are multiple subtidal aquaculture sites along the west side of the Samoa Channel and baywater intakes at Redwood Marine Terminal II and Red Tank Docks that supply upland aquaculture and other industrial users nearby. See the Humboldt Bay Shoreline Response Plan for additional information and site contact information for aquaculture.

The Elk River estuary has extensive wetlands and saltmarsh habitats that would be difficult to clean-up if oiled. High bird use area year-round. Excluding oil from the estuary on the flood tide is of primary concern. Extensive salt marsh system upstream and wetlands are vulnerable to oiling. Sensitive natural resources nearby include waterfowl, shorebirds, wading birds including herons and egrets, seabirds and waterbirds including brown pelican, grebes, gulls, kingfishers, loons, cormorants; brant (SSC) present nearby Nov-Apr; raptors include bald eagle (SE), northern harrier, osprey, and peregrine falcon. Marine mammals include harbor seals and river otters; fish include eulachon (FT), green sturgeon (FT,SSC), longfin smelt (ST), Pacific lamprey (SSC); anadromous salmonids including chinook (FT) and coho salmon (FT,ST), coastal cutthroat trout (SSC) and steelhead (FT): spawning runs (08-06), juveniles/smolts (02-08); tidewater goby (FE, SSC, Critical Habitat), Pacific herring spawn on eelgrass, Dungeness crab, groundfish (EFH), larval and juvenile flatfishes and herring utilize this area and other non-commercial fish species utilize the eelgrass beds nearby; there are smaller eelgrass beds in slough and extensive eelgrass beds nearby in Humboldt Bay; sensitive vegetation nearby includes beach layia and Menzies' wallflower (both FE,SE, CNPS 1B.1), dark-eyed and Pacific gilia, Humboldt Bay owl's-clover, Point Reyes salty bird's-beak, short-leaved evax, and Siskiyou checkerbloom (all CNPS 1B.2).

Resources at Risk:

- ESI and Habitat: 10A Salt - and brackish-water marshes
 - 9A Sheltered tidal flats
 - 8C Sheltered riprap
 - 8B Sheltered solid man-made structures

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Fish	longfin smelt	ST	Year-round	
Fish	tidewater goby	FE, SSC	Year-round	
Fish	Pacific lamprey	SSC	Year-round	
Fish	green sturgeon - Southern	FT, SSC	Year-round	
Fish	eulachon	FT	Year-round	
Fish	salmonids		Year-round	
Plants	Menzies' wallflower	FE, SE	Year-round	Mar-Apr

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
C	/	The Wiyot Tribe	(707) 733-5055
E	/	City of Eureka	(707) 441-4203
E	/	Eureka Police Department	(707) 441-4044
O	/Terminal Manager	Chevron Marine Terminal	(707) 444-7850
O	/	Humboldt Bay Harbor District	(707) 443-0801
T	/Agency Representative	California Department of Fish & Wildlife, Eureka	(707) 445-6493
T	/	NOAA National Marine Fisheries Service-Arcata	(707) 822-7201
T	/	US Fish and Wildlife Service-Arcata Field Office	(707) 822-7201

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

Additional Site Summary Comments:

For further information about coastal access in this area, please refer to the California Coastal Commission's California Coastal Access Guide. For photos of the coastline in this area, please refer to the California Coastal Records Project (www.californiacoastline.org).

Cultural, Historical, and Archeological sites are known to exist in the area, however, the exact locations of these sites must be ascertained by contacting the Native American Heritage Commission at (916) 373-3710, the State Office of Historical Preservation (916) 445-7000, and/or the Northwest Information Center (707) 588-8455.

Concerns and Advice to Responders:

Oiling of sloughs and marsh complex could cause long term damage to important habitats. Avoid anchoring in eelgrass beds.

Hazard and Restrictions:

There is extensive shoaling in this area, and a significant number of potentially submerged pilings from an old trestle in the mouth of the river. Homeless camps in vicinity.

Site Strategies:**Site Validation Level: III**

Strategy: 1-345.1 Objective: Shut key-locked tide gates on Pound Road to prevent tidal exchange.

Strategy: Keys are available from City of Eureka Public Works Office. This strategy is only applicable if oil has already entered the river and is upstream of the mouth and/or if primary booming strategies cannot be safely deployed.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Key or Bolt Cutters				1		<i>Strategy Updated:</i> 5/30/2018
Staff				2		<i>Last Test:</i>

Strategy: 1-345.2 Objective: Boom the mouth of Elk River to exclude oil.

Strategy: Exclusion boom the river mouth and collect oil if possible.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	1400 feet				<i>Strategy Updated:</i> 5/30/2018
Boom	Sorbent	300 feet				<i>Last Test:</i> 3/18/2014
Anchor	Danforth	25 lb		5		
Boat	Skiff			1		
Staff				4		

Strategy: 1-345.3 Objective: Collect oil when enough is present to skim.

Strategy: Use a skimmer to collect oil from off the water.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Skimmer	SSS/SPS			1		<i>Strategy Updated:</i> 5/30/2018
Staff				2		<i>Last Test:</i>

Strategy: 1-345.4 Objective: Boom the mouth of Elk River to exclude oil.

Strategy: Connect harbor boom from south end of Chevron Pier to north end of Elk River sand spit. Connect swamp boom from east shore of bay near Truesdale Street to south end of Chevron Pier to complete exclusion of estuary. This would be an alternative to strategy #2 at this site and is intended to replace that strategy as the primary deployment for this site. The original strategy will remain as an alternative that could be used when or if this strategy is not feasible, or as a second layer of protection.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor			2000	feet	<i>Strategy Updated:</i> 5/30/2018
Boom	Swamp			800	feet	<i>Last Test:</i> 3/23/2016
Anchor	Danforth	25 lb		9		
Boat	Boom Boat			1		
Boat	Skiff			1		
Staff				5		

Logistics:

Directions: There is access to the river mouth from the foot of Truesdale Street off Highway 101 (South Broadway Street) just south of the Bayshore Mall. There is secondary access from Highway 101 just upstream at the foot of Hilfiker Lane. From Highway 101, turn right at the "Coastal Access" sign at Hilfiker Lane and continue west to the end.

Land Access: Accessible to all vehicle types including heavy equipment. Contact City of Eureka to facilitate access from Coastal Trail. Elk River Spit aka Stinky Beach is accessible by foot from Herrick Lane exit and Pound Road.

On-Water Limitations: The water depth is variable with submerged pilings. Access is possible from Humboldt Bay with shallow draft vessels recommended for this response location. Nearest launch on Waterfront Drive.

Facilities, Staging Areas, Command Posts, Available Equipment: There are small parking lots and restrooms near the foots of Truesdale and Hilfiker streets where local response equipment and supplies could be staged for a response at this site. Larger lots at Bayshore mall.

Communications Problems: none

Additional Operational Comments: Shallow sloughs, extensive mudflats. Depth limitations may complicate vessel access. Easier to deploy boom at higher tides (3'+). Boom can be launched from shore from Hikshari' Trail vicinity on Hilfiker Ln; contact City of Eureka for access.



Imagery: NAIP 2012 (Summer) 4-Band

1-350-A Site Summary - South Humboldt Bay**1-350-A****County:** Humboldt **ACP Division/Segment:** HM - G - S15**NOAA Chart:** 18622**Map Book:** CA Road Atlas**Decimal Degrees:** 40.70545 -124.23927**Site Description:**

This is the primary protection site to intercept and collect oil moving south on the incoming tide in Fields Landing Channel toward Hookton Channel and further into South Humboldt Bay toward sensitive habitats including Humboldt Bay National Wildlife Refuge. The response site is located south of King Salmon near the Fields Landing Boat Ramp and on private property near the Humboldt Bay Forest Products dock, north of the boat ramp. Large estuary complex with extensive marshes, eelgrass meadows, and sheltered tidal flats exposed at low tide.

This is a high bird use area year-round with extensive eelgrass meadows. South Humboldt Bay is home to the Humboldt Bay National Wildlife Refuge which provides habitat for hundreds of species and thousands of individual birds including migrating waterfowl and shorebirds. Birds are a concern throughout the year. Coastal seabirds, wading birds, waterfowl. Important for stopover for brant in winter before migration to breeding grounds; California brown pelican (04-11), marbled murrelet (FT,SE); raptors including bald eagle (SE), northern harrier, osprey, peregrine falcon (all 01-12). Marine mammals including harbor seal haulouts for molting and pupping nearby, river otters; anadromous salmonids including coastal cutthroat trout (SSC), chinook (FT) and coho (FT,ST) salmon, steelhead (FT): spawning runs (08-06), juveniles/smolts (pass through bay), larval and juvenile fish use area as rearing habitat; eulachon (FT), green sturgeon (FT,SSC); groundfish (EFH), longfin smelt (ST). Benthic invertebrates including several recreationally important clam species; Dungeness crab. Sensitive plant nearby include pink sand-verbena (CNPS 1B.1), Point Reyes salty bird's-beak (CNPS 1B.2), and western lily (FE,SE, CNPS 1B.1).

Resources at Risk:*ESI and Habitat:* 8C Sheltered riprap

10A Salt - and brackish-water marshes

8B Sheltered solid man-made structures

9A Sheltered tidal flats

5 Mixed sand and gravel beaches

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	marbled murrelet	FT, SE	Year-round	
Fish	longfin smelt	ST	Year-round	
Fish	tidewater goby	FE, SSC	Year-round	
Fish	green sturgeon - Southern	FT, SSC	Year-round	
Fish	salmonids		Year-round	
Fish	Pacific lamprey	SSC	Year-round	
Fish	eulachon	FT	Year-round	
Mammals	harbor seal	FP	Year-round	Feb-Apr
Plants	beach layia	FE, SE	Year-round	Mar-Jul
Plants	western lily	FE, SE	Year-round	Jun-Jul

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
C	/	The Wiyot Tribe	(707) 733-5055
E	/	Humboldt County Sheriff	(707) 445-7251
O	/	Humboldt Bay Harbor District	(707) 443-0801
O	/	PG&E, Humboldt Bay Generating Station	(707) 269-1800
T	/	Humboldt Bay NWR Complex	(707) 733-5406
T	/	Humboldt County Parks	(707) 445-7651
T	/	NOAA National Marine Fisheries Service-Arcata	(707) 822-7201
T	/	US Fish and Wildlife Service-Arcata Field Office	(707) 822-7201

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

Additional Site Summary Comments:

For further information about coastal access in this area, please refer to the California Coastal Commission's California Coastal Access Guide. For photos of the coastline in this area, please refer to the California Coastal Records Project (www.californiacoastline.org).

Cultural, Historical, and Archeological sites are known to exist in the area, however, the exact locations of these sites must be ascertained by contacting the Native American Heritage Commission at (916) 373-3710, the State Office of Historical Preservation (916) 445-7000, and/or the Northwest Information Center (707) 588-8455.

Concerns and Advice to Responders:

Oiling of slough and marsh complexes in South Humboldt Bay could cause long term damage to important habitats including Humboldt Bay National Wildlife Refuge. Avoid anchoring in eelgrass beds.

This strategy will be most effective on flood tides to prevent oil from reaching further into South Humboldt Bay. Vessel traffic in channel may complicate response; be prepared to allow vessel passage.

Hazard and Restrictions:

Extensive mudflats, swift current in channel. Humboldt Bay Forest Products Dock is a deteriorating and may pose safety hazards to responders, exercise caution if accessing the dock. F/V Dennis Gayle is submerged near Fields Landing Channel at the Humboldt Bay Forest Products Dock and marked with a buoy. Private property.

Site Strategies:**Site Validation Level: II**

Strategy: 1-350.1 Objective: Deploy boom to strand oil on the shoreline or collect for skimming.

Strategy: Deflection boom oil to collection sites on the shoreline or skim from the water surface in South Humboldt Bay. Deploy multiple boom sets into the channel to intercept oil and improve recovery near Fields Landing Boat Launch and Humboldt Bay Forest Products dock and other areas as appropriate nearby.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
boom	Harbor	1200 feet				
Anchor	Danforth	25 lb		5		
boat	Boom			2		
skimmer	SSS			2		
Staff	Staff to Deploy			10		

Strategy: 1-350.2 Objective: On water recovery

Strategy: Begin on water recovery using either a towed boom array or with a towed barge skimmer.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	100 feet				
boat	Skiff			2		
skimmer	SBS			1		
Staff	Staff to Deploy			2		

Logistics:

Directions: Access to the shores of South Humboldt Bay are limited by extensive wetland areas and mudflats, with the exception of the developed areas around King Salmon and Fields Landing, and public access at HBNWR and the South Spit. King Salmon: go south on Hwy 101 from Eureka to King Salmon exit 700, go west on King Salmon Ave and Buhne Drive to reach the bay. Fields Landing: go south on Hwy 101 from Eureka to Fields Landing exit 699, take Railroad Avenue west to the end and Fields Landing Boat Ramp. Access to Redwood Forest Products Dock response area through locked gate near end of Railroad Ave, head north to dock and to access shoreline. To reach the west side of South Humboldt Bay: go south on Hwy 101 to Hookton Road exit 696, continue west on Hookton Road to Table Bluff Road; this road will become South Jetty Rd accessing the west side of Humboldt Bay. For HBNWR access: take exit 696 at Hookton Rd and follow signs.

Land Access: Vehicle access to King Salmon, Fields Landing, Humboldt Bay National Wildlife Refuge and South Spit. Foot access to Southport Landing from foot of Phelan Rd. Humboldt Bay Forest Products is private property, secure permission before access.

On-Water Limitations: A launch ramp at the end of Railroad Ave and travelift at the end of Depot Drive are available in Fields Landing. Depth limitations may complicate vessel access at lower tides.

Facilities, Staging Areas, Command Posts, Available Equipment: Large parking lot at Fields Landing Boat Ramp may be appropriate for local staging.

Communications Problems: Cell coverage can be spotty near Fields Landing.



1-352-A Site Summary - White Slough & Salmon Creek**1-352-A****County:** Humboldt**ACP Division/Segment:** HM - G - S16 HM - G - S17 HM - G - S18 HM - G - S25**NOAA Chart:** 18622**Map Book:** CA Road Atlas**Decimal Degrees:** 40.68474 -124.22364**Site Description:**

This site includes the tidal estuaries of White Slough and Salmon Creek where they enter Hookton Channel and South Humboldt Bay. The site is within Humboldt Bay National Wildlife Refuge and features large habitat restoration areas and a diversity of wildlife and fish habitats that should be protected. Large estuary complex with a mix of riparian habitats, extensive salt, brackish and freshwater marshes, eelgrass meadows, sheltered tidal flats, and exposed mudflats at low tide.

This is a high bird use area year-round. Extensive marsh and salmonid habitat lie upstream of this area. The estuary has extensive wetlands and coastal saltmarsh that would be difficult to clean-up if oil enters that environment. Wading birds, abundant resident and migratory shorebirds and waterfowl (01-12; 10-04); brant (10-06), double-crested cormorant nesting colony on Teal Island (03-08), kingfishers, heron and egret rookeries nearby, raptors including bald eagle (SE), northern harrier, osprey and peregrine falcon (01-12). Harbor seals, river otters. Anadromous salmonids include coho (FT,ST) and chinook (ST) salmon, steelhead (ST) and coastal cutthroat trout (SSC): spawning runs (08-06), juveniles/smolts (02-08); tidewater goby (FE,SSC, Critical Habitat); longfin smelt (ST); Pacific herring spawn on eelgrass (11-03); Pacific lamprey (SSC); green sturgeon (FT,SSC); groundfish (EFH); Dungeness crab; foothill yellow-legged (SE,SSC) and northern red-legged (SSC) frogs in marsh. Extensive eelgrass beds. Sensitive plants nearby include Humboldt Bay owl's clover, Point Reyes salty bird's-beak, coast and Siskiyou checkerbloom (all CNPS 1B.2), western lily (FE,SE, CNPS 1B.1); western bumblebee.

Resources at Risk:*ESI and Habitat:* 9A Sheltered tidal flats

10A Salt - and brackish-water marshes

8C Sheltered riprap

9B Vegetated low banks

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Amphibians	foothill yellow-legged frog	SE, SSC	Year-round	Apr-Jul
Birds	marbled murrelet	FT, SE	Year-round	
Fish	green sturgeon - Southern	FT, SSC	Year-round	
Fish	tidewater goby	FE, SSC	Year-round	
Fish	salmonids		Year-round	
Fish	Pacific lamprey	SSC	Year-round	
Plants	beach layia	FE, SE	Year-round	Mar-Jul
Plants	Menzies' wallflower	FE, SE	Year-round	Mar-Apr

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
C	/	The Wiyot Tribe	(707) 733-5055
O	/	Humboldt Bay Harbor District	(707) 443-0801
T	/	Humboldt Bay NWR Complex	(707) 733-5406
T	/	NOAA National Marine Fisheries Service-Arcata	(707) 822-7201
T	/	US Fish and Wildlife Service-Arcata Field Office	(707) 822-7201

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

Additional Site Summary Comments:

For further information about coastal access in this area, please refer to the California Coastal Commission’s California Coastal Access Guide. For photos of the coastline in this area, please refer to the California Coastal Records Project (www.californiacoastline.org).

Cultural, Historical, and Archeological sites are known to exist in the area, however, the exact locations of these sites must be ascertained by contacting the Native American Heritage Commission at (916) 373-3710, the State Office of Historical Preservation (916) 445-7000, and/or the Northwest Information Center (707) 588-8455.

Concerns and Advice to Responders:

Oiling of slough and marsh complexes in South Humboldt Bay could cause long term damage to important habitats including Humboldt Bay National Wildlife Refuge. Avoid anchoring in eelgrass beds. Contact HBNWR for assistance prior to initiating any response here. Response may be challenging in low tide conditions due to exposed mudflats, recommend boom to be deployed at higher tides. Several large water control structures on HBNWR may warrant additional protective boom to protect marsh habitats upstream, contact HBNWR staff for guidance. Consider additional boom near water control structures and tidal sloughs for additional site protection if warranted. Extensive mudflats may complicate vessel access at low tide.

Hazard and Restrictions:

The soft mud can be challenging to boom deployment workers.

Site Strategies:

Site Validation Level: III

Strategy: 1-352.1 Objective: Prevent oil from entering the slough

Strategy: Use 600’ of hard boom, deliverable to site at Hookton Slough small boat launch off Hookton Road. Small, shallow draft vessel can be launched here to deploy boom to site.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	600 feet				<i>Strategy Updated:</i>
boat	Skiff			1		<i>Last Test: 2/16/2010</i>
anchor stakes				4		
Staff	Staff to Deploy			6		

Logistics:

Directions: This site can be reached by driving south from Eureka on Hwy 101, take Hookton Road exit 696, follow signs to HBNWR to access east side levees. To access the Hookton Slough and trailhead, drive west on Hookton Road for 1.2mi; the parking area is on the north side of Hookton Road.

Land Access: Vehicle access to levees on both sides of Salmon Creek, contact HBNWR to facilitate locked gate access.

On-Water Limitations: Extensive mudflats may complicate vessel access, small vessel launch possible off Hookton Road. Large vessel launches available nearby in Fields Landing.

Facilities, Staging Areas, Command Posts, Available Equipment: Small parking lot at boat launch may provide local staging needs.

Communications Problems:

Additional Operational Comments: Locked gates to access levees, contact HBNWR.



1-360-A Site Summary - South Spit**1-360-A****County:** Humboldt **ACP Division/Segment:** HM - G - S19 HM - G - S20 HM - G - S21 HM - G - S22
HM - H - S01**NOAA Chart:** 18622**Map Book:** CA Road Atlas**Decimal Degrees:** 40.71655 -124.26087**Site Description:**

This site includes the 4.5 mile long sand spit running from the the base of Table Bluff at the south end of Humboldt Bay to the south jetty and the entrance to Humboldt Bay. Land management includes the Mike Thompson Wildlife Area managed by BLM along the sandy spit, the USFWS Humboldt Bay National Wildlife Refuge's shoreline on the bay side, and Table Bluff County Park at the south end of the spit. Access to the north end of CDFW's Eel River Wildlife Area is also possible here. Site is associated with the following State Marine Protected Area: South Humboldt Bay SMRMA. Fine- to medium-grain sand beach on the ocean side backed by vegetated dunes. Exposed and sheltered tidal flats, mudflats and wetlands on interior bay side of spit, rip-rap along the jetty.

This is a high bird use area year-round. The bay side of the spit has extensive wetlands and saltmarsh that would be difficult to clean-up if oil enters that environment. Nesting and wintering western snowy plover on beach side, extensive waterfowl and shorebird habitat on bay side. Waterfowl, shorebirds, waterbirds, wading birds (01-12), large numbers of brant (10-04); California brown pelican (04-11), western snowy plover (FT,FWS Critical Habitat)(01-12), nesting period (03-08) and nests directly on sand within dunes. Harbor seals in bay; eulachon (FT), green sturgeon (FT,SSC), longfin smelt (ST), salmonids including coho (FT,ST) and chinook (FT) salmon, steelhead (FT), and coastal cutthroat trout (SSC): although usually not in large numbers, these salmonids often forage in the nearshore environment and can be impacted by oiling. Extensive eelgrass beds in bay; sensitive plants nearby include beach layia and Menzies' wallflower (both FE,SE, CNPS 1B.1), dark-eyed gilia, Humboldt Bay owl's clover (both CNPS 1B.2).

Resources at Risk:*ESI and Habitat:* 3A Fine- to medium-grained sand beaches

7 Exposed tidal flat

9A Sheltered tidal flats

10A Salt - and brackish-water marshes

6B Riprap

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	marbled murrelet	FT, SE	Year-round	
Birds	Western snowy plover	FT, SSC	Year-round	Mar-Sep
Fish	salmonids		Year-round	
Fish	green sturgeon - Southern	FT, SSC	Year-round	
Fish	eulachon	FT	Year-round	
Fish	longfin smelt	ST	Year-round	
Fish	Pacific lamprey	SSC	Year-round	
Plants	beach layia	FE, SE	Year-round	Mar-Jul
Plants	Menzies' wallflower	FE, SE	Year-round	Mar-Apr

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:

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C	/Coordinator	Northwest Information Center	(707) 588-8455
C	/	The Wiyot Tribe	(707) 733-5055
T	/	Bureau of Land Management	(707) 825-2300
T	/Agency Representative	California Department of Fish & Wildlife, Eureka	(707) 445-6493
T	/	Humboldt Bay NWR Complex	(707) 733-5406
T	/	Humboldt County Parks	(707) 445-7651
T	/	NOAA National Marine Fisheries Service-Arcata	(707) 822-7201
T	/	US Fish and Wildlife Service-Arcata Field Office	(707) 822-7201

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

Additional Site Summary Comments:

For further information about coastal access in this area, please refer to the California Coastal Commission’s California Coastal Access Guide. For photos of the coastline in this area, please refer to the California Coastal Records Project (www.californiacoastline.org).

Cultural, Historical, and Archeological sites are known to exist in the area, however, the exact locations of these sites must be ascertained by contacting the Native American Heritage Commission at (916) 373-3710, the State Office of Historical Preservation (916) 445-7000, and/or the Northwest Information Center (707) 588-8455.

Concerns and Advice to Responders:

Oiling of sloughs and marsh complexes on bay side could cause long term damage to important habitats. Avoid anchoring in eelgrass beds. Contact BLM prior to initiating any response or clean up here due to presence of western snowy plover on beach and dunes.

Hazard and Restrictions:

Locked gates between dusk and dawn.

Site Strategies:

Site Validation Level: II

Strategy: 1-360.1 Objective: No Onsite Options: Consider Offshore Containment/Recovery/ART
Strategy: This site is best protected by preventing the oil from arriving here, when possible. Off-site response options including dispersants should be considered. Conventional on-scene response is not possible at this site. Protect with off-site measures only.

Table of Response Resources

Last Page Update

Logistics:

Directions: Go south on Hwy 101 from Eureka to Hookton Road exit 68, continue west on Hookton Road to Table Bluff Road; below Table Bluff the road will become South Jetty Road and run the length of the South Jetty terminating at the jetty. The gate key can be obtained by contacting BLM or the Humboldt County Sheriff if necessary to access site after hours.

Land Access: All vehicles can access South Spit during daylight hours, call BLM or Humboldt County Sheriff for access after hours.

On-Water Limitations: Multiple vessel launches are available on Humboldt Bay in Eureka and Fields Landing

Facilities, Staging Areas, Command Posts, Available Equipment: Small parking lot at Table Bluff County Park and additional lots along South Jetty Road may provide local staging needs.

Communications Problems: none



Imagery: NAIP 2010 (Summer) 4-Band

9811.2 Response Summary Tables

A summary of the response resources is listed by site and sub-strategy next.

Summary of ACP 1 GRA 3 Response Resources by Site and Sub-Strategy

Site	Site Name	PREVENTION OBJECTIVE OR CONDITION FOR DEPLOYMENT		
Sub-Strategy	Equipment	Sub-Type	Size/Unit	QTY/Unit
1-305	Humboldt Bay Inlet and Inner Samoa Peninsula			
.1 - Notify PG&E when oil threatens King Salmon				
.2 - Collect oil at natural collection sites to minimize the spread of oil around the bay and to prevent oil from exiting the bay				
	Boom	Harbor	2000 feet	
	boat	Boom Boat or Skiff		2
	Anchor	Danforth	25 lb	10
	Staff	Staff to Deploy		8
	skimmer	SSS/SPS		1
.3 - On water skimming of free floating oil				
	Staff	Staff to Deploy		3
	skimmer	SPS		1
1-310	North Humboldt Bay			
.1 - On water recovery				
	Staff			3
	skimmer	SPS		1
.2 - Prevent oil from entering Arcata Bay				
	Boom	Swamp	2000 feet	
	Hose		500 feet	
	boat	Boom Boat or Skiff		2
	Vac truck			1
	Anchor	Danforth	22 lb	12
	Staff			8
	skimmer	SPS		1
1-320	Mad River Slough			
.1 - Exclusion booming to exclude the oil from the site.				
	Staff	Staff to Deploy		6
	boat	Skiff		1
	Boom	Swamp	100 feet	
	Boom	Harbor	1200 feet	
	Anchor	Danforth	25 lb	4
	Boom	Sorbent	1200 feet	
.2 - Collect oil when a significant quantity is present.				
	Staff	Staff to Deploy		2
	skimmer	SSS		1

Sub-Strategy **PREVENTION OBJECTIVE OR CONDITION FOR DEPLOYMENT**

Equipment	Sub-Type	Size/Unit	QTY/Unit
1-324 Arcata Bay Sloughs			
.1 - Exclude oil from entering surrounding sloughs, especially Jacoby Creek			
Boom	Sorbent	100 feet	
Boom	Harbor	500 feet	
Stakes, Shovels, Hammers			
Staff			6
.2 - Exclude oil from entering surrounding sloughs, especially Gannon Slough			
Boom	Sorbent	100 feet	
Staff			6
Boom	Harbor	500 feet	
Stakes, Shovels, Hammers			
.3 - Exclude oil from entering surrounding sloughs, especially Jolly Giant Creek at Butchers Slough.			
Stakes, Shovels, Hammers			
Boom	Harbor	300 feet	
Staff			6
Boom	Sorbent	100 feet	
.4 - Exclude oil from entering surrounding sloughs, especially McDaniel Slough.			
Staff			6
Stakes, Shovels, Hammers			
Boom	Sorbent	50 feet	
Boom	Harbor	300 feet	
.5 - Exclude oil from entering surrounding sloughs, especially Rocky Gulch.			
Staff			4
T-Posts			
Boom	Sorbent	100 feet	
Boom	Swamp	300 feet	
1-326 Eureka Slough			
.1 - Exclude oil from the slough.			
Staff	Staff to Deploy		6
Boom	Swamp	200 feet	
Boom	Sorbent	100 feet	
Boom	Harbor	1000 feet	
boat	Boom Boat		
.2 - Collect oil			
Boom	Swamp	1000 feet	
Boom	Sorbent	100 feet	
skimmer	sss		1
collection and containment pac			1
Staff	Staff to Deploy		6
1-328 Woodley Island			
.1 - Boom, collect and skim oil out of the environment.			
boat	Boom Boat		1
Staff	Staff to Deploy		3
skimmer	SPS		1
Anchor	Danforth	25 lb	4
Boom	Harbor	1200 feet	
Stakes, Shovels, Hammers			
.2 - Boom, collect and skim oil out of the environment			
Boom	Harbor	1200 feet	
skimmer	SPS		1
boat	Boom Boat		1
Anchor	Danforth	25 lb	4
Staff	Staff to Deploy		5

Site Site Name

Sub-Strategy PREVENTION OBJECTIVE OR CONDITION FOR DEPLOYMENT

Equipment	Sub-Type	Size/Unit	QTY/Unit
1-330 Indian Island			
.1 - Stop oil from entering the island's wetlands after a skimmer and boom have been placed in the North Bay at site 1-310			
Anchor	Danforth	25 lb	2
Staff	Staff to Deploy		2
boat	Boom Boat		1
Boom	Swamp	500 feet	
1-340 Palco Marsh			
.1 - Prevent oil from entering the marsh			
Boom	Swamp		300 feet
T-Posts			
Anchor	Danforth	25 lbs	1
Boom	Sorbent		40 feet
Staff			3
1-345 Elk River & Marsh			
.1 - Shut key-locked tide gates on Pound Road to prevent tidal exchange.			
Staff			2
Key or Bolt Cutters			1
.2 - Boom the mouth of Elk River to exclude oil.			
Anchor	Danforth	25 lb	5
Boat	Skiff		1
Staff			4
Boom	Harbor	1400 feet	
Boom	Sorbent	300 feet	
.3 - Collect oil when enough is present to skim.			
Skimmer	SSS/SPS		1
Staff			2
.4 - Boom the mouth of Elk River to exclude oil.			
Staff			5
Boat	Skiff		1
Boat	Boom Boat		1
Anchor	Danforth	25 lb	9
Boom	Swamp		800 feet
Boom	Harbor		2000 feet
1-350 South Humboldt Bay			
.1 - Deploy boom to strand oil on the shoreline or collect for skimming.			
skimmer	SSS		2
boom	Harbor	1200 feet	
boat	Boom		2
Staff	Staff to Deploy		10
Anchor	Danforth	25 lb	5
.2 - On water recovery			
Boom	Harbor	100 feet	
boat	Skiff		2
skimmer	SBS		1
Staff	Staff to Deploy		2
1-352 White Slough & Salmon Creek			
.1 - Prevent oil from entering the slough			
Boom	Harbor	600 feet	
boat	Skiff		1
Staff	Staff to Deploy		6
anchor stakes			4
1-360 South Spit			
.1 - Prevent spilled oil from floating to this site.			

9811.3 Lists of Economic Resources Susceptible to Oiling

A summary of Human Health and Safety Sites and Economic Resources is listed by GRA. Refer to Section 9804 for more information.

Economic Sites - GRA 3

Site Information	Site Number & Location	Lat/Long & Priority
<p>Mad River Slough Mariculture sites</p> <p>CA 95501 Phone: 707-822-9057</p> <p>Site Description: sites in North Bay and Slough</p>	<p>Site Number: 1-3-HM-100-D Operational Division:</p>	<p>Aquaculture and Mariculture D Lat/Long: 40.83 -124.16</p>
<p>Arcata Marsh</p> <p>Arcata CA 95521 Phone: 707-822-6918</p> <p>Site Description: water treatment, salmon ranching, and wildlife habitat</p>	<p>Site Number: 1-3-HM-105-D Operational Division:</p>	<p>Aquaculture and Mariculture D Lat/Long: 40.86 -124.09</p>
<p>North Bay Shellfish</p> <p>McKinleyville CA 95519 Phone: 707-267-5634</p> <p>Site Description:</p>	<p>Site Number: 1-3-HM-110-D Operational Division:</p>	<p>Aquaculture and Mariculture D Lat/Long: 40.95 -124.12</p>
<p>Coast Oyster</p> <p>25 Waterfront Dr Eureka CA 95501 Phone: 707-442-2947</p> <p>Site Description: N. Spit & N. Humboldt Bay</p>	<p>Site Number: 1-3-HM-115-D Operational Division:</p>	<p>Aquaculture and Mariculture D Lat/Long: 40.8 -124.17</p>
<p>Subtidal Aquaculture Sites</p> <p>Samoa Channel Samoa CA 95564 Phone: 707-443-3401</p> <p>Site Description: aquaculture- #phone is for Humboldt Bay Harbor District</p>	<p>Site Number: 1-3-HM-120-D Operational Division:</p>	<p>Aquaculture and Mariculture D Lat/Long: 40.82 -124.18</p>
<p>Daby Island (Eureka Waterfront)</p> <p>Eureka CA 95501 Phone: 707-441-4207</p> <p>Site Description: Wiyot Tribal Council 707-773-5055</p>	<p>Site Number: 1-3-HM-125-D Operational Division:</p>	<p>Parks, Beaches, Recreational Areas D Lat/Long: 40.81 -124.15</p>
<p>Recreational Clamming Beds</p> <p>Eureka CA Phone: 707-443-8691</p> <p>Site Description: Ereuka Dispatch 707-441-4044</p>	<p>Site Number: 1-3-HM-130-D Operational Division:</p>	<p>Parks, Beaches, Recreational Areas D Lat/Long:</p>
<p>Redwood Marine Terminal II</p> <p>Samoa CA 95564 Phone: 707-443-3401</p> <p>Site Description: water intake; phone # is Humboldt Bay Harbor District</p>	<p>Site Number: 1-3-HM-135-D Operational Division:</p>	<p>Water Intakes [Non-Human Health and Safety Lat/Long: 40.8 -124.19</p>
<p>PG&E Power Plant King Salmon</p> <p>1000 King Salmon Eureka CA 95503 Phone: 707-444-0712</p> <p>Site Description: S. Humboldt Bay</p>	<p>Site Number: 1-3-HM-140-HHS Operational Division:</p>	<p>Human Health and Safety or Critical Infrastructure Lat/Long: 40.74 -124.22</p>
<p>Elk River Waste Treatment Plant</p> <p>4301 Hilfiker Ln Eureka CA 95503 Phone: 707-441-4203</p> <p>Site Description: City owned with 139 acres of wetlands</p>	<p>Site Number: 1-3-HM-145-D Operational Division:</p>	<p>Water Intakes [Non-Human Health and Safety Lat/Long: 40.77 -124.19</p>

Economic Sites - GRA 3

Site Information	Site Number & Location	Lat/Long & Priority
<p>Red Tank Docks</p> <p>Samoa CA 95564 Phone: 707-443-3401</p> <p>Site Description: Water intake; # is for Humboldt Bay Harbor District</p>	<p>Site Number: 1-3-HM-150-D Operational Division:</p>	<p>Water Intakes [Non-Human Health and Safety Lat/Long: 40.81 -124.19</p>
<p>King Salmon Beach</p> <p>1375 Buhne Dr Eureka CA 95503 Phone: 707-442-3474</p> <p>Site Description: Marina services and recreational site</p>	<p>Site Number: 1-3-HM-165-D Operational Division:</p>	<p>Public Marinas and Harbors D Lat/Long: 40.74 -124.22</p>
<p>Fields Landing Boat Launching Facility</p> <p>175 Railroad Ave Fields Landing CA 95537 Phone:</p> <p>Site Description:</p>	<p>Site Number: 1-3-HM-170-D Operational Division:</p>	<p>Public Marinas and Harbors D Lat/Long: 40.73 -124.22</p>