2-164-A Site Summary - Tomales Bay **2-164-A**

County: Marin **ACP Division/Segment:** MR - B - S001 MR - E - S010

NOAA Chart: Bodega and Tomales Bays 18643 ***Map Book:*** Marin County ***Decimal Degrees:*** 38.161455 -122.906105

Site Description:

This site includes all of Tomales Bay from the entrance at the north end to the head of the bay at Lagunitas Creek at the southerly head. Several environmentally sensitive sites identified in this ACP (164-184) are also located within this site. Site lies within the Greater Farallones National Marine Sanctuary. This site includes all of Tomales Bay from the entrance at the north end to the head of the bay at Lagunitas Creek at the southerly head. Tomales bay is a large elongate bay, approximately 13 miles long, with a narrow mouth (1,200 ft wide). There are strong tidal currents through the mouth. Most of the tidal volume scours a deep channel along the west shore all the way south to Pelican Point. Lesser channels braid away from the mouth to the east forming a complex of bars and channels which shift throughout the year and require local expertise to negotiate. Elsewhere waters are shallow and salt marshes, sand and mud flats, extensive eelgrass beds, clam beds, and oyster aqua culture facilities are typical throughout the bay. Significant numbers of migratory shorebirds, seabirds, and waterfowl (dabbling, diving, and sea ducks) use the area particularly during fall and winter months. Pacific herring spawn in eelgrass beds. Anadromous fishes are present in the bay and its tributaries from November through May. Ownership of the bay margin is predominantly public agencies and conservation groups: Point Reyes National Seashore, Golden Gate National Recreation Area, Tomales Bay State Park, Audubon Society. Many private landowners bordering the bay are concerned about the conservation and well being of the bay. All response actions should be temporized by the fact that the entire margin of the bay, especially drainage mouths, have archeologic sites from heavy native American use.

Resources at Risk:

ESI and Habitat: 10A Salt - and brackish-water marshes
9B Vegetated low banks
9A Sheltered tidal flats

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Amphibians	California red-legged frog	FT, SSC		
Birds	Western snowy plover	FT, SSC		
Birds	California Ridgeway's rail	FE, SE		
Birds	tri-colored blackbirds	FP, SSC		
Birds	California black rail	FP, ST		
Fish	longfin smelt	ST		
Fish	salmonids			
Fishery	clamming - Sport			
Fishery	Aquaculture - Commercial			

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

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
E	/Owner	Hog Island Oyster Company	(415) 602-9281
E	/Owner	Lawson's Landing Store & Campground	(707) 878-2443
E	/Emergency Service Coordinator	Marin County Office of Emergency Services	(415) 250-0267
E	/Dispatch, 24-hr	Marin County Sheriff's Department	(415) 479-2311
O	/Director of Conservation Science	Audubon Canyon Ranch	(415) 663-8203
O	/Agency Representative, 24-hr	California Coastal Commission	(415) 693-8375
O	/Office	Point Blue Conservation Science	(707) 781-2555
O	/Dispatch, 24-hr	The Marine Mammal Center	(415) 289-7350
T	/Agency Representative, 24-hr	Greater Farallones National Marine Sanctuary	(650) 479-5311
T	/Park Ranger, 24 hr	US National Park Service, Point Reyes	(415) 464-5175

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

Additional Site Summary Comments:

This area has a high diversity of species including two federally listed butterflies, Point Reyes blennosperma (FE/SR), Golden larkspur (SR), eelgrass beds, pacific herring, shorebirds, waterfowl, porpoises, etc. More details can be found from 2-166 to 2-191.

Concerns and Advice to Responders:

Oil may contaminant a wide variety of resources in the bay including saltmarshes, eelgrass beds, clam beds, harbor seals, birds and oyster aquaculture facilities. Shallow waters and large tidal mudflats will create access difficulties. The concerns are oil contamination and response activity impacts to wetlands, rare and endangered species, and other vulnerable plants and wildlife which are present throughout the year. The primary objective is to minimize the exposure of oil to plants, animals and habitats present at this site. Other concerns are the impacts resulting from response activities. Avoid trampling wetlands, sensitive plants and animals, and soft mudflats, causing penetration of oil into the sediments and further injury to the environment.

Hazard and Restrictions:

Extremely strong tidal currents near the mouth of the bay. Shallow tidal bars and flats exist throughout the bay especially in the northeastern portion at the mouth of the bay. Submerged oyster aquaculture facility structures common on the eastern side of the central bay.

Site Strategies:

Site Validation Level: II

Strategy: **2-164.1** ***Objective:*** Primary exclusion for heavy oil impact threats: Exclude/divert/contain oil near mouth of bay to collection near Pelican Pt and minimize free spreading of oil on high velocity currents.

Strategy: The concept is to keep oil from spreading and allowing currents to move it to an area near Pelican Pt where currents cease to be a serious factor and collection is relatively easy. On the ebb current this strategy will also direct oil to shoreline collection at Tom's Pt area. This technique requires the direction of local fishermen (see contacts below), because dealing with channels and shallow bottoms along and south of Tom's Pt require detailed local knowledge and very shallow draft vessels, as does the approach to Tom's Pt shoreline.

Deploy 15,000 ft of Hboom from about a point about 1000 ft north of Toms Pt at a diagonal into the channel and then centered in the current all the way past Hog Island to collection at Pelican Pt. A second deflection from shore should preceed the main deflection. The oil will stay within the current and move to collection areas, and not spread across the bay. Currents thoughout upper bay are very strong and booms must be set with and not against current using large anchors (22# and 40# danforths with chain) else currents will entrain oil under booms. Set anchors every 500 feet and more often to angle boom into the current at Tom's Pt shoreline and Pelican Pt shoreline (and other places where channel turns). Cascade boom where necessary. If boom is set with or very diagonal to the current, then oil will not entrain under the boom. Target time for completion for six boomboats working at both ends of the strategy is about 3.5 hrs.

Collection should be set up just before or just after Pelican Pt by bringing boom end to shoreline. Even though Pelican Pt is a sensitive site (2-174), it is one of the few locations where oil may be managed and controlled and where land-based or water-based collection can be successful. The deepest water is just after Pelican Pt. Use Self Propelled Skimmers (SPS) with storage barges to collect, decant, and transport oil to storage at the east shoreline. A secondary collection area may be established at the mouth of White Gulch (see substrategy 2-177.3).

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	15000	feet
Anchor	Danforth	25	lb	40	
Vessel	Skiff or Punt			2	
skimmer	self propelled			1	
Staff	Staff to Deploy			12	

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Strategy:* 2-164.2 *Objective: Collect/Divert/Exclude - 2ndary backup strategyfor threats of heavy oiling to exclude oil from spreading to upper Bay and divert to east shoreline collection.

Strategy: Deploy boom at a diagional from just south of Pelican Pt to the shoreline about midway between Cypress Grove and Nick's Cove (note that there is a dairy on the hill above and a culvert under Hwy 1 at this location.) Currents are minimal along the entire length of this boom deployment; 7000 ft of 9X9+ if winds are threatening). Place anchors at 800 ft intervals. Construct a collection Boom pocket at the shoreline and service Shore Side Skimming (SSS) at Hwy 1.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	9x9	inch	7000	feet	
Anchor	Danforth	25	lb	15		
Vessel	Skiff or Punt			1		
skimmer	shoreside			1		
Staff	Staff to Deploy			7		

Strategy:* 2-164.3 *Objective: Deflect to alternative collection locale at White Gulch.

Strategy: As a back-up collection area, divert oil from the containment boom in substrategy .1 past marker ## near Hog Isle to White Gulch. Deploy 2000' 9X9+ Hboom across the channel into White Gulch, cascading as necessary, with anchors at least every 400' intervals. The back portion of White Gulch cove has little current and oil may be skimmed with Self Propelled Skimmers (SPS). If oil is to be collected here, the protection strategy fo White Gulch (2-174.1) will require alteration by adding more boom and anchors (300' 6X6+) to create a collection pocket.

This location has possible physical conditions which may limit it's usefulness. 1) it may be difficult to divert surface currents across the channel past the shallow mid-channel eelgrass bed to the Cove, because of the current deflected off the upstream point toward the east; 2) there are stiff winds which typically blow down White Gulch which might prevent oil from staying in the collection pocket. These uncertainties cause this alternative to be viewed as an alternate until it can be demonstrated as effective.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	9x9	inch	3500	feet	
Boom	Swamp	6x6	inch	300	feet	
Anchor	Danforth	25	lb	12		
Vessel	Skiff or Punt			1		
skimmer	shoreside			1		
Staff	Staff to Deploy			7		

Strategy:* 2-164.4 *Objective: 3rd alternate: Divert oil from Sand Point area across to Tomales Headland

Strategy: Deploy 6000' diversion boom from a locale near Sand Point (and in conjunction with Sand Pt Strategy 2-166.1) across the channel at a very gradual diagonal (to keep the flow agianst the boom to a minimum to avoid entrainment) to quiet waters near shore. Cascade boom as necessary and adjust cascades to avoid entrainment losses. Use mid-boom anchors to minimize catenary sags in boom. Use heavy anchoring with chain and extra scope on lines. If oil collects effectively, call for Self Propelled Skimmer and seek opportunities to gound oil on pocket beaches along the shoreline.

This strategy is the third alternate to control oil entering Tomales Bay for these reasons: 1) currents here are extremely strong (can exceed 4 knots) and requires exceptional booming skills; 2) there are no clear collection options at the shoreline; 3) very high tides may carry oil into riparian vegetation along shore.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit
Boom	Harbor	9x9	inch	6000	feet
Anchor	Danforth	25	lb	13	
Vessel	Skiff or Punt			1	
Staff	Staff to Deploy			7	

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Strategy:* 2-164.5 *Objective: Outside bay alternative: ART & Open Water Skimming.

Strategy: Eliminating oil before it enters the Bay is the optimal strategy for dealing with oil spill threats.

Only the application of Advanced Technologies (dispersants & in situ burning) has a high effectiveness in large slicks. Conventional skimming can be effective if oil encounter rate is high.

Under rare calm conditions oil might be diverted to shore outside the bay, but these deployments are not likely to be effective and will fail when conditions become aggressive.

Grounding of oil at Sand Pt outside the bay entrance is similarly problematic: Deflect oil to Dillon Beach by cascading small sections (300 to 500 feet) of ocean boom across the flood tidal channel that runs parallel to the beach. Use 4,000 feet of boom having a minimum freeboard of 20 inches and a minimum draft of 18 inches. Two boom boats capable of operating in 3 ft seas will be needed to pull the boom off the shore into formation.

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Logistics:

Directions: Highway 1 follows the eastern shoreline of Tomales Bay. To get to Hwy 1 from Hwy 101: in San Rafael, take the Sir Francis Drake exit and proceed west to Olema and Pt. Reyes Station; in Petaluma, take the Pt. Reyes Petaluma Road to Pt. Reyes Station at the head of the bay, or the Petaluma-Bodega Rd to Tomales-Petaluma Road to Hwy 1.

Land Access: Varies from foot only to large truck access.

On-Water Limitations: <40ft vessels preferred, shallow draft only over flats. Boats up to 35 feet LOA can be launched (hoist) at Marshall Boat Works (Owner: John Vilisitch (415-663-122x). There is a concrete boat launch ramp at Nick's Cove near Miller Park. There are also beach launching for small boats (<25ft.) at Lawson's Landing, Sacramento Landing, and Marconi. Inverness also has a launch

Facilities, Staging Areas, Command Posts, Available Equipment: There is good access and large staging area at Lawson's Landing. There is also space for a staging area at Marshall Boat Works and Nick's Cove boat ramp.

Communications Problems: Cell reception varies on outer coast.

Additional Operational Comments: Access to SE end of Brazil Beach is through private property owned by Mr. Jim Byers. Get phone # from County Sheriff or Audubon Canyon Ranch.


Sand Point
Lawson's Landing
Brazil Beach
Clam Island
Seal Island
2-164.4
2-164.1
Tom's Point
Walker Creek
1
2-164.1
Nick's Cove
2-164.3
Hog Island
White Gulch
Pelican Point
2-164.2
0 1,000 2,000 4,000
Feet
N
CDFG - OSPR & USCG Site: 2-164 Name: Tomales Bay
G.Ewing (OSPR) & M. Schommer (OSPR) Date: 12/29/2021
Harbor Boom
Swamp Boom