

2-603-A Site Summary - Bulls Head Marsh and Pacheco Creek**2-603-A****County:** Contra Costa **ACP Division/Segment:** CC - L - S005 CC - L - S006**NOAA Chart:** 18656 Suisun Bay**Map Book:****Decimal Degrees:** 38.039235 -122.099329**Site Description:**

Site extends from Benicia Bridge to the Avon Wharf and includes the tidal marshes tributary to Suisun Bay and Pacheco Creek (aka Walnut Creek or Avon Slough) landward to Hwy 4. There are two extensive salt-marshes south of Waterfront Road (Marina Vista Rd): McNabney Marsh (tributary to Peyton Slough and owned by East Bay Regional Parks) and an unnamed marsh tributary to Pacheco Creek. The marshes north of Waterfront Rd between Hwy I-680 and Pacheco Creek are connected to the south shore of Suisun Bay by several small tidal channels. The marshes south of Waterfront Rd are mostly pickleweed, tule, salt-grass marshes with emergent growths along the edges of waterways and occasional patches of cattail dominant marshes, whereas marshes to the north are dominated by tules and sedges, particularly near the water front and slough margins. Pacheco Creek is very fresh in its more upstream reaches, particularly during high rainfall periods. Salmon and Steelhead are common in Pacheco Creek but do not spawn in the system. There are various dikes and flood control channels throughout the marsh. Pacheco Creek is extremely shallow, has an even shallower bar across its mouth. Regardless, the entire marshfront become mudflats at very low tides. There are three refineries, a chemical plant, a railroad line and several tank farms adjacent to and tributary to this site.

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

9B Vegetated low banks

8C Sheltered riprap

List of Resources at Risk:

	Resource Name	Status	Presence	Sensitivity
Birds	California Ridgeway's rail	FE, SE		Feb-Aug
Birds	California black rail	FP, ST		Mar-Aug
Birds	common yellowthroat	FP, SSC		Jun-Aug
Birds	yellow rail	FP, SSC		
Fish	longfin smelt	ST		Nov-May
Fish	delta smelt	FT, SE		Mar-May
Mammals	salt-marsh harvest mouse	FE, SE		
Reptiles	qiant garter snake	FT, ST		Jul-Oct

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

List of Key Contacts:

Type	Name/Title	Organization	Phone
C	/Coordinator	Native American Heritage Commission	(916) 373-3710
C	/Coordinator	Northwest Information Center	(707) 588-8455
E	/Dispatch, 24-hr	Contra Costa County Office of the Sheriff	(925) 646-2441
E	/Dispatch, 24-hr	East Bay Regional Park District	(510) 881-1833
T	/Office	Audubon Society, Solano County Chapter	(707) 643-7089
T	/Environmental Program Manager	CA Dept. of Fish & Wildlife, Bay Delta Region	(707) 576-2837
T	/Agency Representative	NOAA National Marine Fisheries Service	(562) 980-3232
T	/Oil Spill Point of Contact	NOAA National Marine Fisheries Service	(707) 480-3496
T	/Restoration Ecologist	US Department of Agriculture	(530) 304-2304
T	/Spill Response Coordinator	USFWS, SF Bay-Delta Office	(916) 799-0588

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

Additional Site Summary Comments:

There are a number of sensitive plants and the Suisun ornate shrew in this area.

Concerns and Advice to Responders:

Primary concern is oil being carried into the interior marsh via tidal channels and oiling of interior marsh. So, the first priority is to exclude oil from tidal channels. Secondly, there is a plan to collect oil at the Pacheco Creek shoreline to prevent oiling spread and movement. As time and priority allow, the entire marsh shoreline may be protectively boomed. Avoid trampling the salt-marsh vegetation and be aware that small endangered species are present. Avoid trampling oil into the sediments.

Hazard and Restrictions:

This area is very shallow and exposed mudflats at low tide. There may be submerged hazards near shoreline.

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

Strategy: 2-603.1 Objective: Exclude oil from entering Pacheco Creek, Peyton Slough and four other tidal channels on flood currents

Strategy: Deploy exclusion booms in a chevron configuration in front of each tidal slough, securing boom ends well up and downstream from the openings to avoid entrainment and short-circuiting. Anchors will be necessary to keep chevron formation. Boom ends may be anchored at shore with stakes.

A) 1000' 9x9+ harbor boom at the mouth of Pacheco Slough with 22# anchors

b) At Peyton Slough and the other four tidal inlets west of Pacheco Slough, use 6X6+ in lengths of 50' and 100'. Back with sorbent boom.

c) If boat passage into launch ramp in Pacheco Creek for response activities, it may be necessary to have boom tending or cascades.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	9x9 inch		1000	feet	
Boom	Swamp	6x6 inch		400	feet	
Boom	Sorbent			1000	feet	
Anchor	Danforth	25 lb		6		
Vessel	Boom Boat			1		
Vessel	Skiff or Punt			1		
Staff	Staff to Deploy			5		

Strategy: 2-603.2 Objective: For flood tides, deflect oil to collection site in Pacheco Creek on Avon refinery shoreline to prevent oil spread to other marsh sites, to collect it, and prevent its free movement.

Strategy: Create a collection site at the northerly most exteme of the levee road on refinery treatment pond east of Pacheco Creek.

A) First, deploy two diagonal barriers of swamp boom (700' 6X6+) to direct the oil from the mouth of the Creek to the collection site. Use stakes to anchor and maintain shape. (If response boat passage into Pacheco Creek is necessary, boom tending may be required.)

b) Then line the marsh along the east bank with swamp boom (1100') and tie the boom into the exclusion boom at the mouth. Use stakes to anchor and maintain shape.

C) After the collection pocket boom is in place (a & b above), deploy a deflection boom (2700' 9x9+ harbor boom total) from the Shore Terminals Wharf to the east side of Pacheco Slough mouth to funnel the oil into collection on the flood tide. Usually exclusion strategy (2-603.1) will have been deployed first, and 1000' of boom will already be at the mouth and must be repositioned as part of the deflection (so the amount of boom needed will be 1000 ft more if that boom is not already onsite.) Use multiple anchors with heavy chain to hold the boom in position in the currents.

D) Improve the shoreside collection site as necessary. Consider excavating a pocket and seek approval from IC. Place plywood or other walking sureface at work site to prevent oil being trampled into muds.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	9x9 inch		2700	feet	
Boom	Swamp	6x6 inch		1800	feet	
Boom	Sorbent			300	feet	
Anchor	Danforth	22 lb		17		
Vessel	Boom Boat			2		
Vessel	Skiff or Punt			1		
skimmer	self propelled			1		
Staff	Staff to Deploy			10		

Strategy: 2-603.3 Objective: Marsh front protective booming: If there is threat of heavy oiling and saturation of the marsh front, and when such use will not preclude defending other sites with Strategic Objectives 5 and 6 action (seek concurrence of the trustee strategist).

Strategy: Deploy protective boom along the marsh front from the Benicia Bridge to the Pacheco Slough, using 9,000 ft of harbor boom. If there are high energy wave conditions, a second layer of swamp boom may be required. (A strategy for the deployment of exclusion boom at this site is illustrated in Potential Oil-Spill Protection Strategies for San Francisco Bay, CA (Hayes and Montello, 1994).)

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Harbor	9x9 inch		9000	feet	
Anchor	Danforth	22 lb		19		
Vessel	Boom Boat			3		
Vessel	Skiff or Punt			1		
Staff	Staff to Deploy			10		

Strategy: 2-603.4 Objective: Collection/ containment of upstream threats: If oil is moving down Pacheco Slough from an inland spill, deploy a containment collection as in strategy 2-603.2

Strategy: Create a collection site at the southerly most convenient site on the windward shore, such as the Waterfront Road Pacheco Creek bridge or launch ramp. Most convenient deployment of boom from shore using skiffs, due to shallows.

- a) First, deploy two diagonal barriers of swamp boom (600' 6X6+) to direct the oil in the Creek to the collection site. Use stakes to anchor and maintain shape. (To permit boat passage into Pacheco Creek, it may be necessary to have boom tending.)
- b) Line the marsh along the east bank with swamp boom (1000'). Use stakes to anchor and maintain shape.
- c) Improve the shore side collection site as necessary. Consider excavating a pocket and seek approval from IC. Place plywood or other walking sureface at work site to prevent oil beng trampled into muds.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Swamp	6x6 inch		1600	feet	
Anchor	Danforth	22 lb		8		
Vessel	Boom Boat			1		
Vessel	Skiff or Punt			1		
Staff	Staff to Deploy			5		

Strategy: 2-603.5 Objective: Back-up for .1 exclusion in case of over-wash threat

Strategy: Deploy second layer of exclusion booms in a chevron configuration in front of each tidal slough just behind first layer. As with primary exclusion, secure boom ends well up and downstream from the openings to avoid entrainment and short-circuiting.

- a) 1000' 6X6+ swamp boom will be needed at the mouth of Pacheco Slough;
- b) At Peyton Slough and the other four tidal inlets use 6X6 Swamp Boom in lengths of 50' and 100'.

Table of Response Resources

Equipment	Sub-Type	Size	Unit	QTY	Unit	Last Page Update
Boom	Swamp	6x6 inch		1400	feet	
Anchor	Danforth	22 lb		7		
Vessel	Boom Boat			1		
Vessel	Skiff or Punt			1		
Staff				5		

Logistics:

Directions: Exit Hwy I-680 to Marina Visa / Waterfront Road at Martinez (exit just south of Benicia Martinez Bridge) and proceed east. There is access to the shoreline from Shore Terminal's wharf, from the Tosco Avon Refinery, and at the Bridge over Pacheco Creek. By boat, proceed east from the Martinez Marina about a mile to the area east of the Martinez-Benicia Bridge.

Land Access: Access only at Tosco and Shore Terminal wharf; otherwise access by foot only

On-Water Limitations: Exceedingly shallow - mudflats at low tides. Launch at Tosco to Pacheco Creek during higher tides only, otherwise Martinez Marina and Benicia Marina. Full service at Martinez and Benicia.

Facilities, Staging Areas, Command Posts, Available Equipment: Best staging is at Martinez because of the amount of services available (Martinez inaccessible at low tides due to sediment buildup). Benicia is also a good staging site. Locally, equipment may be staged at Tosco at Pacheco Creek or at Shore Terminal wharf.

Communications Problems: Good cell reception in area.

