2-222 -A Site Summary- Bolinas Lagoon

2-222 -A

		Thomas Guide Location	Latitude N	Longitude W
County:	**Marin**	Marin County	3 7 55	122 40
USGS Quad:	**7.5" Quad: Bolinas, CA**	NOAA Chart: **18649**		

Last Page Update : 12/15/2005

SITE DESCRIPTION:

This site includes all of Bolinas Lagoon, mudflats, and marshes adjacent to the communities of Bolinas and Stinson Beach. Shorelines under NPS Management. The site lies with Gulf of the Farallones National Marine Sanctuary. A large natural coastal lagoon/estuary with extensive tidal mudflats, saltmarsh, and riparian habitat along freshwater inflows. The lagoon mouth is open all year.

SEASONAL and SPECIAL RESOURCE CONCERN

The lagoon is an "A" priority all year because of its extensive marshes, mud flats and the tremendous numbers of diverse wildlife that utilize the area, such as: harbor seals, fish, shorebirds, wading birds, and waterfowl.

RESOURCES OF PRIMARY CONCERN

Habitat includes extensive marshes and mud flats that are used by harbor seals, shorebirds, wading birds, and waterfowl. Riparian habitat and anadromous fish streams are also present within the estuary.

A great diversity and abundance of birds utilize Bolinas Lagoon throughout the year. Several special status species, such as: the threatened snowy plover on sand spit at mouth of the lagoon, and Species of Special Concern such as the osprey and merlin, forage, nest and roost in and around the lagoon. Large numbers of egrets and great blue herons are present all year. Dabbling and diving ducks, and shorebirds are very abundant during the winter (Oct - Mar) and peak migration periods (Sept - Nov and Mar - May).

Approximately 200 Harbor seals haul out regularly in the lagoon. Each year approximately 50 pups are born in the spring (Mar - Apr).

A variety of surfperch, flatfish and other nearshore species can be found in the lagoon all year. Pacific herring may enter the lagoon during the winter (Nov - Mar). Coho salmon and steelhead trout may be present in the lagoon and Pine Gulch Creek (Nov - Apr).

A variety of shrimp, clams, and other invertebrates can be found on the mudflats and in the channels (Ghost and mud shrimp, gaper clam, littleneck clam, washington clam).

Saltmarshes fringe the entire lagoon. Freshwater marsh species can be found up tributaries.

Riparian habitat is present along freshwater inflows, primarily on the west side of the lagoon.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

This is a culturally sensitive area. Contact the Point Reyes National Reacreational Area main office, cultural resource specialist, the California Dept of Parks and Recreation -Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Bryan Much, Sonoma State College ((707) 332-1117)) for specific information on historic or cultural resources in this area.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name / Title	Organization	Phone
E/T	24hr Sanctuary Personnel	Gulf of the Farallones National Marine Sanctuary	(650) 479-5311
O	Main Office	Point Blue Conservation Science	(707) 781-2555
O	Jonathan Bishop Oil Spill Prgm Coord.	CA Coastal Commission	(415) 904-5247
E/O	Anita Brown Fire Chief	Bolinas Fire Dept.	(415) 499-6717
O	Alison Detmer	CA Coastal Commission	(415) 904-5205
E/T	Daphne Hatch	US National Park Service, Golden Gate (NRA)	(415) 289-1840
E	Kiren Niederberger Office	Sea Drift Association	(415) 868-9043
E/T	NPS Dispatch	US National Park Service, Golden Gate (NRA)	(415) 561-5505
E/L	Brian J. Sanford Superintendent	Marin, County of, Parks & Open Space	(415) 499-7473
E/T	Vika Sirova	US National Park Service, Golden Gate (NRA)	(415) 561-4731
E/O	Kenny Stevens Fire Chief	Stinson Beach Fire Dept.	(415) 868-0622

ADDITIONAL SITE SUMMARY COMMENTS:

County and Thomas Guide Location	NOAA CHART	Latitude N	Longitude W
Marin County Marin	18649	3 7 55	122 40

Last Page Update : 12/15/2010

CONCERNS and ADVICE to RESPONDERS:

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 keep oil from entering and spreading in the lagoon. Secondary concern is to minimize response activities impacts. Avoid trampling wetlands, sand dunes, sensitive plants and animals, and soft mudflats; causing penetration of oil into the sediments; and harassing seals, birds, and wildlife.

HAZARDS and RESTRICTIONS:

Shallow water/mudflats inside lagoon and strong currents at the mouth. Heavy surf and strong currents exist outside the lagoon entrance and along the outer beach.

SITE STRATEGIES

This is a large natural inlet which cannot be closed (diked). Lagoon mouth is very deep and flood current is very swift, so oil must be stopped either before it enters using open water recovery methods; or just inside where currents slow. In addition to on-water containment and recovery efforts, the following site-specific protection measures should also be deployed. Length and specific placement of booms may vary due to changing currents and bottom topography. Stinson Beach Launch ramp only useable for launching within 3-4 hrs of high tide and only modest size skiff.

Strategy 2-222.1 Objective: Objective: Primary – Use chevron (.a and .b) to Divert oil from Eastern Channel to Collections at SeaDrift and Kent Island. (.c) Exclude oil from Western channel between Bolinas and Kent Island

a) 1st leg of chevron. Diverts oil from south flow of eastern channel to collection pocket at Sea Drift Boat Ramp. Deploy 2400+ ft. of river boom (4” flotationx6”skirt), at a 10-15 degree angle into the incoming tidal current, from the Sea Drift Community Boat Ramp to 80’ SW of the eastern most channel mooring buoy (cascading legs may be needed if strong current is present). Create a skimming pocket at the Boat Ramp, wrap boom back against shore toward entry, and prepare the pocket to collect oil initially with sorbents and pompoms, if collectable quantities of oil present, advise Incident Command of skimmable oil and request skimmer (see 222.5).

b) 2nd leg of chevron. Diverts oil from north flow of eastern channel to collection pocket on Kent Island. Deploy 1380 ft. of deflection river boom (4” flotationx6”skirt) from northern end of .1a boom to eastern end of Kent Island at a 20-25 degree angle, to divert oil out of eastern channel onto the high tide sand beach of Kent Island.

c) Exclude oil from Western Channel next to Wharf Rd to Western end of Kent Island. Deploy 600 ft. of deflection river boom (4” flotationx6”skirt) from northern end of western side of the main channel, along house pilings, to divert oil heading up west channel onto the high tide sand beach of Kent Island. Anchor on land with a 22+# anchor or two stakes. Local responders can deploy .1c.

Strategy 2-222.2 Objective: Objective: Backup Strategy to .1. Use chevron to Divert and Collect oil from Eastern Channel to Collection at SeaDrift Boat Ramp and Kent Island.

a) 1st leg of chevron. Deploy 600’ of river boom (4” flotationx6”skirt) from the SeaDrift Boat Ramp at a 20-25 degree angle toward .1a boom. Create collection pocket at Boat Ramp, and prepare the pocket to collect oil initially with sorbents and pompoms, if collectable quantities of oil present, advise Incident Command of skimmable oil and request skimmer (see 222.5).

b) 2nd leg of chevron. Deploy 1650’ river boom (4” flotationx6”skirt) from west end of .4a) boom to eastern tip (above high water line) of Kent Island. Deploy at best achievable angle to flood current. Create a collection pocket by wrapping boom back along Kent Island shoreline. Local responders can deploy .2a and b.

Strategy 2-222.3 Objective: Prevent oil from entering northern and southern interiors of lagoon

Both legs are very shallow water deployments, crossing exposed mud flats at low tide and small secondary channels. Close and parallel to Highway 1 shoreline are deep water channels. Boom must be angled across channel at 20-25 degrees. Collection pockets should be established on Highway 1 shoreline. Several small channels may be encountered in mudflats and boom should be properly angled and backed with sorbent boom.

a) Deploy 3250' of river boom (4x6) from Highway 1 shoreline to eastern end of Kent Island (above high tide line). Both legs are very shallow water deployments, crossing exposed mud flats at low tide until close to Highway 1 shoreline when deeper water channels are reached. Boom then must be angled across channel at 20-25 degrees to then establish collection pockets on Highway 1 shoreline. Create a skimming pocket against sand beach on the Highway 1 side, wrap boom back against shore toward entry, and prepare the pocket to collect oil initially with sorbents and pompoms, if collectable quantities of oil present, advise Incident Command of skimmable oil and request skimmer (see 222.5).

b) Deploy 3750' of river boom (4x6) from SeaDrift Boat Ramp to Highway 1 shoreline. Both legs are very shallow water deployments, crossing exposed mud flats at low tide until close to Highway 1 shoreline when deeper water channels are reached. Boom then must be angled across channel at 20-25 degrees to then establish collection pockets on Highway 1 shoreline. Create a skimming pocket against sand beach on the Highway 1 side, wrap boom back against shore toward entry, and prepare the pocket to collect oil initially with sorbents and pompoms, but if collectable quantities of oil present, advise Incident Command of skimmable oil and request skimmer (see 222.5). Local responders can deploy .3a and b.

Strategy 2-222.4 Objective: Capture and Recover oil at entrance channel to Bolinas Lagoon

Place and anchor 400-1000' of oil snare lines along inside of channel entrance on Stinson and Bolinas shores, running angled to channel as conditions permit. Local responders can deploy.

Strategy 2-222.5 Objective: Shoreside Recovery of skimmable oil in collection/exclusion boom

When skimmable quantities of oil are present, deploy shoreside skimming system (SSS) to operate with 222.1 and 222.2 and 222.3 collection points as needed. Consider use of Self Propelled Skimmer if conditions warrant.

Table of Response Resources

strategy number	harbor boom	swamp boom	Other boom type	sorb boom	Anchoring no	Anchoring type and gear	Boom boat	Skiffs punts	Skimmers No	Skimmers Type	Special Equipment or comment No	Special Equipment or comment and kinds	staff deploy	Staff tend
2-222.1		4380	50 OS	200	25	15x22+#, 10x30-45lb; + 8stakes		3					8	4
2-222.2	0	2250		200	14	22+# anchor and 4 stakes		1	0				8	4
2-222.3		7000		400	25	10x12lb.		2	0				8	6
2-222.4	0	0	1000 OSN	0	0	36 stakes or 12# anchors	0	0			0		6	4
2-222.5			0	0					1 SSS		1	ShoreSide Skimmer / SelfPropelled Skimmer	3	3

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

From Hwy 101 in Marin County, take Hwy 1 from Sausalito to Stinson Beach; or from San Rafael take Sir Francis Drake Blvd west to Hwy 1, then south to Bolinas or Stinson Beach. To reach south side of lagoon mouth and boat ramp; in Stinson Beach turn on Calle del Arroyo, proceed to Sea Drift Community gate. Once in the community go to end of Sea Drift Rd. -- To get to north/west side of lagoon mouth pass through Stinson Beach to upper end of lagoon on Hwy 1; turn left on Olema-Bolinas Rd., proceed into the town of Bolinas, turn left on Wharf Rd. and go to end. This site includes all of Bolinas Lagoon, mudflats, and marshes adjacent to the communities of Bolinas and Stinson Beach. Shorelines under NPS Management. The site lies with Gulf of the Farallones National Marine Sanctuary.

LAND ACCESS: Large trucks okay, no tractor-trailer rigs

WATER LOGISTICS:
Limitations: depth, obstruction — Heavy surf and strong currents outside, shallow inside.
Launching, Loading, Docking and Services Available: — Boat ramp to lagoon at Sea Drift Community on Stinson Beach spit - accessible only during high tide.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Staging on south spit at end of Sea Drift Rd and at boat ramp. Space very limited in Bolinas. Equipment and helo pad available at Bolinas Fire Station a few miles away. No spill response equipment stored locally. Some food and lodging in Stinson Beach, less in Bolinas.

COMMUNICATIONS PROBLEMS: none known

ADDITIONAL OPERATIONAL COMMENTS: Tested by Clean Bay on October 7, 1997. Summary and Strategy modified in October 2011.


Bolinas Lagoon
2-222.3(a)
.1(b)
Kent Island
.1(c)
.3(b)
.4
Boat Launch
.2(b)
Seadrift
Stinson Beach
.1(a)
.2(a)
0
0.25
0.5
1
Miles
N
CDFG - OSPR & USCG Site: 2-222 Name: Bolinas Lagoon
G.Ewing (OSPR) & M. Schommer (OSPR) Date: 04/02/2014
Harbor Boom
Swamp Boom
Skimmer
Sorbent Boom
Other Boom
Offshore Containment Recovery
Dike or Berm
Filter Fence
Imagery: NAIP 2010 (Summer) 4-Band