

**Naval Weapons Station
Concord, California
Region 9
CA7170024528**

Site Exposure Potential

Naval Weapons Station (NWS) Concord is the U.S. Navy's major ammunition transshipment port on the West Coast. The station is in the north central portion of Contra Costa county, 50 km northeast of San Francisco (Lee et al. 1986). The site is on the south shore of Suisun Bay and is bounded to the south and west by the city of Concord, California (Figure 1). Eighty-one hectares of the NWS are contaminated with hazardous substances as a result of discharges from adjacent properties and operations on the site prior to its acquisition by the Navy. Potential off-site sources of contamination include six properties located east of the site (O'Neil 1988).

The NWS site includes both upland areas and intertidal estuarine wetlands. The dryer, upland portion of the tidal area and all of the inland area are grassland. A small creek, that originates in the hills south of the site crosses the contaminated area and terminates in Suisun Bay. The watershed of the creek is slightly over 1.6 km² (Lee et al. 1986). A second stream from a watershed west of the creek joins the creek just before it enters the marsh area. The entire wetland area of Suisun Bay is inundated during ten-year high tides. The San Joaquin and Sacramento rivers flow into Suisun Bay from the east, with Suisun Bay connecting to the San Francisco Bay through San Pablo Bay. The Sacramento River and San Pablo Bay may be areas of concern due to tidal influences.

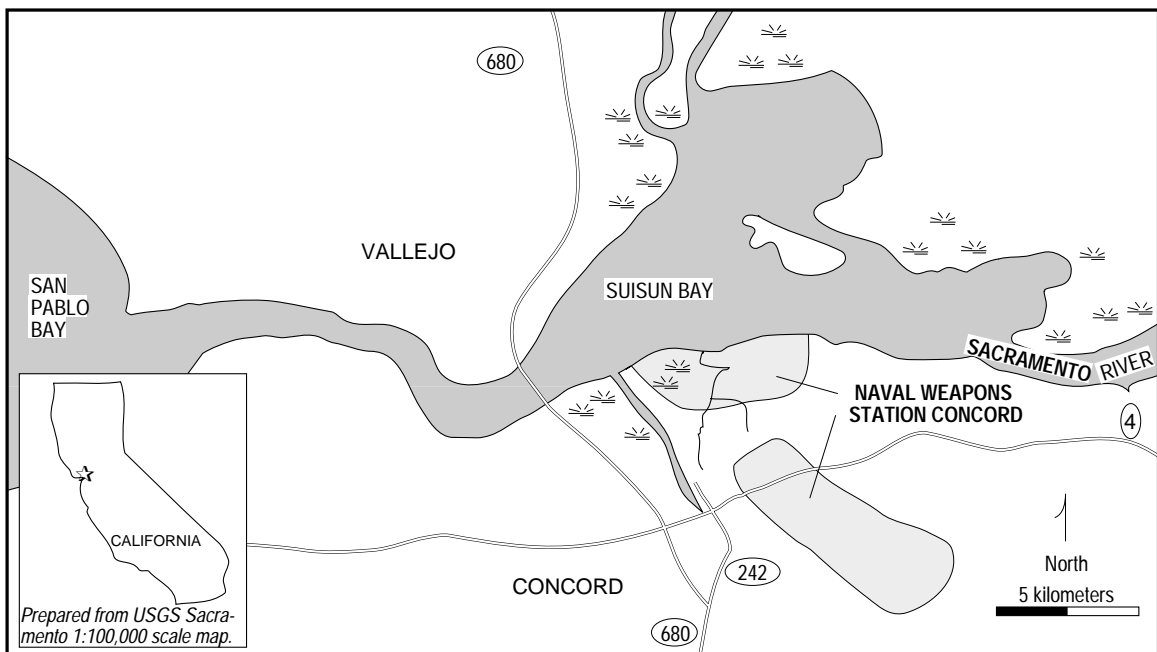


Figure 1. The Naval Weapons Station site in Concord, California.

A contaminant migration pathway to NOAA trust resources is surface water runoff to the Sacramento River, and Suisun and San Pablo bays.

Site-Related Contamination

The contaminants of concern to NOAA are trace metals, which have been observed in on-site soils (Table 1) (EPA 1983; Lee et al. 1986). Groundwater and surface water contamination has not been investigated.

Table 1. Maximum concentrations of selected contaminants at the NWS Concord site (O'Neil 1988); range in natural soil (EPA 1983); concentrations in mg/kg.

Contaminant	Soil	Content in Natural Soil	
		Range	Average
arsenic	3,490	1-50	5
cadmium	89	0.01-0.7	0.06
chromium	258	1-1,000	100
copper	10,500	2-100	30
lead	7,760	2-200	10
nickel	258	5-500	40
selenium	138	0.1-2	0.3
zinc	85,500	10-300	50

NOAA Trust Habitats and Species in Site Vicinity

NOAA trust resources are found in Suisun Bay, the delta region of the Sacramento River, and San Pablo Bay (Table 2). Suisun Bay is a transition zone between the saltwater ecosystem of San Francisco Bay and the freshwater ecosystems of the San Joaquin and Sacramento rivers. The tidal areas of Suisun Bay wetlands are characterized by cattails (*Typha augustifolia*) and other plants that tolerate frequent inundation by brackish water. Part of the Suisun Bay marsh was designated a California Wetland Preserve in 1984 (Lee et al. 1986). The Sacramento River delta forms a tidal, estuarine habitat with salinity ranging from 0.5 to 5 ppt (USFWS 1981). San Pablo Bay is the northern end of San Francisco Bay

Table 2. NOAA trust resource use of the Sacramento River, Suisun Bay, and San Pablo Bay (USFWS 1981).

Species	Sacramento River Delta	Suisun Bay	San Pablo Bay
INVERTEBRATES			
common littleneck clam			A
Dungeness crab			N,A
soft-shell clam			A
FISH			
American shad	M,R,N	M,R,N	M,R,N
chinook salmon	M,R,N	M,R,N	M,R,N
coho salmon			M,R
starry flounder			R
steelhead trout	R,M,N	R,M,N	R,A,M
striped bass	R,M,S,N,R	R,M,N,R	R,M
white sturgeon	R,M,R	R,M,N	R,M,N

M : migratory route; R: recreational fishing; A: adult concentration; N: nursery area; C: commercial fishery

San Pablo and Suisun Bay form a migration corridor and nursery area for anadromous fish that spawn in the Sacramento and San Joaquin rivers. NOAA trust invertebrates are found

in San Pablo Bay, and Dungeness crab use the bay as a nursery area (USFWS 1981). Striped bass is the only anadromous fish migrating through Suisun Bay which spawns in the river delta region. Chinook salmon, steelhead trout, white sturgeon, and American shad spawn in the upper reaches and tributaries of the Sacramento and San Joaquin rivers, with the largest populations found in the Sacramento River. All five anadromous species use the river delta region as nursery area. Extensive recreational fishing of these anadromous species occurs in the river delta region, Suisun Bay, and San Pablo Bay. Coho salmon and winter flounder are also recreationally fished in San Pablo Bay (USFWS 1981; Wolcott 1989).

Response Category: Federal Facility

Current Stage of Site Action: RI/FS has been completed.

EPA Site Manager

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NOAA Coastal Resource Coordinator

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References

EPA. 1983. Hazardous Waste Land Treatment. Washington, D.C.: Office of Water Regulations and Standards, Criteria and Standards Division. SW-874.

Lee et al. 1986. Remedial Investigation of Contaminant Mobility at Naval Weapons Station, Concord, California, Miscellaneous Paper EL-86-2. Vicksburg, Mississippi: U.S. Army Corps of Engineers Waterways Experiment Station.

O'Neil, L.J. 1988. Feasibility Study of Contamination Remediation at Naval Weapons Station, Concord, California; Vol II: Biological Assessment, Miscellaneous Paper EL-86-3. Vicksburg, Mississippi: U.S. Army Corps of Engineers Waterways Experiment Station.

USFWS. 1981. Pacific coast ecological inventory: Santa Rosa, California. Washington, D.C.: U.S. Fish and Wildlife Service. 38122-A1-EI-250.

Wolcott, R., fisheries biologist, National Marine Fisheries Service, NOAA, Santa Rosa, California, personal communication, March 15, 1989.