



Palos Verdes Shelf Superfund Site

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY • REGION 9 • MAY 2005

Site Update

The U.S. Environmental Protection Agency (U.S. EPA) is continuing its work on the Palos Verdes Shelf (PV Shelf) Superfund site. The purpose of this fact sheet is to provide you with an update of our current activities. The PV Shelf Superfund site is located off the coast of Los Angeles, California near the Palos Verdes Peninsula. The site consists of a large deposit of DDT and PCB contaminated sediments lying on the continental shelf and ocean floor. This contamination is a result of discharges from the Montrose Chemical Company and other industrial sources, which were released in the past to the ocean via the White Point sewer outfall. This contamination poses a risk to humans and marine life. Humans are at risk when they consume contaminated fish. Fish are exposed to the contamination by eating organisms that live in the contaminated sediments. Marine life also becomes contaminated via the food chain, starting with organisms that live in the sediments and continuing on to fish, marine mammals and birds.

The U.S. EPA has a two pronged approach to reducing risk from the site. The first prong is an "Institutional Controls" program (e.g., not an engineered solution) which is an immediate action to address significant human health risks associated with eating contaminated fish related to the PV Shelf Superfund site. The Institutional Controls (ICs) program consists of public education and outreach, fish monitoring, and enforcement of the existing fish regulations. The second prong is to look at the extent and risk of contamination and evaluate potential long term cleanup alternatives, through what is called a "Remedial Investigation/Feasibility Study (RI/FS)."

Remedial Investigations/Feasibility Study Update

In 2000, the U.S. EPA conducted a pilot capping study project over a small area of the PV Shelf Superfund site. The post-capping report identified additional information that was needed to evaluate the potential viability of capping. The U.S. EPA conducted four studies to address these data gaps and to learn more about the site. The studies are described below:

- 1) The *oceanographic study* focused on learning more about the tides and currents around the Palos Verdes Shelf. Equipment that measures currents, turbidity, temperature and other factors was anchored in the Shelf sediments, from February to July 2004. Data from this monitoring will provide the U.S. EPA with a better understanding of the oceanographic processes that may resuspend and transport bottom sediments on the Palos Verdes Shelf.
- 2) The *geotechnical study* consisted of collecting sediment cores and performing a sonar survey. The sediment cores were analyzed for erodibility and geotechnical properties, such as grain size, bulk density, and total organic carbon. These studies will provide information about the sediments' erosion potential and other sediment characteristics throughout the site.

- 3) The *large bioturbator study* collected samples at 19 stations in the sediments to study the extent of sediment mixing caused by ocean-dwelling creatures, including large species that could burrow through a sand cap and/or mix sediment from the deeper more contaminated areas, with the cleaner top sediment layer. The study will provide an assessment of the extent of sediment mixing that occurs on the Shelf due to these species.

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- 4) The *resuspension study* looked at one of the pilot caps placed in 2000. During Los Angeles County Sanitation District's routine monitoring (i.e., coring) along the edge of one of the pilot caps, it was noted that highly contaminated sediments that were buried prior to capping now appeared closer to the surface. This study took sediment cores across the cap to assess the extent to which cap placement may have displaced the upper layer of contaminated sediment and thereby decreased the depth at which the most contaminated layer is buried. This study addresses the effectiveness of the cap and capping method.

Remedial Investigation Report

These four studies were completed last summer (2004). The data analysis and reporting on the field studies are occurring now. The reports are expected to be completed this summer (2005). Information from these and earlier studies will be used to prepare the Remedial Investigation (RI) Report and Feasibility Study. The RI Report is due late 2005. It will discuss the nature and extent of contami-

nated sediments on the Palos Verdes Shelf and the oceanographic processes that affect the sediments. The report will also discuss levels of DDT and PCBs that birds, animals, and people could be exposed to through consumption of fish and other creatures found on the Palos Verdes Shelf.

Feasibility Study

The 2004 field studies and the RI Report will provide data necessary to prepare the Feasibility Study (FS). The FS will analyze cleanup strategies, including no action, for the Shelf and determine which ones are most feasible, i.e., most effective at reducing the human health and ecological risk posed by the site. The FS will also evaluate different cleanup alternatives using criteria as required by law.

Proposed Plan/Record of Decision

Once the Remedial Investigation and the Feasibility Study are completed, the U.S. EPA will prepare a Proposed Plan that presents the remedial alternatives, and identifies U.S. EPA's preferred alternative for the Palos Verdes Shelf Superfund site. The Proposed Plan will be announced to the public through fact sheets and public meetings. The

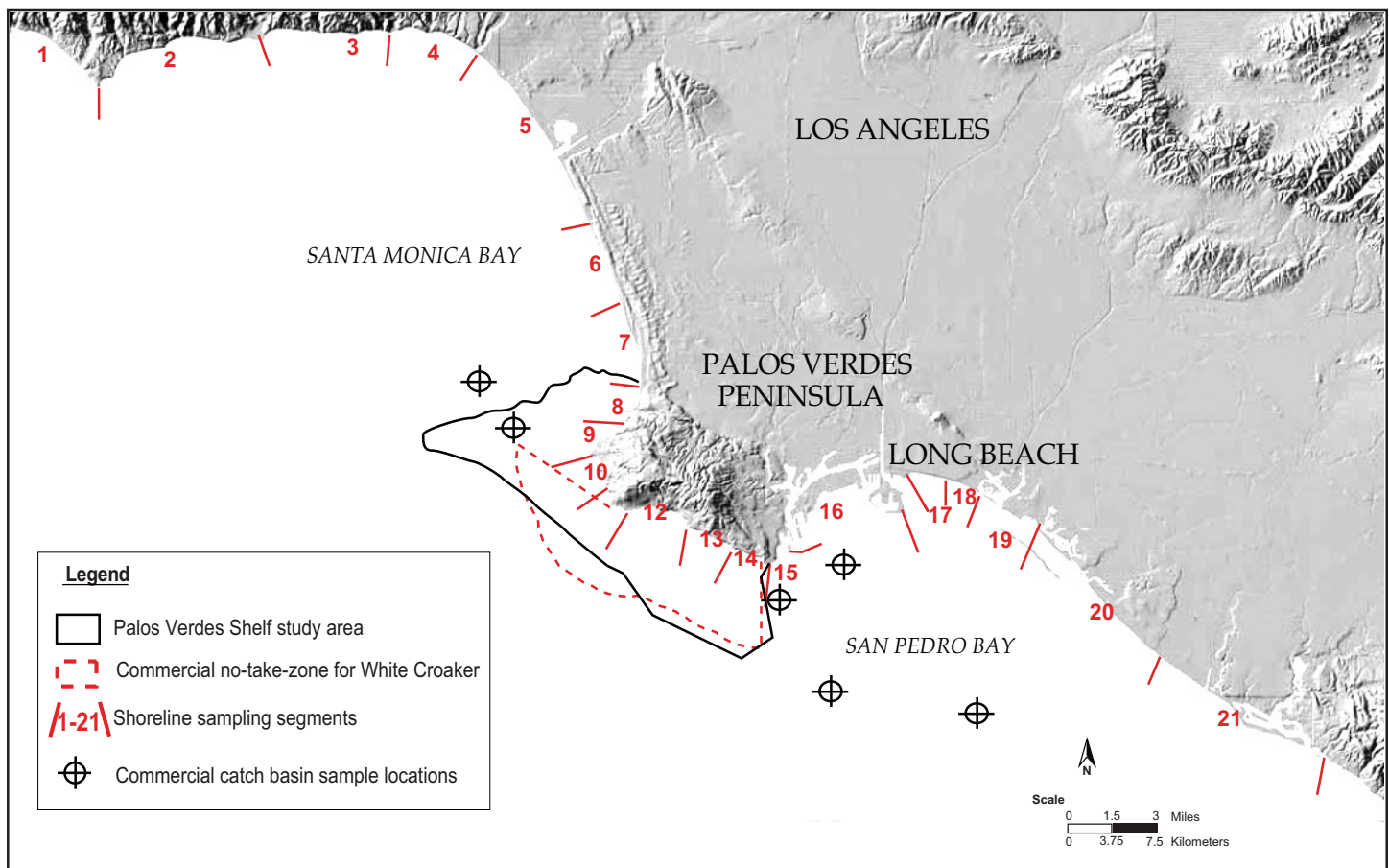


Figure 1: Location of Palos Verdes Shelf Superfund site, showing ocean fish sampling locations

U.S. EPA will seek public comment on the Proposed Plan and a response to comments (Responsiveness Summary) will be included with the Record of Decision.

Institutional Controls Program Update

The ICs program was put in place to address the significant human health risks associated with consumption of certain fish, in particular the white croaker, contaminated by the DDTs and PCBs in the sediment at the PV Shelf Superfund site (see Figure 1, site map). The ICs program consists of three components: public outreach and education, fish monitoring, and enforcement components. The ICs program relies heavily on partnerships with other federal, state and local agencies, and community based organizations. For example, the Montrose Settlement Restoration Program (MSRP) (www.darp.noaa.gov/southwest/montrose/index.html) works as a partner with the U.S. EPA. The MSRP was created as a result of the Natural Resource Trustee's settlement against the parties responsible for releasing DDTs and PCBs, which caused injury to natural resources in the Southern California marine environment at and/or near the Palos Verdes Shelf. Working closely with the U.S. EPA's ICs program, the MSRP has its own public participation process to address restoration of injured resources and lost fishing opportunities. Below is an update of the three components of the U.S. EPA's ICs program.

Ocean Fish Monitoring Update

The U.S. EPA and MSRP initiated a comprehensive ocean fish sampling effort in fall 2002 to assess current fish contamination levels in the Southern California coast area. The collected fish species were pacific barracuda, pacific (chub) mackerel, pacific sardine, yellowtail, opaleye, sargo, kelp (calico) bass, surfperches, rockfishes, California sheephead, barred sandbass, top smelt, halfmoon, California scorpionfish (sculpin), white seabass, black croaker, white croaker, yellowfin croaker, jacksmelt, California corbina, California halibut, shovelnose guitarfish and queenfish. These fish were caught at designated locations from Ventura to Dana Point, mostly in the Los Angeles area (see Figure 1, fish monitoring map). Approximately 1000 fish samples are currently being analyzed for DDTs, PCBs, dieldrin, chlordane and mercury. The fish data will undergo rigorous data quality assessment. We currently estimate that most of the data will be available in the early part of 2006.

The data collected will be used for the following purposes:

To update health advisories and commercial fishing bans: The U.S. EPA is working with appropriate California state agencies to examine the existing fish consumption advisories for Southern California marine waters and the ban of commercial fishing for white croaker near Palos Verdes Shelf. CalEPA-Office of Environmental Health Hazard Assessment (OEHHA) will use the collected data to update the existing sport fish consumption advisories and existing commercial catch ban area, as appropriate, for white croaker near the Palos Verdes Shelf.

To provide information for the RI/FS: The fish data will be used to help estimate what levels of DDTs and PCBs in sediment would not pose a significant health risk to human health and the environment.

To determine restoration of lost fishing opportunities: The Natural Resource Trustees, through the MSRP program, are investigating several potential approaches to increase the availability of wholesome fish to catch along the coast of Southern California. The collected fish data will provide information for the MSRP to plan and conduct its restoration projects.

To provide public information: The ICs program will update the existing public outreach material with information from the OEHHA's advisory update and white croaker commercial catch ban assessment.

Market Fish Monitoring

As part of Phase I of the market monitoring program, the U.S. EPA conducted sampling at local markets from July 2004 through January 2005. The purpose of the sampling was to evaluate whether contaminated white croakers from the PV Shelf Superfund site are reaching local consumers through markets. The U.S.EPA completed



Figure 2: A white croaker

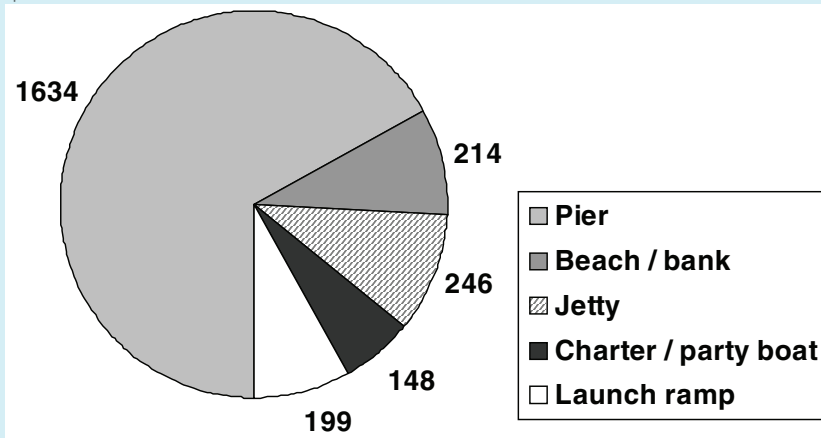


Figure 3: Locations of angler interviews

135 visits at 68 markets in the Los Angeles and Orange counties. The U.S. EPA was able to collect 30 white croakers at 6 markets, mostly on repeated visits (see Figure 2). White croakers were not found at the other 62 markets during the survey. The white croakers collected will be analyzed for DDTs and PCBs. The results will be made available to the public and used by the U.S. EPA for future planning of the ICs program activities. In particular, the data will be used for the commercial/market fish outreach, and commercial fish enforcement programs.

Angler Survey

The U.S.EPA and the MSRP jointly implemented a “two phased” angler survey in fall 2002 and summer 2003. In order for the U.S.EPA to implement an effective outreach program, updated knowledge of the communities and their fishing and fish consumption practices was critical. The focus of the study was on people who fish, for recreation or subsistence, in coastal waters from Point Dume in Los Angeles County to Dana Point in Orange County. The information from this study is being used to ensure that the targeted populations are effectively reached in a culturally appropriate manner. A total of 2,441 angler interviews were completed with 1,181 in Phase 1 and 1,260 in Phase 2. Interviews were conducted at piers, beach/banks jetties, private/ rental boats and party/charter boats (see Figure 3). Most anglers identified posted signs as a preferred way to get information about fish consumption health advisory.

Public Outreach and Education Program (Fish Contamination Education Collaborative {FCEC}) Update

Currently, the U.S. EPA is in its third year of full implementation of the public outreach and education program. The U.S. EPA created the FCEC, as a mechanism for drawing interested agencies, groups and community based organizations together to design and implement a community based outreach program

to address the health risks from eating contaminated fish related to the Palos Verdes Shelf Superfund site.

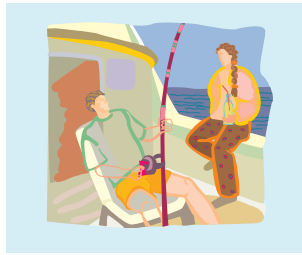
The cornerstone of the FCEC is the partnership between federal and state government agencies, local health departments, community based organizations, and other local institutions. The goal of the program is to conduct education for the most affected populations, so they can make informed decisions about fish contamination issues. There are four outreach program components: pier, commercial fish, media and general outreach. The outreach efforts have been conducted in English, Spanish, Cambodian, Chinese, Filipino, Korean, Vietnamese, Chamorro, Samoan, Marshallese and Tongan.



Figure 4: Outreach at Palos Verdes Pier

The FCEC has done the following:

Pier outreach: In 2003-2004, the pier outreach program completed outreach to nearly 19,000 anglers in the Los Angeles area. The outreach effort included training community people to go to the piers to inform anglers about the fish contamination history, fish advisories, identification of contaminated fish, fish they could safely eat and how much, and how the anglers could prepare the fish to reduce their risk of exposure (see Figure 4).



Commercial fish outreach: In 2004, eight community based organization partners conducted 334 outreach visits to 238 distinct markets and restaurants. The outreach effort consists of community people trained to go to markets and restaurants to inform the owners and/or managers about the PV Shelf Superfund site fish contamination, to only buy fish from licensed wholesalers, brokers or commercial fishermen, to know where the fish are caught, and to keep invoice records when fish is purchased.

General outreach: In 2004, 40,611 people were served

by the general outreach program. The majority of people were reached at 110 health or community fairs held throughout Los Angeles and Orange counties. Community based educators from the most affected communities were trained to create and conduct in-language health education around the PV Shelf Superfund site fish contamination issues in their communities. Local health departments also serve as partners in disseminating information.

Media outreach: The purpose of the media program is to increase the awareness about the health risks of eating white croaker and fish caught off the PV Shelf Superfund site area and to promote safe fish consumption practices. In 2004, based on media circulation estimates, the program reached more than 1 million individuals in Los Angeles and Orange counties.

The U.S. EPA is in the process of producing a video on the FCEC programs. The video is expected to be available in summer 2005. If you are interested in receiving a copy of the video, please contact Sharon Lin at (415) 972-3446.

In 2005, the U.S. EPA will continue to work closely with all partners to implement the FCEC programs. For details related to FCEC, please visit www.pvsfish.org

Information Site Repositories

The Palos Verdes Shelf Superfund site has information repositories at the following addresses. They house the Administrative Record file, which contains the information the U.S. EPA considered when selecting cleanup actions for the site.

San Pedro Public Library

931 South Gaffey Street
San Pedro, CA 90731
(310) 548-7779
Hours: Mon.-Thurs. 10 a.m.-8 p.m.,
Fri. & Sat. 10 a.m.-6 p.m., and Sun. 1 p.m.-5 p.m.

Redondo Beach Public Library

303 N. Pacific Coast Highway
Redondo Beach, CA 90277
(310) 318-0676, Press 3 for Adult Reference
Hours: Mon.-Thurs. 10 a.m.-8 p.m.,
Fri. 10 a.m.-5 p.m. & Sat. 9 a.m. to 5 p.m.

Palos Verdes Peninsula District Library

701 Silver Spur Road
Rolling Hills, CA 90274
(310) 377-9584, Press 4, dial 601 for Reference
Hours: Mon.-Thurs. 10a.m.-9 p.m., Fri. 10a.m.-6 p.m.
Sat. 10a.m.-5 p.m. & Sun. 1p.m.-5 p.m.

Superfund Record Center

95 Hawthorne Street, 4th Floor
San Francisco, CA 94105
(415) 536-2000
Hours: Mon.-Fri., 8:30 a.m. to 5:00 p.m.



Palos Verdes Shelf Superfund Site Update

U.S. EPA Contacts

For further site information on the Palos Verdes Shelf Superfund site, or if you did not receive this fact sheet in the mail and would like to be added to our mailing list, please contact:

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For additional site information, visit the U.S. EPA web pages at: <http://yosemite.epa.gov/r9/sfund/overview.nsf>
and <http://www.epa.gov/Region9/features/pvshelf/>



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