



California Scorpionfish
(David Witting, NOAA)



Bald eagle
(Lee Emery, USFWS)



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Program History

From the late 1940s to the early 1970s, millions of pounds of DDTs and PCBs were discharged from industrial sources through a wastewater outfall into the ocean near Los Angeles. Large quantities of these chemicals remain in the marine environment and continue to harm birds and impair fishing in the Southern California Bight (marine waters covering the mainland shelf from Point Conception to the Mexican border including the Channel Islands).

Throughout the U.S., DDT has caused Bald Eagles and Peregrine Falcons to lay thin-shelled eggs that desiccate or break during incubation. For many years, Bald Eagles reintroduced to Catalina Island had difficulty hatching their eggs without human assistance. In addition, some species of seabirds exhibited severe eggshell thinning. For certain species of fish contaminated with high levels of DDTs and PCBs near Los Angeles, the State of California has issued fish consumption advisories. The State has also banned commercial fishing for white croaker near the Palos Verdes Peninsula.

The State and Federal governments initiated action against Montrose Chemical Corporation and the other polluters responsible for the natural resource injuries. In December 2001, a final settlement was signed, ending ten years of litigation.

Cleanup and Restoration

Following the Superfund law, these funds are being used for two different kinds of activities:

1. The U.S. Environmental Protection Agency (EPA) and the California Department of Toxic Substances Control will use a share of the funding to reduce the exposure of people and wildlife to DDTs and PCBs. For example, these agencies are considering several remediation, or "cleanup," options, and are conducting additional efforts to prevent commercial catch of and reduce public consumption of contaminated fish.
2. The Natural Resource Trustees, through the Montrose Settlements Restoration Program (MSRP), was awarded approximately \$38 million to restore natural resources harmed by DDTs and PCBs.

Who are the Natural Resource Trustees?

The Natural Resource Trustees are a group of six federal and state resource agencies that together administer the Montrose Settlements Restoration Program. These agencies are:

- National Oceanic and Atmospheric Administration;
- National Park Service;
- U.S. Fish and Wildlife Service;
- California Department of Fish and Wildlife;
- California Department of Parks and Recreation; and
- California State Lands Commission.

MSRP Phase 1 restoration projects are in various stages of implementation. The following are highlights for Phase 1 projects.



Cassin's Auklet chick during banding.
(Laurie Harvey, CIES)

Scripps's Murrelet chicks in nest.
(Darrel Whitworth, CIES)

Restore Nesting Habitat for Seabirds

on the Channel Islands MSRP is restoring seabird nesting habitat on the Channel Islands, specifically on **Scorpion and Orizaba Rocks, Santa Barbara, Santa Cruz, and San Nicolas Islands**. Seabird restoration projects include non-native plant and animal removal, revegetation with native plants, and social attraction. Since 2007, MSRP with the help of partner organizations, planted **20,000+ native plants**, installed 50+ artificial nests, removed feral cats from San Nicolas Island, and completed several years of seabird and oceanographic monitoring surveys among the islands. In 2011 and 2012, biologists discovered Cassin's Auklet seabirds nesting in newly restored habitat on Santa Barbara Island. Seabird nesting habitat restoration work began on several Baja California Pacific Islands in 2013.

Restore Bald Eagles to the Channel Islands

MSRP implemented a feasibility study to determine whether the northern Channel Islands could support a self-sustaining population of Bald Eagles. The Institute for Wildlife Studies biologists successfully released 61 eagles on Santa Cruz Island and initiated a comprehensive monitoring program. The first natural hatching of a Bald Eagle in 2006 on Santa Cruz Island was a milestone for the study. Since the first natural hatching, biologists have continued to observe successful nesting among the Channel Island Bald Eagles currently breeding on four of eight Channel Islands. Approximately **60 eagles reside on the Channel Islands** and new pairs are expected to establish additional breeding territories across the Channel Islands.

Outreach Focus: MSRP Gets High-Tech

In recent years, MSRP has incorporated technology into public outreach activities to engage the public in important restoration projects taking place throughout Southern California. Visitors to local science centers and aquaria can experience California native wildlife in 3D at an MSRP kiosk. From your computer at home you can watch the underwater world of the wetlands in Huntington Beach on a live webcam. You can also view Bald Eagle chicks live in their nests on the Channel Islands Live Bald Eagle webcam broadcasting from Santa Cruz and Catalina Islands.

MSRP Fish Webcam

www.montroserestoration.noaa.gov/multimedia/fish-webcams/

Bald Eagle Webcam

www.montroserestoration.noaa.gov/multi-media/bald-eagle-webcam/

Interact with 3D Animations

www.montroserestoration.noaa.gov/multimedia/3d-animation/



MSRP PHASE 1 RESTORATION HIGHLIGHTS



Restore Recreational Fishing in Southern California

California MSRP is providing information to the public about fish contamination and improving access to a diversity of healthy fish species. MSRP, along with partners, created several popular outreach products including a “*Common Subsistence and Sport Fish of Southern California*” identification card with safe fishing tips and the “*What’s the Catch?*” comic book, both in three different languages, which are distributed to the public every year. Outreach mini-grants awarded to youth fishing organizations by MSRP are spreading the word about safe fishing and how to avoid “Do Not Consume” fish species. In the near future, MSRP hopes to build artificial reef modules along the Belmont Pier in Long Beach, California, to attract a greater diversity of fish species available for consumption.

Restore Fish Habitat in Southern California

MSRP focused on two major areas of fish habitat restoration for Phase 1, wetlands and Marine Protected Areas (MPA). Partial funding for Huntington Beach Wetlands was used to restore Talbert and Brookhurst Marshes in this complex and opened up approximately **140 acres of wetland habitat** to full-tidal flow. MSRP funding for Bolsa Chica Wetlands supported dredging of the ocean inlet to maintain full tidal exchange. MSRP funded the National Park Service and the Partnership for Interdisciplinary Studies of Coastal Oceans to collect data on the effective management of MPAs.

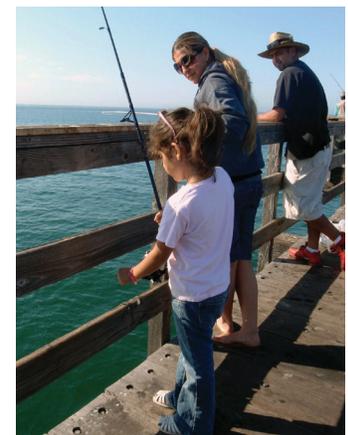
Monitor Peregrine Falcons on the Channel Islands

In 2007, a comprehensive Peregrine Falcon monitoring effort across all eight of the Channel Islands was completed. Biologists found 25 active territories and 16 falcon pairs that successfully hatched eggs to produce a total of 35 young. One of the highlights of the 2007 survey was the documentation of a successful breeding pair on Santa Barbara Island. This event was the first documented breeding on the island in over 50 years! MSRP is planning to conduct a second monitoring survey in 2013.



Aerial view of Huntington Beach Wetlands restoration. (Earthcam, NOAA)

Peregrine Falcon chicks in nest after banding. (Brian Latta, TBG)



Divers working in kelp forest. (David Witting, NOAA)

Young girl during youth fishing derby. (Gabrielle Dorr, NOAA)

MSRP projects from the Phase 2 Restoration Plan are described below.



Ashy Storm-Petrel using marine debris for nest.
(Darrell Whitworth, CIES)

Diver collecting urchins during removal project.
(David Witting, NOAA)

Restore Subtidal Reef and Kelp Forest

Habitat on the Palos Verdes Shelf MSRP is restoring critical fish habitat on the Palos Verdes Shelf. Kelp forests and rocky reefs are known to produce more fish than other habitat types and typically have fish with lower concentrations of DDTs and PCBs in their tissues. MSRP will build artificial reef modules in areas impacted by sediment erosion along the coast. Kelp forests in this area have been impacted by the loss of urchin predators which resulted in an increase in urchins essentially wiping out kelp forests. For this project, MSRP will partner with commercial urchin divers and local non-profit organizations to perform urchin barren control allowing for natural kelp recruitment and growth. The kelp forest restoration project began in 2012.

Monitor Bald Eagles on the Channel

Islands MSRP is monitoring Bald Eagles on the Channel Islands to determine if a self-sustaining population is feasible. The monitoring program continued from Phase 1 will focus on breeding activities, investigation of diet, survival and contaminant analysis. The program has shifted from extensive year-round monitoring to a more directed focus of understanding the eagle's annual population status.

Monitor the Recovery of Peregrine Falcons on the Channel Islands

MSRP will conduct two comprehensive monitoring efforts on the Channel Islands during Phase 2. Biologists will monitor active Peregrine Falcon territories to determine their reproductive success and levels of DDT will be measured from egg and blood samples.

Restore Seabirds to Santa Barbara Island and Scorpion Rock

MSRP will continue and expand the restoration work on Santa Barbara Island and Scorpion Rock from Phase 1. On Santa Barbara Island, biologists will expand existing restoration sites and add new sites. MSRP will continue with removal of non-native plants on Scorpion Rock until native plants are fully established and outcompete non-native plants. Biologists will also install nest boxes and social attraction devices on Santa Barbara Island and continue monitoring of seabirds at both areas.

Restore Ashy Storm-Petrels on the Channel Islands

In Phase 2, biologists will continue work on Orizaba Rock projects but also may expand to include restoration projects throughout the Channel Islands as appropriate. Activities may include improvement of nesting habitat, social attraction, installation of artificial nesting boxes, monitoring, and performing contaminant analysis on eggs.

Reduce Seabird Disturbance on the Channel Islands

This project will build upon on-going seabird disturbance reduction efforts that have been developed by the Seabird Protection Network of California. Beginning in 2013, the focus of this project will be on developing and enforcing appropriate seabird colony protective measures, educating the public and specific user groups about protective measures, and evaluating program effectiveness for integration into statewide seabird management programs.