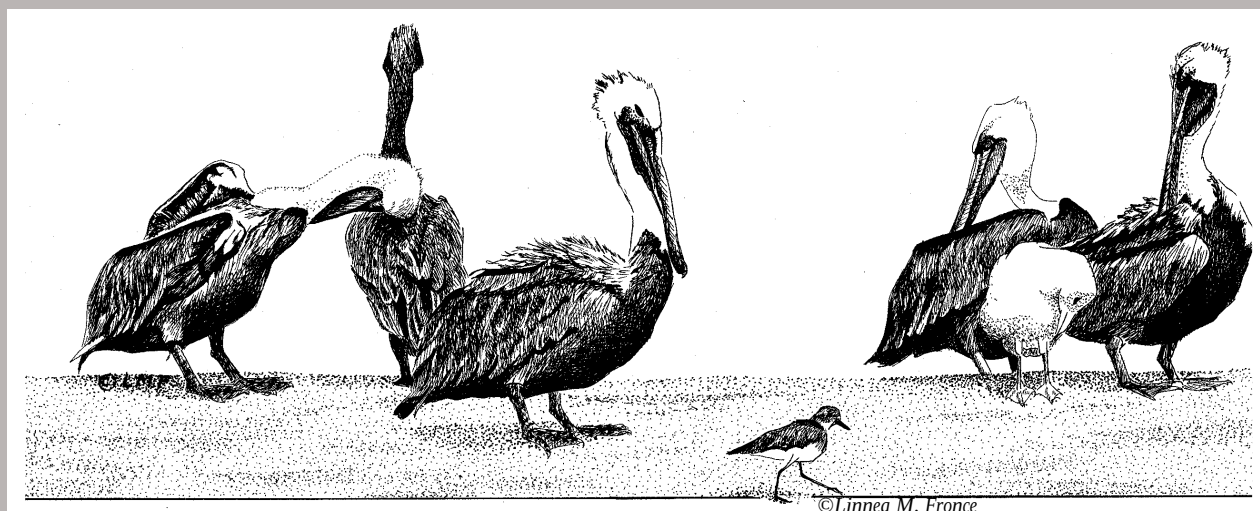
FINAL

Restoration Plan & Environmental Assessment

For Seabirds Injured by the American Trader Oil Spill



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American Trader Trustee Council

California Department of Fish and Game
United States Fish and Wildlife Service
National Oceanic and Atmospheric Administration

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I. Acknowledgments

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Copies may be requested from Office of Spill Prevention and Response, California Department of Fish and Game, 1416 Ninth Street, Sacramento, CA 95814.

III. Acronyms

BP - British Petroleum
CCR - Crescent Coastal Research
CDFG - California Department of Fish and Game
CEQA - California Environmental Quality Act
CFR - Code of Federal Regulations
CI - Confidence Interval
CINP - Channel Islands National Park
CWA - Clean Water Act
CZMA - Coastal Zone Management Act
DOI - Department of Interior
EA - Environmental Assessment
EFH - Essential Fish Habitat
EIR - Environmental Impact Report
EIS - Environmental Impact Statement
EO - Executive Order
EPA - Environmental Protection Agency
ESA - Endangered Species Act
FONSI - Finding of No Significant Impact
ICEG - Island Conservation and Ecology Group
INE-SEMARNAP - Instituto Nacional de Ecologica
NCP - National Contingency Plan
NEPA - National Environmental Protection Act
NMFS - National Marine Fisheries Service
NOAA - National Oceanic and Atmospheric Administration
NPS - National Park Service
OPA - Oil Pollution Act
OREHP - Ocean Resources Enhancement and Hatchery Program
OSPR - Office of Spill Prevention and Response
RP - Responsible Party
SCB - Southern California Bight
TPH - Total Petroleum Hydrocarbons
UCD - University of California, Davis
USC - University of Southern California
USFWS - U.S. Fish and Wildlife Service

FINAL RESTORATION PLAN AND ENVIRONMENTAL ASSESSMENT FOR SEABIRDS INJURED BY THE *AMERICAN TRADER* OIL SPILL

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FINAL RESTORATION PLAN AND ENVIRONMENTAL ASSESSMENT FOR SEABIRDS INJURED BY THE *AMERICAN TRADER* OIL SPILL

1 Introduction, Purpose of And Need For Restoration

1.1 Purpose

This document provides summarized information regarding the affected environment, natural resource injury determinations and seabird-related natural resource restoration projects resulting from the February 7, 1990 T/V *American Trader* oil spill onto the waters and coastline in the vicinity of Huntington Beach, California. The purpose and need of the actions described in this document are to compensate for seabird-related natural resources injuries resulting from the American Trader oil spill by undertaking actions that will either speed up the recovery of injured resources (when compared with natural recovery) or compensate for the losses incurred during the spill and during the recovery period following the spill. This document provides the trustee agencies's plan for restoration and summarizes the public review, comment and input which occurred during the development of the draft and final restoration strategies. This document also serves, in part, as the trustee agencies' compliance with the National Environmental Policy Act and the California Environmental Quality Act. Additional environmental compliance may be required prior to actual implementation of the proposed projects described herein.

1.2 Overview

At 4:43 p.m. on February 7, 1990, the U.S. Coast Guard received the report that the single-hull tank vessel *American Trader* had run aground approximately 7200 feet offshore of the Golden West terminal at Huntington Beach, California. The initial volume of oil released was estimated to be 252,000 gallons. The estimate was eventually increased to be 416,598 gallons of crude oil. Two holes were punctured in the starboard cargo tank by the vessel's own anchor due to a combination of ocean swells and inadequate water depth during the attempted mooring at the sea berth. At the time, the vessel was lightering a cargo of Alaska North Slope crude oil from the *Keystone Canyon,* a very large crude carrier anchored in Long Beach, to several locations along the southern California coast including the Golden West terminal at Huntington Beach.

By February 9, the crude oil remaining in the damaged tank and the mid-body tanks (4,704,000 gallons) was lightered by personnel from the U.S. Coast Guard Pacific Strike Team and the responsible party to reduce the chance of additional spills and to decrease the draft of the vessel. The vessel was subsequently moved to Long Beach Harbor to off-load the remaining 19,740,000 gallons of crude oil and then to San Francisco for dry-docking and repair.

The weather and sea conditions moved the oil slick generally into the nearshore area during the day and offshore during the night. Small amounts of oil came onshore by February 8, 1990 and by February 12 heavy concentrations of oil were found ashore in the Huntington Beach area. Table 1 shows the estimated size of the oil slick as determined from NOAA's daily aerial overflights and Figure 1 shows the overall cumulative extent of the spill area. The maximum spread of the slick was on the morning of February 12, 1990, when it covered 159 km^2 from Long Beach Harbor south to the mouth of the Santa Ana River. A storm with 35 knot winds on February 13, 1990, pushed most of the remaining oil ashore along 14 miles of shoreline from Long Beach harbor to Newport Beach. Heavy oil sludge and mousse (emulsified oil) accumulated up to two inches thick in places. Most of this area had received only light to moderate oiling in the previous five day period. By February 14, no free-floating oil was observed from Bolsa Chica to Newport Beach, except at the mouth of the Santa Ana River and streaming off the groins and jetties at Newport Beach. On February 15, 1990, oil was observed offshore of the area from Huntington Beach to Laguna Beach, at the Santa Ana River mouth, and in 1 mile ribbons of foamy mousse, tar balls and sheens south of Huntington Beach. On February 16, southerly winds blew this

Table 1. Daily estimates of surface area covered by oil slicks during TV *American Trader* oil spill

Date	Square Miles	Square Kilometers
February 8, 1990	14	36
February 9, 1990	37	95
February 10, 1990	59	152
February 11, 1990	43	111
February 12, 1990	61	159
February 13, 1990	12	30
February 14, 1990	24	63
February 15, 1990		
February 16, 1990	17	45

Huntington Beach to Laguna Beach, at the Santa Ana River mouth, and in 1 mile ribbons of foamy mousse, tar balls and sheens south of Huntington Beach. On February 16, southerly winds blew this material ashore and little oil was observed floating on the water. There were no more reports of floating oil after February 16, 1990.

Alaska North Slope Crude oil is a medium weight oil which tended to emulsify quickly, forming a stable emulsion or mousse. This rate of emulsification was accelerated by wind mixing during the first days of the spill. It was likely that 15 to 20 percent of the spilled oil evaporated in the first 24 hours. The weathered oil then began to form a mousse which contained up to 75 percent water and substantially increased the volume of the slick. As the mousse continued to be exposed to weather and wave action it was broken into smaller units resulting in the ribbons of mousse and finally small tar balls. Response activities were mostly concluded on February 17. No Dispersant, bioremediation or in-situ burning were incorporated in the

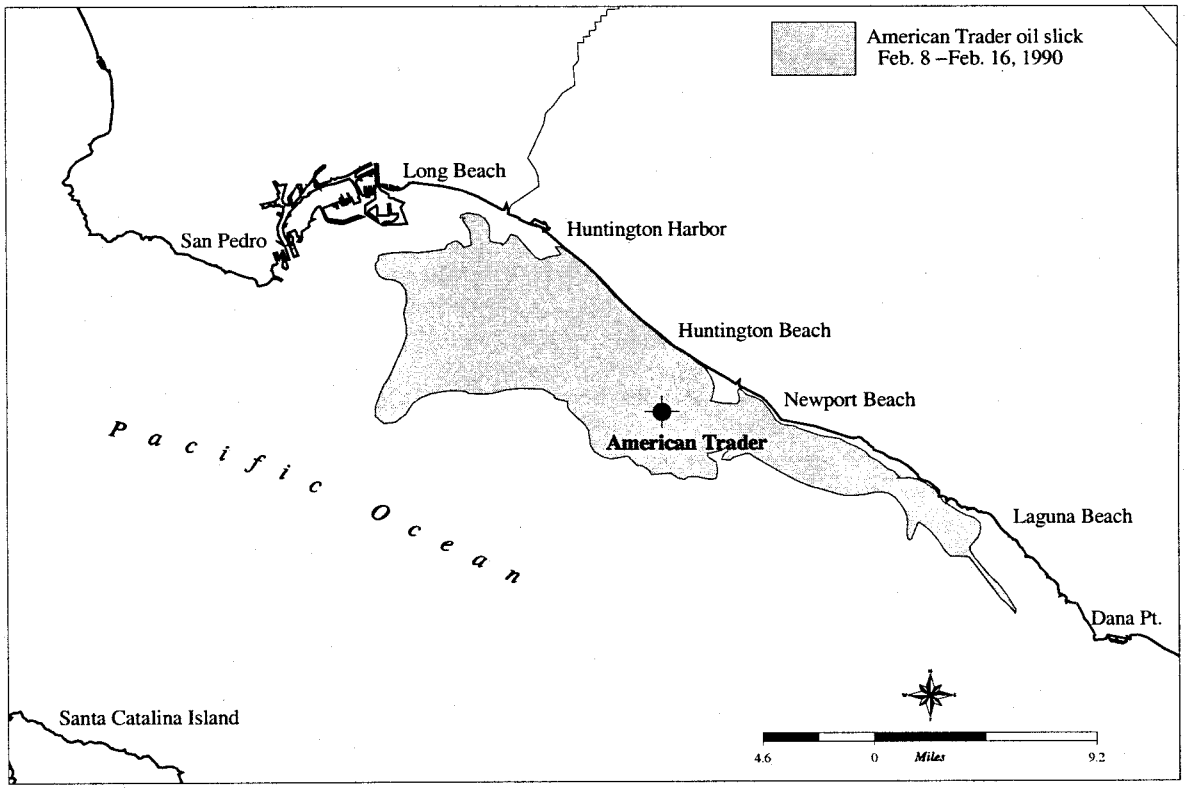

Figure 1. Overall cumulative extent of the oil spill area near Huntington Beach, California

activities. Booming of the sensitive wetlands of the Bolsa Chica Ecological Reserve, Newport Bay and the mouth of the Santa Ana River was completed by February 8. Double harbor booms, small skimmers, and sorbent boom were variously deployed at Anaheim Bay, Newport Bay, and across the mouth of the Santa Ana River. Earthen booms were constructed across the three channels of the Santa Ana River to keep oil from entering sensitive wetlands since currents and tidal action made exclusionary booms ineffective. Heavy rain runoff washed away all three berms on February 17 and deposited debris from upriver onto Huntington Beach. The berms were repaired before any oil contaminated the wetlands. The berms were effective until February 25 when five to ten gallons of oil were washed over the berm into the Huntington Beach wetlands by high tides and surf. This oil was removed with sorbent pads with minimal damage to the wetland.

Open-water recovery was done with fifteen skimming vessels and twenty-five support/boom tow vessels. The extensive open-water recovery effort resulted in the recovery of 588,000 gallons of emulsified oil and water estimated to be over 25% of the spilled oil. Offshore skimming operations were concluded by February 17, as most of the oil had beached by that time.

Beach cleanup methods included manually deployed sorbent booms, sorbent pads, vacuum trucks, hot water flushing, spraying and manual removal. Sorbent pompoms were strung together and pulled through the surf zone to collect oil before it contacted the beaches. The exposed rocky shorelines, exposed bluffs, and riprap in the area of the Bolsa Chica Bluffs, Newport Finger Piers, and Santa Ana jetties were heavily oiled by mousse (emulsified oil) and oil sludge during the February 13 storm. Most of the cleaning took place during February and March. Most of the beaches were cleaned and opened to the public by March 2. All of the shoreline cleaning was completed by April 3.

1.3 Natural Resource Trustees and Authorities

Both federal and State of California laws establish liability for natural resource damages to compensate the public for the injury, destruction, and loss of such resources and/or their services resulting from oil spills.

This RP/EA has been prepared jointly by the U.S. Department of the Interior (DOI),represented by the U.S. Fish and Wildlife Service (USFWS); the U.S. Department of Commerce, represented by the National Oceanic and Atmospheric Administration (NOAA); and the State of California, represented by the Department of Fish and Game (CDFG). Collectively these agencies are referred to as the "Trustees" or "Natural Resource Trustees."

At the time of the *American Trader* oil spill in early 1990, these agencies were acting as natural resource Trustees pursuant to the Federal Water Pollution Control Act (Clean Water Act), 33 U.S.C. 1321, Executive Order (EO) 12580, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR 300.600, for natural resources injured by the oil spill. The Oil Pollution Act of 1990 (OPA), 33 U.S.C. 2701 *et seq.*, and Executive Order 12777 have since replaced the natural resource provisions in the Clean Water Act and EO 12580 for oil spills. As a designated Trustee, each agency is authorized to act on behalf of the public under state and/or federal law to assess and recover natural resource damages and to plan and implement actions to restore natural resources and resource services injured or lost as the result of a discharge of oil. Although not effective at the time of the *American Trader* oil spill, the Trustees are following guidance concerning restoration planning and implementation contained in OPA and the natural resource damage assessment regulations promulgated pursuant to OPA. The OPA regulations provide trustees the option of utilizing the procedures of that rule for spills occurring before the effective date of the OPA regulations. 61 Fed. Reg. 444 (Jan. 5, 1996).

In addition to the aforementioned federal authority, the State of California acts pursuant to its Constitution and several State statutes, including but not limited to, Const. Art.16, § 9 and California Harbors and Navigation Code §§ 293 and 294.

1.4 Settlement of Natural Resource Claims

The United States and the State of California reached a settlement with three of the defendants (BP America, Inc., BP Oil Supply Company and BP Oil Shipping Company, USA) in 1994. The terms of the settlement are set forth in a Federal Consent Decree (see Appendix B) and a parallel State Settlement Agreement. Due to challenges to the settlement from non-settling defendants, the settlement dollars were not available until 1998. The settlement covered the natural resource ecological damage claim and other items including:

- $2,484,566 plus interest ($487,174.15) to the Trustees to address bird-related natural resource injuries;
- $400,000 plus interest to the State of California for a white sea bass fish hatchery program at Agua Hedionda Lagoon (see Appendix D for a description of this project);
- $300,000 plus interest for ocean and coastal pollution mitigation and monitoring projects to be administered by the Southern California Coastal Water Research Project;
- $79,680 plus interest for revenue losses incurred by the California Department of Parks; and
- $630,000 plus interest to state agencies and local governments for response costs.

This document only covers those funds provided to address bird-related natural resource injuries. For the federal Trustees, this is the only federal action associated with the settlement funds and, thus, covered under this NEPA review.

Also, this plan does not cover the recreational component related to lost human uses of natural resources which resulted in over $16 million provided to the state and local governments for restoration actions (See Appendix D, Part 2).

1.5 Public Participation

Public review of the Draft Restoration Plan and Environmental Assessment was an integral component of the restoration planning process. Through the 45 day public review process, the Trustees received public comment on the suite of projects which were being considered to restore marine bird-related injuries and suggestions on additional restoration projects. All comments and suggestions were seriously considered and evaluated against the criteria stated in this document. Many of the comments and suggestions were incorporated into the Final Restoration Plan and Environmental Assessment. Those comments and restoration project suggestions that were not incorporated into the Final Restoration Plan were determined to be inconsistent with the restoration screening criteria stated in this document (see Section 4.2).

A public meeting was held on the Draft Restoration Plan in Huntington Beach, California on June 29, 2000. Comments received during the public meeting were also considered during the finalization the Restoration Plan and Environmental Assessment.

Appendix E includes the written comments received and a summary of the verbal comments received at the public meeting and the Trustee Council's response to comments.

2 Affected Environment

2.1 Physical and Biological Environment

(excerpted from Dailey 1993, Baird 1993 and Cross 1993)

The Southern California Bight region where the oil spill occurred includes a rich and varied marine and coastal ecosystem. This region includes the offshore waters from Point Conception, California, southward to the vicinity of Cabo San Quintín, Baja California Norte, Mexico, and bounded to the west by the California current. The mainland consists of a series of rocky shores, sandy beaches and

embayments of different types. Numerous harbors, marinas, jetties and piers have modified the coastline throughout the region. Eight major offshore islands, the Channel Islands, are distributed along the edge of the continental borderland of the Southern California Bight and provide additional important habitats for marine organisms. They also serve as the breeding grounds for marine birds and as protected shores for marine mammals. Since the Channel Islands are located some distance from the heavily populated mainland of southern California, some of the areas are less disturbed than other marine habitats in the southern California area. Distributed between the mainland and the Channel Islands and beyond are a series of submarine canyons, ridges, basins and seamounts that provide unique habitats in the Southern California Bight.

The Southern California Bight constitutes a unique physical and biological environment. A dramatic change in angle of the California coastline, coupled with the morphology of the southern California offshore coastal area results in circulation patterns and forcing mechanisms that differ significantly from other locations on the west coast of the U.S. The complex bathymetry offers a variety of habitats for fishes. The basins provide habitats for a significant number of mid-water and benthic deep sea fishes very near the coast. Soft substrates, such as bays and estuaries, man-made harbors, exposed sandy beaches, shelves and slopes are abundant along the mainland and the offshore islands. Hard substrates, such as the rocky intertidal, shallow subtidal reefs, deep rock reefs, and kelp beds, are common along the mainland and abundant around the offshore islands.

The region is subject to short-term and long-term temperature fluctuations, depending upon the strengths or weaknesses of the ocean current system. The interplay of the physiography, current systems and anthropogenic inputs also influences the richness of the marine life in much of the region. Primary production depends upon nutrient sources such as storm runoff, aerial fallout, seasonal upwelling and anthropogenic inputs coupled with long periods of sunshine. Seventy percent of the known algal species from California occur in the Southern California Bight. Kelp beds form a unique shallow water community which is not only important economically and recreationally, but also provides a haven for a complex array of additional algal species, invertebrates and fish. Over 5000 species of benthic marine invertebrates exist in the Southern California Bight. They inhabit all areas of the sea floor, from the high intertidal splash zone to the bottoms of the offshore basins (over 2500 m deep).

Many vertebrates, including fish, birds and mammals, also are common throughout the region, particularly in the neritic or nearshore ocean zone. Of the 144 families and 554 species of California coastal marine fishes, 129 families and 481 species occur in the Southern California Bight. It is the southern terminus of the ranges of many northern species and the northern terminus of many southern species. Northward incursions of tropical fishes into the Southern California Bight during abnormally warm water years and southerly incursions of northern fishes during cool years are common and may alter the composition of fish assemblages for several years thereafter. The sandy beaches of Southern California serve as the major spawning grounds for grunion (*Leuresthes tenuis*), which wriggle onto beaches during certain full moons to mate and lay eggs. Rockfish (*Sebastes* spp.), white seabass (*Atractoscion nobilis*), lingcod (*Ophiodon elongatus*) and various perch species are common to kelp forests, while white croaker (*Genyonemus lineatus*), halibut (*Paralichthys californicus*) and other flatfishes often inhabit muddy and sandy bottoms. Shorebirds, such as sandpipers, godwits and curlews frequent sandy shores, where they feed on invertebrates buried beneath the sand.

Seabirds and marine mammals are among the top consumers in the Southern California Bight. Several mammal species depend on nearshore ocean habitats for forage and breeding grounds. Harbor seals and sea lions are among the pinnipeds commonly seen along the coast of southern California. San Miguel Island, located in the Channel Islands National Marine Sanctuary, is estimated to support the largest concentration of pinnipeds in the world. The California sea otter, a threatened species, occurs locally along the central coast of California, usually in association with kelp forests and sea urchin colonies. Once numbering less than 100, the sea otter population in California has risen to more than 1500 individuals. Whales and dolphins swim into nearshore waters, but most of these species are more

Table 2. Primary species of marine birds in the SCB.

Species
*Pacific Loon (*Gavia pacifica*)
*Western Grebes (*Aechmophorus occidentalis)*
Clark's Grebes (*A. clarki*)
*Surf Scoter (*Melanitta perspicillata*)
Black-footed Albatross (*Diomeda nigripes*)
**Pink-footed Shearwater (*Puffinus creatopus*)
*Sooty Shearwater (*Puffinus griseus*)
**Black-vented Shearwater (*P. opisthomelas*)
*Northern Fulmar (*Fulmarus glacialis*)
Leach's Storm-petrel (*Oceanodroma leucorhoa*)
*Black Storm-petrel (*O. melania*)
Ashy Storm-petrel (*O. homochroa*)
Least Storm-petrel (*O. leucorhoa*)
*Brown Pelican (*Pelecanus occidentalis*)
*Brandt's Cormorant (*Phalacrocorax penicillatus*)
*Double Crested Cormorant (*P. auritus*)
*Pelagic Cormorant (*P. pelagicus*)
*Red Phalaropes (*Phalaropus fulicaria)*
Red-necked Phalaropes *(P. lobatus*)
Parasitic Jaeger (*Stercorarius parasiticus)*
Pomarine Jaeger *(S. pomarinus*)
*Bonaparte's Gull (*Larus philadelphia*)
*Heermann's Gull (*L. heermanni*)
*Ring-billed Gull (*L. delawarensis*)
*California Gull (*L. californicus*)
Herring Gull (*L. argentatus*)
*Western Gull (*L. occidentalis*)
*Black-legged Kittiwake (*Rissa tridactyla*)
Royal Tern (*Sterna maxima*)
Elegant Tern (*S. elegans*)
Common Tern (*S. hirundo)*
Arctic Terns *(S. paradisaea*)
Forster's Tern (*S. forsteri*)
*Caspian Tern (*S. caspia*)
Least Tern (*S. antillarum browni*)
*Black Skimmer (*Rynchops niger*)
*Cassin's Auklet (*Ptychoramphus aleuticus*)
*Rhinoceros Auklet (*Cerorhinca monocerata*)
Pigeon Guillemot (*Cepphus columba*)
**Xantus's Murrelet (*Synthliboramphus hypoleucus*)
*Common Murre (*Uria aalge*)

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*oiled by spill
**likely oiled by spill but not identified to species

common in deeper, offshore waters. Gray whales are present during the southward (fall) and northward (early spring) migrations.

Because ocean productivity determines the abundance and distribution of seabirds, many seabirds can be found over water that overlies continental shelves where cold, rich, deep water upwells, as well as in areas of convergence and mixing. Seabirds are generally planktivores (plankton feeders) or piscivores (fish eaters). Because of the mixing of different types of waters, the Southern California Bight harbors a variety of prey and thus a variety of marine birds.

A great diversity of birds typical of both cool northern and warm subtropical waters can be found in this region (Table 2). Seabirds (pelicans, cormorants, scoters, loons, grebes, gulls, terns, murrelets, murres, auklets, petrels, shearwaters, fulmars) contribute the greatest avifaunal biomass in the Southern California Bight. Seabirds use this area year-round, and some of the migrants can constitute the largest biomass of seabirds at any one instant in the Southern California Bight. Seabird densities can be as great as 70 birds per square kilometer for migrants such as phalaropes and up to 1000 birds per square mile for breeders near their colonies in the case of Cassin's Auklets. Individual seabird populations number in the thousands to tens of thousands of individuals. Seventeen species of seabirds breed in the Southern California Bight. Breeding habitat for seabirds, except for terns and skimmers, is located entirely in the Channel Islands. Birds shown in Figure 2 were breeding in the Southern California Bight during the period of the spill and spill clean-up.

Important species in the Southern California Bight due to regional or global scarcity include:

(a) the Brown Pelican because of past effects of contaminants on reproduction, oil pollution, overfishing of their prey in Mexican waters, impacts of human disturbance on breeding success, and disturbance at breeding colonies from non native species;

(b) California Least Tern (not present during the spill period) and Light Footed Clapper Rail due to regional habitat destruction;

(c) Xantus's Murrelets and Ashy Storm-Petrels due to at sea threats from contaminants, oil pollution and habitat degradation, and disturbance at breeding grounds from predators (i.e. rats, mice, owls, and other birds); and

(d) Cassin's Auklets which mainly nest at three areas in California including San Miguel Island

due to at sea threats from contaminants, oil pollution and habitat degradation, and disturbance at breeding grounds from predators (i.e. rats, mice, owls, and other birds); and
(d) Cassin's Auklets which mainly nest at three areas in California including San Miguel Island in the Southern California Bight with over 20,000 birds.

Rhinoceros Auklets are also an important species because most of their eastern Pacific nesting population is located off the coast of California in February and March, composing one of the most important elements of the wintering fauna south of Monterey (Briggs *et al.* 1987). Because the entire or nearly entire California breeding population of Black Storm-Petrels, Xantus's Murrelets and Brown Pelicans nest in the Channel Islands, their populations are of particular concern because each species' California breeding population could be exterminated or severely affected by environmental perturbations such as oil spills.

The Xantus's Murrelet (California Species of Special Concern) is one of the rarest seabirds in the world having an estimated population of fewer than 10,000 breeding individuals with at least 3,500 of those in the Southern California Bight (Carter *et al.* 1992 and Drost and Lewis 1995). It is also a rare seabird of the Southern California Bight (Nur *et al.* 1999). Unitt (1984) reports winter records for Xantus's Murrelets in the Catalina Channel, however, no systematic winter surveys have been conducted in this area. The threat of oil pollution in the Southern California Bight has risen substantially since the early 1960s because of increased oil tanker traffic into Los Angeles harbor (Carter *et al.* 2000). It is a small, burrow nesting seabird. This small alcid is also vulnerable at its breeding grounds in the Southern California Bight. Endemic (i.e. mice) and introduced predators (i.e. rats) are known to prey on murrelet eggs (McChesney and Tershy 1998).

Another small, burrow nesting seabird is the Ashy Storm-Petrel (California Species of Special Concern). They are endemic to California and most of the world population breeds in the Channel Islands (Carter *et al.* 1992 and Ainley 1995). It is a rare seabird in the Southern California Bight (Nur *et al.* 1999). Carter, personal communication; D. Welsh, personal communication). They are as vulnerable to oil pollution as Xantus's Murrelets (see previous paragraph). Other threats to their survival include predation of eggs by introduced rats on their nesting grounds.

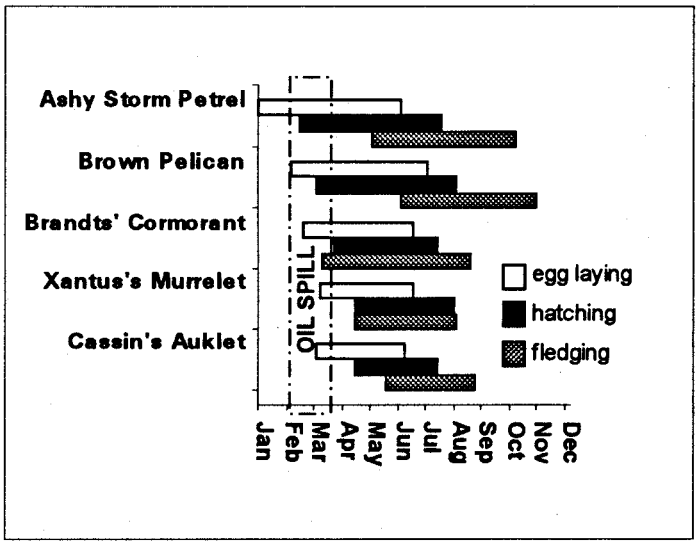

Figure 2. Birds breeding in the SCB during spill period.

The introduction of exotic animals (predators such as cats and rats, as well as habitat destroyers such as rabbits and goats) have seriously decreased many breeding seabird populations. Rats, which have been introduced to the Channel Islands, are known to prey on small burrow nesting seabirds (Carter *et al.* 2000); as well as large ground nesting seabirds(Atkinson 1985). Overfishing continues to affect the seabird prey populations, thus lowering breeding success and population numbers. Entanglement in fishing nets is also thought to be of concern.

2.2 Federally Endangered and Threatened Species

Endangered and threatened species that occur in the spill area or the area affected by proposed restoration activities include the California Brown Pelican, Western Snowy Plover (*Charadrius alexandrinus nivosus*), California Least Tern, southern California steelhead (*Oncorhynchus mykiss*), white abalone (*Haliotis sorenseni*), southern sea otter (*Enhydra lutris nereis*), blue whale, (*Balaenoptera musculus)*, fin whale (*Balaenoptera physalus*), gray whale (*Eschrichtius robustus*) and humpback whale (*Megaptera novaeangliae*). With the exception of the Brown Pelican and the gray whale, most of these species were absent from the spill area because of migratory patterns (California Least Tern) or lapses in local distribution (southern California steelhead, southern sea otter) or in low numbers because of low overall population density or regional scarcity (Western Snowy Plover, white abalone, blue whale, fin whale and humpback whale). No gray whales are known to have been injured. Brown Pelicans are discussed in Section 2.3 below.

2.3 Federal Endangered and Threatened Species Known to be Injured by the Spill - California Brown Pelican

The California Brown Pelican, which is targeted to benefit from restoration actions as part of this plan, is a federally and state listed endangered species. It was listed as an endangered species under the federal Endangered Species Act in 1970 and by the California Fish and Game Commission in 1971. The listing was because of decreased population numbers and extensive reproductive failures resulting from the effects of DDT compounds in the late 1960s and early 1970s (see Anderson *et al.* 1975, Gress and Anderson 1983, Gress 1995). The California Brown Pelican is currently under consideration for reclassification due to increases in the breeding population in the Southern California Bight and the near-achievement of recovery goals.

The California Brown Pelican is one of the five or six recognized subspecies of Brown Pelican (one of these is considered by many to be a separate species) occurring largely in tropical and subtropical waters of the Atlantic and Pacific oceans (Palmer 1962, Johnsgard 1993). The species is a large bird weighing up to 8 pounds with a wing span of up to 7 feet; sexes are similar, but males are usually larger and have longer bills (however, size differences are generally difficult to discern). The red gular pouch found on adults during courtship and early stages of nesting is common only in *P. o. californicus* (see Schreiber *et al.* 1989).

Four somewhat geographically distinct breeding populations of the California Brown Pelican occur along the Pacific coast of North America (Gress and Anderson 1983). The breeding range extends from the Channel Islands located off the California coast, south to Isla Ixtapa in Guerrero, Mexico. The non-breeding range can extend from Vancouver, British Columbia, south to El Salvador. Approximately 90 percent of *P. o. californicus* breeds on islands in the Gulf of California, along the coast of mainland Mexico, and offshore the Pacific coast of Baja California (Anderson and Anderson 1976, Anderson 1983, Gress and Anderson 1983).

California Brown Pelicans are colonial nesters and require nesting grounds free from human disturbance, free from mammalian predators, and close to adequate food supplies (see Gress and Anderson 1983). Nest sites for the northernmost populations (in the Southern California Bight) are generally located on steep, rocky slopes and bluff edges where large, bulky stick nests are usually built on the ground or in low brush. The southernmost Mexican mainland population (along the coasts of Sinaloa and Nayarit) may nest in mangrove trees, while in the Gulf of California and along the Pacific side of Baja California, pelicans generally nest on arid islands and build comparatively sparse nests because nesting material is less available (Gress and Anderson 1983).

Until recent years, California Brown Pelicans breeding in the Southern California Bight have depended almost entirely on the Northern Anchovy (*Engraulis mordax*) as its primary food source (Anderson *et al.* 1980, 1982, Anderson and Gress 1984). From 1972 to 1979, anchovies were found to comprise

approximately 92 percent of the diet of Brown Pelicans nesting in the Southern California Bight (Gress *et al.* 1980, Gress and Anderson 1983). In recent years, however, Pacific Sardine (*Sardinops sagax*) populations in the Southern California Bight have been recovering and are now common items in the Brown Pelican diet; studies are in progress to determine the importance of sardines to pelican productivity (Gress unpublished).

Communal roost sites are essential habitat for Brown Pelicans at all times of year, throughout their range (Gress and Anderson 1983, Jaques 1994). Brown Pelicans are unlike many seabirds in that they have wettable plumage (Rijke 1970) and will become heavy and hypothermic in cold water if they do not come ashore regularly to dry and restore their plumage. Brown Pelicans spend a large portion of their daily time budget at terrestrial roosts. These birds have many behavioral adaptations, including careful habitat selection, in order to conserve energy, as they are among the heaviest flying birds (Pennycuik 1972). Roost site selection is based on proximity to prey resources, isolation from potential predators and human disturbance, and microclimate features that aid in thermoregulation. Pelicans spread out to a larger number of roosts by day and gather into a smaller number of highest quality roosts at night. Island-type habitat is generally required at night. Major night roosts support hundreds to thousands of pelicans on a given night (Briggs and Chu 1987, Jaques and Anderson 1988, Jaques *et al.* 1996). In competition for space on crowded roosts, juveniles are often concentrated in less desirable areas while adults occupy preferred locations or displace juveniles entirely (Jaques unpublished).

3 Injured Resources

3.1 Intertidal Habitat and Subtidal Habitat

(This information is provided for background. This plan does not address restoration for these injuries which are covered separately under the settlement. See Appendix D.)

The *American Trader* oil spill is believed to have impacted a wide variety of marine life that were present in February 1990. Prespill sediment samples from Huntington Beach and Newport Beach showed background levels of total petroleum hydrocarbons (TPH) ranging from 5.5-14.5 mg/kg. Post-spill samples collected in February showed TPH concentrations of oil-stained sand to be 1,800-55,000 mg/kg. It can be assumed that the oil stranded along 22 km of coastline resulted in a significant increase in the mortality of intertidal invertebrates. Only selected taxa of marine life are addressed in this discussion. Breaking waves in the surf zone would suspend oil droplets, making droplets available to filter-feeding organisms such as clams. Surveys for bean clams (*Donax gouldii*) conducted on February 22, 1990 near Bolsa Chica Bluffs reported bean clam mortality of 70% in the upper intertidal zone. The overall mortality of bean clams was estimated to be 24%. Sand crabs were analyzed for aliphatic and polynuclear aromatic hydrocarbons. The results showed a large increase in the body burden of aliphatic hydrocarbons in sand crabs until June 1990. Shorebirds were impacted not only by the direct loss of potential food resources but also through the contamination of invertebrate prey.

Mitigation and monitoring projects related to water quality were funded directly through Southern California Coastal Water Research Project, as specified in the Federal Consent Decree (see Appendix B) and the parallel State Settlement Agreement. Since settlement funds (other than those covered in this Restoration Plan) were directly provided to the State of California to cover water quality and monitoring related to intertidal and subtidal injuries, no additional projects addressing these resources are included in this joint federal-state Restoration Plan which is directed at restoring injuries to seabirds.

3.2 Fish Resources

(This information is provided for background. This plan does not address restoration for these injuries which are covered separately under the settlement. See Appendix D.)

Post larval juvenile white sea bass were adversely impacted by oil from the *American Trader* spill. Specifically, 10-15 mm juvenile fish were killed by oil when it mixed with drift algae found near the surf line. The drift algae found in this area are the normal habitat for juvenile white sea bass and other croakers during and after the time of the spill.

Both eggs and adults of spawning grunion were exposed to oil. Hundreds of spawning grunion were observed dying in an oil mousse at Huntington Beach on February 11, 1990. Grunion eggs were collected for viability analyses. Based upon findings of reduced egg viability, the Trustees believe that impacts to anadromous, planktivorous, piscivorous, demersal and semi-demersal fish occurred.

The implementation of a fish hatchery program for White Sea Bass at Agua Hedionda Lagoon was funded directly through the California Department of Fish and Game, as specified in the Federal Consent Decree and the parallel State Settlement Agreement. See Appendices B and D for additional information. Since settlement funds (other than those covered in this Restoration Plan) were directly provided to the State of California, no additional projects addressing fish resources are included in this joint federal-state Restoration Plan which is directed at restoring injuries to seabirds.

3.3 Seabird Resources

Oil is highly toxic and inflicts two kinds of harm on birds. First, many birds die from direct contact with oil, through coating of feathers or ingestion. Second, reproductive output suffers, both because birds that die are permanently removed from the breeding population and because the reproduction of surviving oiled birds is impaired for one or more breeding seasons. After an oil spill, only a fraction of the birds killed are actually recovered. Many birds die at sea and sink, a few crawl into secluded spots on land, and some are eaten by predators. The likelihood of retrieving a carcass decreases with the decreasing body size the of bird (Carter *et al.* 2000). For example, deposition of Xantus's Murrelet carcasses on Southern California Bight beaches is unlikely because of low onshore transport, prevailing winds and currents, at-sea carcass sinking, and scavenging (Hickey 1993, Browne 1994 and Ford *et al.* 1996). Many of the animals recovered alive and subsequently cleaned at rescue centers do not survive the process or have reduced survivability once released to the wild (Sharp 1996, Anderson *et al.* 1996).

The trustee agencies estimated that as many as 3,400 birds died and as many as 9,500 chicks were not born as a result of the *American Trader* spill. First, approximately 600 bird bodies were recovered. Of the 300 birds recovered alive and cleaned at rescue centers, conservative estimates are that approximately half died after release. Additionally, another estimated 2,700 birds may have died but were never recovered, a figure comparable to the estimates of "at sea" losses in other oil spills. It is also estimated that in just the first three years following the spill, as many as 8,000 chicks would have been born to the birds killed by the spill. (It is highly likely, however, that the birds killed by the spill would have lived, on average, longer than three years. Thus the estimate of the chicks lost is low.) In addition, another 1,500 chicks could have been born to the birds that were oiled during the spill, but survived and either missed that breeding season or subsequently had reduced breeding success.

A number of categories of birds were affected by the *American Trader* spill. Over 95% of the oiled birds (dead and alive) were seabirds including sea ducks, pelicans, grebes, gulls, cormorants, loons, alcids (murres, auklets and murrelets) and tubenoses (shearwaters and petrels). California Brown Pelicans are an endangered species under federal and state law and thus are of particular concern to the Trustees. The Brown Pelican was severely impacted, with an estimated 185 dead birds. Based on observations at the Long Beach Breakwater, the principal pelican roost in the area, the Trustees estimated that half of the 750 to 1,000 pelicans roosting in the breakwater at the time of the spill were oiled. Additionally, an estimated 425 pelican chicks, at a minimum, were not born or fledged due to the dead or oiled birds. (Because of the longevity of pelicans, which is approximately 20 years, this estimate is extremely conservative.) The spill occurred just before the start of the breeding season as the birds gathered at traditional roosts before moving to breeding islands, therefore making the birds vulnerable to the oil in large numbers.

A study of the survival and behavior of oiled rehabilitated Brown Pelicans was commissioned by the Trustees following the *American Trader* spill (Anderson *et al.* 1996; see Appendix C). In this study, radio telemetry techniques and aerial surveys were utilized to track the fate of radioed rehabilitated pelicans; these birds were compared with a group of non-oiled controls. Most of the rehabilitated pelicans disappeared and were believed to have died within six months. Rehabilitated birds that survived beyond six months were sedentary and showed no signs of breeding activity during the following two breeding seasons. The low survival of these rehabilitated and released birds supports the claim that a large majority of the birds that were cleaned and released during the spill would have died following the spill and those birds that did survive were no longer contributing members of the breeding population.

Other species of concern in the Southern California Bight include those species whose breeding range is found primarily in the Channel Islands. In the alcid family, Xantus's Murrelet (California Species of Special Concern) is one of the rarest seabirds in the world. It's small size would make unlikely to be found dead. High levels of beach scavenging of murrelets also undoubtedly contribute to low carcass retrieval. In a recent pilot study, 4 out of 5 small bodied birds (i.e. the size of murrelets) were removed in a few hours by common ravens. Nocturnal mammals also remove many carcasses from beaches (Carter *et al.* 2000).

Ashy Storm-Petrels (California Species of Special Concern) are endemic to California. They are similarly vulnerable to oil pollution and are even less likely to be retrieved dead after an oil spill because of their small body size and propensity to being scavenged.

4 Restoration Planning and Alternatives Analysis

4.1 Restoration Strategy

The goal of restoration under the Clean Water Act and OPA is to compensate the public for injuries to natural resources and services resulting from the *American Trader* oil spill. This goal can be achieved by returning injured natural resources to their baseline condition and by compensating for any interim losses of natural resources and services during the period of recovery to baseline. The restoration strategy for this Restoration Plan focuses on seabird related natural resource injuries as required by the state and federal settlement agreements.

Restoration actions are either primary or compensatory. Primary restoration is action(s) taken to return injured natural resources and services to baseline on an accelerated time frame. The OPA regulations require that Trustees consider natural recovery under primary restoration. Trustees may select natural recovery under three conditions: (1) if feasible, (2) if cost-effective primary restoration is not available, or (3) if injured resources will recover quickly to baseline without human intervention. Alternative primary restoration activities can range from natural recovery to actions that prevent interference with natural recovery to more intensive actions expected to return injured natural resources and services to baseline faster or with greater certainty than natural recovery.

Compensatory restoration is action(s) taken to compensate for the interim losses of natural resources or services pending recovery. The type and scale of compensatory restoration may depend on the nature of the primary restoration action and the level and rate of recovery of the injured natural resources or services given the primary restoration action. When identifying the compensatory restoration components of the restoration alternatives, Trustees must first consider compensatory restoration actions that provide services of the same type and quality, and of comparable value as those lost. If compensatory actions of the same type and quality and comparable value cannot provide a reasonable range of alternatives, Trustees then consider other compensatory restoration actions that will provide services of at least comparable type and quality as those lost.

Table 3. Restoration Projects Considered

Project	Identified in Consent Decree	Submitted through Public Comment	Preferred Alternative?
Roost Site Creation	Yes	No	Yes
Santa Barbara Harbor , Agua Hedionda Lagoon	Yes	No	Yes
Other Locations To Be Determined	No	No	Yes
Roost Site Enhancement	Yes	No	Yes
Zuniga Point Jetty, Moss Landing	Yes	No	Yes
Channel Islands Harbor, Ventura Harbor, San Diego Bay National Wildlife Refuge, Coal Oil Point, Belmont Island, Malibu Lagoon, Seal Beach National Wildlife Refuge, Bolsa Chica State Ecoreserve, other locations to be determined	No	No	Yes
Roost Site Protection	Yes	No	Yes
Conservation Easements at Privately Owned	No	No	Yes
Decrease Human Disturbance	Yes	No	Yes
Marina del Rey, Ventura & Channel Islands Harbors;	Yes	No	Yes
Shell Beach and other locations	No	No	Yes
GIS atlas of roost sites for public and agency use	No	No	Yes
Seabird Nesting Habitat Restoration on Anacapa Island	Yes	No	Yes
Public Education and Awareness	No	No	Yes
Educational Materials on Anacapa Restoration, Shell Beach Educational Materials, Sanctuary Brochure on Brown Pelicans, West Anacapa Closure Educational Materials, Marker Buoys at West Anacapa, Bilingual Seabird Protection Brochures, Other Educational Projects To Be	No	No	Yes
Anacapa Restoration Project Documentary Video, Brown Pelican Live Video Fed Project	No	Yes	Yes
International Efforts	No	No	Yes
Seabird Protection Activities, Removal of Introduced Predators	No	No	Yes
Western and Clark's Grebe Restoration	No	Yes	Yes
Elkhorn Slough Habitat Enhancement	Yes	No	No
Acquisition, Restoration and Protection of Wetland	Yes	Yes	No
Enhancement of Seabird Habitat on Santa Catalina or San Clemente Islands	Yes	No	No

In considering restoration for seabird related injuries resulting from the *American Trader* oil spill, the Trustees first evaluated possible primary restoration for each injured seabird species, family or group. Based on that analysis, the Trustees determined that certain activities had the potential to effect primary restoration for seabirds since our actions will result in (1) decreasing the mortality rate of seabirds on Anacapa Island by reducing threats to survival such as predation by non-native predators, (2) increasing survival and reproductive rates of Brown Pelicans throughout the Southern California Bight by protecting or enhancing roosting habitat or artificially creating needed roosting habitat features (quality roosting habitat is currently limited throughout the Southern California Bight), (3) increasing survival and reproductive rates of grebes through habitat protection. These actions will result in the following: (1) prevention of interference with natural recovery by increasing survival and reproductive rates (roost enhancement and habitat protection) and decreasing mortality rates (predator control) and (2) return of injured natural resources and services to baseline faster or with greater certainty than would occur with natural recovery only. The other restoration activities we are evaluating are considered to be compensatory. Table 3 list all projects considered.

Liability issues, impacts to endangered or threatened species, degradation of water quality or low cost effectiveness, may cause the Trustees to modify proposed projects or select other projects which would benefit the injured natural resources. Changes may also occur to reflect further Trustee analysis. Those projects actually implemented may be a subset of those identified as the preferred alternative in this plan due to the costs of plan implementation. Alternatively, if there are funds available after the completion of this suite of projects, additional projects may be considered through a modification to this Restoration Plan.

4.2 Criteria Used to Evaluate Restoration Project Concepts

The Federal Consent Decree (see Appendix B) and the parallel State Settlement Agreement specify priority and alternative projects which have a close nexus to the locations, natural resources, and services impacted by the spill. These projects appeared feasible based on past experience with the proposed techniques and provide benefits appropriate for the scale of the injuries caused by the spill. The Trustees retained the ability to select additional or alternative restoration projects following further examination of the scientific and engineering requirements and objectives of the priority and alternative projects specified in the Consent Decree and Settlement Agreement and based on the available funds. Such additional projects must meet the objective of restoring resources injured by the spill in accordance with the provisions of the Clean Water Act and other relevant federal and state laws governing the use of recoveries for natural resources damages.

The Trustees developed criteria to evaluate and prioritize the priority and alternative projects identified in the Consent Decree and Settlement Agreement as well as additional restoration alternatives identified by the Trustees (hereafter collectively referred to as "restoration alternatives" or "projects"). The criteria include relevant federal and state law provisions governing use of recoveries for natural resource damages.

4.2.1 Initial Screening Criteria

The Trustees used the initial screening criteria listed below to determine preferred and non-preferred projects presented in this draft restoration plan.

- **Technical feasibility**: The project must be technically and procedurally sound. The Trustees will consider the level of uncertainty or risk involved in implementing the project. A proven track record demonstrating the success of projects utilizing a similar or identical restoration technique can be used to satisfy this evaluation standard.
- **Consistency with the Trustees' restoration goals:** The project must meet the Trustees' intent

to restore, rehabilitate, replace, enhance or acquire the equivalent of the injured seabird resources or the services those resources provided. In addition, projects in this restoration plan should not duplicate other efforts already ongoing at the same location.

- **Relationship to injured resources and services:** Projects that restore, rehabilitate, replace, enhance or acquire the equivalent of the same or similar resources and services injured by the spill are preferred to projects that benefit other comparable resources or services. The Trustees will consider the types of resources or services injured by the spill, the location, and the connection or "nexus" of project benefits to those injured resources.
- **Likelihood of adverse impacts:** The project should avoid or minimize adverse impacts to the environment and the associated natural resources. Adverse impacts may be caused by collateral injuries when implementing, or as a result of implementing, the proposed project alternative. The Trustees will consider the avoidance of future short-term and long-term injuries as well as mitigating past injuries when evaluating projects.
- **Likelihood of success:** The Trustees will consider the potential for success and the level of expected return of resources and resource services. The Trustees will also consider the ability to monitor and evaluate the success of the project; the ability to correct any problems that arise during the course of the proposed project alternative; and the capability of individuals or organizations expected to implement the alternative. Performance criteria should be clear and measurable.
- **Multiple resource benefits:** The Trustees will consider the extent to which the project benefits more than one natural resource or resource service. This will be measured in terms of the quantity and associated quality of the types of natural resources or service benefits expected to result from the project.
- **Time to provide benefits:** The Trustees will consider the time it takes for benefits to be provided to the target ecosystem or public. A more rapid response to providing benefits is preferable.
- **Duration of benefits:** The Trustees will consider the expected duration of benefits from the project. Long-term benefits are the objective.

4.2.2 Additional Screening Criteria

During the implementation of the final restoration plan, the following additional criteria will be used to further evaluate and prioritize projects for funding and implementation.

- **Compliance with laws:** The project must comply with all applicable laws.
- **Public health and safety:** The project cannot pose a threat to the health and safety of the public.
- **Protection of implemented project:** The Trustees will consider the opportunities to protect the implemented project and resulting benefits over time through conservation easements, land acquisition, or other types of resource dedication. Long-term protection of the project site and the benefits it provides is preferable.
- **Opportunities for collaboration:** The Trustees will consider the possibility of matching funds, in-kind services, or volunteer assistance, as well as coordination with other ongoing or proposed projects. External funding and support services that reduce costs or extend benefits are preferable.
- **Cost effectiveness:** The Trustees will consider the relationship of expected project costs to the expected resource and service benefits from each project alternative. Trustees will seek projects with the least costly (i.e., most cost efficient) approach to deliver an equivalent or greater amount and type of benefits.
- **Total cost and accuracy of estimate:** The Trustees will evaluate the estimated total cost of each project alternative and the validity of the estimate. The total cost estimate should include costs to design, implement, monitor, and manage the alternative. The validity of the cost estimate will be evaluated based on the completeness, accuracy, and reliability of methods used

to estimate costs, as well as the credibility of the person or entity submitting the cost estimate to accurately estimate costs

- **Comprehensive range of projects:** Trustees will evaluate the extent to which a project contributes to the more comprehensive restoration package. The project will also be evaluated for the degree to which it benefits any uncompensated spill injuries.

4.3 Evaluation of No Action Alternative - Natural Recovery Alternative

NEPA requires the Trustees to consider a "no action" alternative, and the OPA regulations require consideration of the equivalent, the natural recovery option. Under this alternative, the Trustees would take no direct action to restore injured natural resources or compensate for lost services pending environmental recovery. Instead, the Trustees would rely on natural processes for recovery of the injured natural resources. While natural recovery would occur over varying time scales for the injured resources, the interim losses suffered would not be compensated under the no action alternative.

The principal advantages of this approach are the ease of implementation and the absence of monetary costs because natural processes rather than humans determine the trajectory of recovery. This approach, more than any other, recognizes the tremendous capacity of ecosystems to self-heal.

However, Trustees have a responsibility to seek compensation for interim losses pending recovery of the natural resources. This responsibility cannot be addressed through a no action alternative. While the Trustees have determined for the *American Trader* oil spill that natural recovery is appropriate as one means of primary restoration for injuries resulting from the oil spill, the no action alternative is rejected for compensatory restoration. Losses were, and continue to be, suffered during the period of recovery from this spill, and technically feasible, cost-effective alternatives exist to compensate for these losses.

4.4 Evaluation of Restoration Actions - Preferred Alternatives

The projects presented in this section are generally those that were identified in the Consent Decree and Settlement Agreement as priority projects or alternative projects. During the development of the draft restoration plan, the Trustees reevaluated all of the priority projects. Based on the screening criteria developed by the Trustee Council, it was determined that some of the priority projects were either impractical, technically infeasible, did not provide an adequate link to injured seabird resources or had little likelihood of achieving the desired goal of restoration. In this evaluation process, the Trustees took another look at the conservation problems of the seabird-related natural resources impacted by the spill and identified additional projects which also provide benefits to the injured resources. These additional projects were also evaluated according to the Trustee Council's screening criteria. Many of the projects identified in the Consent Decree and Settlement Agreement as preferred projects have been modified to improve their feasibility and effectiveness.

Additional project ideas were solicited from the public during the public review phase of this plan. Some of these projects are incorporated in the preferred alternative. Others were evaluated and did not adequately meet the restoration criteria. See Appendix F for a list of projects submitted by the public.

The Trustee Council applied the Initial Screening Criteria to all the proposed projects in order to determine the best projects available for restoration of the resource. The Additional Screening Criteria will be applied at the individual project level as the implementation process moves forward. The Trustees will determine whether to fund the selected alternatives based on a project's ability to meet all the screening criteria.

Several restoration alternatives considered in this section are based on conceptual designs rather than detailed engineering design work or operational plans. Therefore, details of specific projects, including actual cost information, may require additional refinements or adjustments to reflect site conditions or other factors prior to implementation. Additional environmental compliance may be needed pursuant to

NEPA, CEQA, ESA or other state and federal laws and regulations as these conceptual plans evolve to specific courses of action. Because of the uncertainty of actual project costs, those projects implemented may be a subset of those identified as the preferred alternative.

4.4.1 Creation, Enhancement and Protection of Brown Pelican Communal Roost Sites

4.4.1.1 Goals and Nexus to Injury

Projects conducted under this category will benefit the population of injured California Brown Pelicans by restoring critical non-breeding habitat; specifically, these projects seek to enhance, create, and protect coastal roosts along the southern and central California mainland.

4.4.1.2 Background

Communal roost sites are essential habitat for Brown Pelicans (Gress and Anderson 1983). The primary roost sites for Brown Pelicans in the western U.S. are offshore rocks and islands on the outer coast, and sand islands within large estuaries (Briggs *et al.* 1987, Jaques 1994). The southern California mainland coast is primarily sandy and lacks natural nearshore islands for roosting. Intense shoreline development, wetland filling, and other habitat alteration has eliminated much of the natural onshore roost habitat. Loss of historic roost habitat from human encroachment has been somewhat offset by the addition of artificial structures, such as jetties, breakwaters and floating structures. Pelicans now rely heavily on these types of structures for roost sites in southern California (Jaques *et al.* 1996). Few roosts along the mainland fall under the jurisdiction of natural resource agencies, and several major roost sites on privately owned structures have been lost in recent years. Human disturbance at many existing roost sites in southern California is high relative to other portions of the range. The most frequent cause of this disturbance is recreational activities and the most heavily disturbed habitats used by pelicans are estuaries (Jaques and Anderson 1987). Creation, enhancement, and protection of roost sites was identified as a restoration project goal in the consent decree to compensate for injuries incurred to the Brown Pelican from the *American Trader* oil spill. Birds that were injured in the spill use habitat throughout the Southern California Bight.

4.4.1.3 Description/methods

A variety of individual projects that fall into three general categories (creation, enhancement and protection) are planned to achieve the overall goal of improved Brown Pelican roosting habitat along the California coast. Potential project sites are presented in this document. Final site selection and roost site treatments will be determined through the public comment process, consultation with stakeholders, and additional analyses. All projects will have an associated interpretive element (e.g., educational panels, press releases, development of viewing stations).

A. Roost Site Creation

Roost site creation projects will fill in gaps in the availability of large capacity, high quality roosts along the southern California coastline. The basic design element will be to provide islands surrounded by water in relatively undisturbed habitats. Projects proposed are: 1) the provision of a large floating structure, such as a barge, for pelicans to roost on along the outer coast; and 2) the creation of an artificial island within a lagoon that is surrounded by deep water and is naturally inaccessible or already closed to recreational users.

The outer Santa Barbara Harbor has been identified as a potential site for the outer coast barge project, due to demonstrated pelican use of an abandoned privately owned barge in the area (Jaques *et al.* 1996), the importance of the surrounding foraging area for birds breeding at Anacapa Island (Gress *et al.* 1980, Briggs *et al.* 1987), and the desirable configuration of the harbor. The harbor provides a protected mooring area that is relatively distant from commercial activities associated with the inner harbor.

Several locations have been identified as potential sites for the lagoon island project including Agua Hedionda. The lagoon provides protection from potential predators due to sufficient water depth and

protection from recreational disturbances due to existing regulations that preclude public use of the open waters. Pelicans rely on artificial floating structures associated with a mariculture operation for roosting, but the lagoon attracts more pelicans than can be accommodated on these limited surfaces (Jaques, unpublished). The lagoon is privately owned by a utility company; therefore, project development is dependent on agreement or conservation easement with this entity. Design specifications for an artificial island at this site, or alternate sites, will be developed with respect to desired capacity of the structure, aesthetic considerations, and potential impacts on the surrounding environment.

Other locations to implement these projects will be considered, as appropriate, during the project design or implementation.

B. Roost Site Enhancement

Roost site enhancement projects will be designed to increase the capacity or quality of existing roost sites. Proposed projects include the following:

(1) Adding rock riprap to portions of the tops of selected jetties and breakwaters where pelican use is limited by high tides and large waves. Candidate project sites are the Zuniga Point jetty, Channel Islands Harbor breakwater, and Ventura Harbor breakwater.

(2) Alteration of earthen levees and water level management programs to create better island habitat in remnant salt evaporation ponds is proposed at two sites, South San Diego Bay National Wildlife Refuge and Moss Landing Wildlife Area. The remnant salt ponds at Moss Landing were formerly the largest single communal roost site in California, but use has declined as habitat conditions for pelicans have deteriorated (Briggs *et al.* 1987, Jaques and Anderson 1988).

(3) Structural enhancement of abandoned artificial structures associated with expired oil drilling leases on the outer coast at Coal Oil Point and Belmont Island is proposed to increase capacity and desirability of these sites for pelicans.

(4) Coastal wetland enhancement projects are proposed and include the following: (a) Provision of natural roosting substrates, such as downed trees, that can be used by pelicans during high water periods in lagoons that lack effective islands will be targeted for one or more wetlands, for example Malibu Lagoon. (b) Vegetation removal that simulates natural flood effects on islands at river mouths where flow has been reduced may also be considered if appropriate sites are located in pelican use areas.

Other locations will be considered during the project design or implementation such as Bolsa Chica Ecoreserve and Seal Beach National Wildlife Refuge.

C. Roost Site Protection

Roost site protection projects will be aimed at the following:

(1) Securing management jurisdiction over one or more key roost sites that are in private ownership. Development of a conservation easement on the outer seawall of Rincon Island, a privately owned island and oil production site, will be sought to perpetuate the ability of pelicans to roost at the site. Two other privately owned sites used heavily by pelicans in the early 1990's were removed in recent years, resulting in a major decline in pelican use of the overall area (Jaques *et al.* 1996, Jaques, unpublished).

(2) Decreasing human disturbance at selected coastal wetlands, breakwaters, jetties, and offshore rocks. Efforts to decrease human disturbance in wetlands will take place on California Department of Parks & Recreation lands at the Santa Clara River mouth and Malibu Lagoon and will consist of installation of advisory signs, and interpretive panels. Selection of these sites is based on history of known pelican use and documented disturbance problems associated with park users. Evaluation of trail systems and possible re-routing of footpaths will take place at other public coastal wetlands where negative impacts on pelicans are taking place.

To reduce disturbance in selected harbors, advisory signs will be placed at three breakwaters (Marina del Rey, Ventura Harbor, and Channel Islands Harbor) and the outer tips of three jetties (King Harbor,

Dana Point Harbor, and Oceanside Harbor). Installation of fence barriers to secure favored pelican roost habitat at the tips of selected jetties will be considered if there is support from local harbor districts. Harbor treatment sites have been selected based on existing pelican use, observed disturbance from fisherman, and the availability of alternate fishing access on other jetties within the same harbor.

To reduce human disturbance at a vulnerable and critical group of offshore rocks adjacent to the town of Shell Beach, an interpretive panel will be developed in conjunction with the educational component of this restoration plan (see Public Education and Awareness Project description below).

Other locations to implement these projects will be considered, as appropriate, during the project design or implementation.

(3) Providing information on roost sites in a format that will facilitate sound management to protect essential brown pelican non-breeding habitat and identify future restoration project sites, if needed. A Brown Pelican roost site atlas will be prepared with data derived from historical and ongoing standard aerial surveys and ground-based observations. The area included will encompass the southern California mainland and the eight California offshore islands in the Southern California Bight. Data will include detailed maps and information on pelican use of traditional sites (seasonal abundance, diurnal patterns, and changes in use over time), site ownership and jurisdiction, documented levels and sources of disturbance, natural factors that limit use, management concerns and recommendations. The catalog will be prepared in a user-friendly GIS format so that data that can be readily updated, distributed electronically and queried. The initial catalog would be available in both hard copy and Arcview GIS format.

4.4.1.4 Environmental Consequences (Adverse and Beneficial)

A. Beneficial effects. Improvements in the existing network of communal roosts along the coast will have a positive influence on the energy budgets of pelicans by reducing energy costs associated with: 1) commuting between prey and roosts; 2) flushing and relocating due to human disturbance; and 3) use of sub-optimal microclimates within roosts. Costs of migration will also be reduced by increased availability, quality and capacity of stopover sites. Cumulative energy reductions will result in improved body condition of individual birds. Expected population-level effects from improving the condition of individual birds are increased juvenile and adult survival, and increased reproductive success of pelicans in the Southern California Bight. Juvenile survival and adult reproductive success are the primary life history parameters affecting the Southern California Bight Brown Pelican population (Anderson and Gress 1983).

All other bird species that occur in association with roosting pelicans are likely to benefit from the proposed roost projects. Bird groups that will benefit from increased availability of island habitat and reduced human disturbance in coastal environments will include gulls, terns, cormorants, shorebirds, herons, egrets, guillemots, and ducks. The suite of species receiving benefits will vary with the type of roost treatment and project site. The restoration projects will also enrich the public through associated interpretation and will help foster an awareness and stewardship ethic that will result in reduced disturbance to roosting Brown Pelicans, and other coastal waterbirds, at other locations. Public enjoyment of pelicans will be increased by projects that allow the public to view communal roosting groups without causing disturbance. These positive effects will aid in the recovery of the population to pre-spill conditions.

B. Adverse impacts. Environmental consequences of increased pelican use of lagoons may include impacts on water quality, if guano accumulation exceeds the circulation ability of the lagoon. However, on the outer coast, Brown Pelican guano in the vicinity of roosts will provide a desirable source of nutrient enrichment and may enhance local food webs in given areas.

Pelican roost site creation projects will be associated with variable degrees of liability and some projects

will require ongoing management oversight. Careful site selection, project design, selection of raw materials, and adequately funded maintenance programs will offset potential liability costs. Signs, posts, or fences may need to be replaced during the projected life of the project due to fading, corrosion, or vandalism. Vegetation on any earthen islands that are created may need to be periodically controlled or removed.

Negative aspects of pelican use of harbors for roosting include the increased risk of contact with environmental contaminants such as oil, the increased likelihood of injury due to scavenging (e.g, entanglement in fishing line, puncture from fishing hooks, etc.) and the development of nuisance issues. However, most of the proposed projects are not expected to result in major increases in pelican use of harbors, rather they are expected to improve the quality of resting time allowed within harbors. The distance between the proposed barge at Santa Barbara Harbor and the commercial wharf and inner harbor is expected to moderate potential negative effects of increased pelican presence in the harbor.

Concerns regarding visual impacts of signs and their potential for providing predator perches near Snowy Plover or Least Tern nesting areas will need to be addressed. Signs will be carefully conceived and located so as not to detract from the natural beauty of any area.

4.4.1.5 Probability of Success

Brown Pelicans respond readily to novel roost sites as long as the key habitat elements are provided. Key elements have been described in this document and in Gress and Anderson (1983) and Jaques and Anderson (1987). All projects that involve physical manipulation of habitat are very likely to succeed. The success of projects that rely on alteration of human behavior include a wider range of unknowns. Projects that provide the most secure island habitat in areas that harbor reliable food resources are expected to receive the highest level of use and will function as communal night roosts as well as daytime use areas.

Only one pelican roost site enhancement project has been attempted on the Pacific west coast. This project, construction of a small island in a remnant salt pond, took place at Moss Landing Wildlife Area. The “island” was not an effective island and the effort was a complete failure due to poor site selection and poor design. Projects conducted under the American Trader Restoration Plan will be designed and implemented utilizing the best available expertise and information on Brown Pelican habitat selection, microclimate preference, and behavioral ecology.

4.4.1.6 Performance Criteria and Monitoring

Performance Criteria: Performance criteria will be developed for each specific project. Success will be based on increases in roost attendance and increases in population abundance.

Monitoring: To monitor the success of restoration efforts, a combination of aerial surveys and ground-based observations at roosts will be conducted for the duration of the project (see also Appendix A).

Aerial surveys will provide a means for monitoring trends in abundance and large-scale shifts in pelican distribution as roosts are either created, enhanced, or lost, and will also allow views of roost sites that are not visible from the ground. A complete photographic aerial survey of the southern California mainland and Channel Islands will be conducted four times a year to provide a snapshot of pelican distribution and diurnal roost use in each of four seasons. The efficacy of colonial and roost site surveys will be evaluated periodically to ensure the success of this methodology. Some of this work may be conducted by USGS/BRD as part of another project. A cooperative effort with existing USGS/BRD programs may eliminate the need for the American Trader funds to bear much of the costs of aerial surveys. In addition, one statewide pelican survey will be conducted each September, to evaluate pelican use of southern California in the context of the state and also in relation to the entire U.S. Pacific coast non-breeding range. USFWS will conduct annual fall aerial surveys of pelicans in Oregon and

Washington as part of an established, on-going monitoring program.

Ground-based observations at selected roost sites will be designed to monitor the response of pelicans to individual roost treatments. The field work will repeat the protocols developed in the pre-restoration phase in order to generate comparative data. Scheduling will be coordinated with aerial surveys so that the effect of large-scale distribution patterns on use of specific roost sites can be evaluated. The amount of time spent observing each site will vary according to the type of roost, type of project, and questions that need to be addressed. For each major project, observations spanning a period of approximately 3 days, 4 times per year are anticipated.

Monitoring will continue for a minimum of 5 years after project completion to determine the long term effectiveness of this project.

4.4.1.7 Evaluation

The provision of a relatively large roosting barge nearshore in the Santa Barbara Channel is likely to have the greatest direct benefit to pelicans; use of the structure would probably far exceed that of other individual projects. However, incremental benefits of even the smallest projects will result in a large cumulative positive impact on coastal habitat quality for pelicans and other waterbirds in southern California. Southern California is the most environmentally degraded and heavily disturbed region in the range of the California Brown Pelican and use of the area during the non-breeding season appears to have declined (Jaques *et al.* 1996). The network of projects proposed are expected to result in a long-term measurable increase in the number of pelicans that roost along the southern California mainland. These positive effects will aid in the recovery of the Brown Pelican population to pre-spill conditions. The Trustees have determined that these projects have a reasonable likelihood of success, are technically feasible and are consistent with our restoration goals. Although these projects primarily benefit injured California Brown Pelicans other injured seabirds species will also benefit. Careful project planning and development considering all the information available on pelican habitat selection and key habitat elements should enhance project success. Efforts will continue to be made to avoid or appropriately mitigate any adverse environmental impacts associated with these projects. Issues related to cost, collaboration with partners, and development of appropriate compliance with laws and safety will be considered during finalization and implementation of the Restoration Plan.

4.4.2 Seabird Nesting Habitat Restoration on Anacapa Island

4.4.2.1 Goals and Nexus to Injury

This project addresses injured seabird resources (burrow/crevice nesters and ground nesters) by restoring their nesting habitat on Anacapa Island by eradicating the introduced black rat (*Rattus rattus*).

4.4.2.2 Background

Island ecosystems are highly vulnerable to both extinctions and the impacts of non-native species (Diamond 1985, 1989; Olson 1989). Of the 484 recorded extinctions occurring since 1600, at least 75% have been island endemics; non-native species were implicated in the majority of these extinctions (World Conservation Monitoring Centre 1992), especially rats (*Rattus* spp.) (see King 1984, Atkinson 1985). Additionally, rats can cause widespread ecosystem perturbations on islands, with profound effects on the distribution and abundance of native species. Introduced black rats on the three islets comprising Anacapa Island likely have negative impacts on the terrestrial ecosystem, affecting both flora and fauna (see Collins 1979, Erickson 1990, Erickson and Halvorson 1990). For example, black rats may have had a significant impact on breeding populations of small crevice-nesting seabirds, such as alcids and storm-petrels (*ibid*.), which are highly vulnerable to rat predation (Imber 1984, Moors and Atkinson 1984, Atkinson 1985, Howald 1997). Black rats have been found to occupy prime nesting habitat for small seabird species, such as Xantus's Murrelet, on Anacapa Island (H. Carter personal communication). Rats have likely prevented Xantus's Murrelet and possibly Ashy Storm-Petrel from breeding over large portions of their potential nesting habitats at Anacapa Island (H. Carter personal

communication).

In addition to negative impacts to seabirds, introduced rats are known to feed and prey on a multitude of floral and faunal organisms on Anacapa Island, including terrestrial and intertidal invertebrates, reptiles and amphibians, land birds, and a wide variety of plant material (Erickson 1990). Because of diet overlap, black rats probably have also had a negative impact on the endemic Anacapa deer mouse (*Peromyscus maniculatus anacapae*) (Collins 1979, Collins *et al.* 1979, Erickson and Halvorson 1990). Rats have caused the extinction of native rodents on other islands (Daniel and Williams 1984) and have likely contributed to past extirpations of deer mice on East Anacapa Island (Banks 1966, Collins *et al.* 1979).

The Consent Decree and Settlement Agreement stated that the elimination of introduced predators such as rats is one of the most effective restoration measures for enhancing seabird habitat and included this project as a priority project.

Due to the importance of enhancing the public's opportunity for involvement in this project because of the sensitivity associated with the use of rodenticides on a relatively pristine island, the National Park Service, with the assistance of the American Trader Trustee Council, is preparing a companion EIS which will be available for public comment and review during the summer of 2000. The Trustees will adopt the resulting EIS as part of environmental compliance requirements.

4.4.2.3 Description/methods

Rat eradications from islands have only been successful with the use of rodenticides. Rats have been successfully removed from over 30 islands greater than 10 hectares in size (range: 10-3,300 ha) worldwide with the use of rodenticides (Veitch and Bell 1990, Buckle and Fenn 1992, Taylor 1993, Buck 1995, Tershy and Croll 1994, G. Kaiser personal communication, K. Lindsay personal communication, T. Micol personal communication, J. Ramirez personal communication, D. Veitch personal communication, B. Zonfrillo personal communication). Eradications were accomplished by broadcasting a rodenticide over the entire island, either by using bait stations deployed on a grid and/or by aerial broadcast from a helicopter, or in some cases, broadcast by hand. Trapping has proven to be ineffective (e.g., Moors 1985). To successfully eradicate rats from islands, rodenticides have to be placed into every rat's territory at a point in time when there is a food shortage and the rat population is in decline. Brodifacoum, bromadiolone and warfarin (all three are anticoagulants) are the only rodenticides that have resulted in complete eradication on islands. Brodifacoum has been demonstrated to provide the greatest efficacy against the target species and has been used in the majority of island restoration projects. Unlike warfarin, brodifacoum can kill rats after a single feeding and resistance in rats is rare (Kaukeinen 1993). It is the rodenticide most commonly used by pest control professionals and the most frequently used rodenticide in successful rat eradication projects. An analysis of the rodenticides considered for use on Anacapa Island has been conducted and is outlined in an Environmental Impact Statement (EIS) prepared by the National Park Service. Additionally, public education programs associated with this project are described in the Public Education and Awareness project below.

4.4.2.4 Environmental Consequences (Adverse and Beneficial)

A. Beneficial effects. Seabird colonial nesting on islands has likely evolved in part from predation pressure (e.g., Buckley and Buckley 1980), and Anacapa Island is one of only three California Channel Islands (Anacapa, Santa Barbara and Prince islands) which historically (i.e., prior to European arrival) has provided terrestrial predator-free breeding habitat to seabirds (McChesney and Tershy 1998). Removing rats from Anacapa Island should provide an increase in nesting habitat available to seabirds and decrease predation on eggs, chicks and adults, thereby increasing population size and breeding success.

Land birds, amphibians, reptiles, terrestrial invertebrates, and intertidal organisms are all likely to benefit

from the eradication of black rats on Anacapa Island (see Collins 1979, Atkinson 1985, Erickson 1990, Erickson and Halvorson 1990). Because rats pose health and safety hazards (e.g., Pratt *et al.* 1977) and can cause destruction to supplies and equipment, the eradication of rats will also benefit visitors to East Anacapa Island. The removal of black rats from Anacapa Island is expected to have long-term conservation, health, safety and recreational benefits and will remove a destructive nuisance to human habitation and use of the island.

In summary, rat eradication on Anacapa Island should result in: 1) increases in small crevice-nesting seabird populations (such as alcids and storm-petrels) breeding there; 2) a long-term increase in the annual maximum population of the native deer mouse on Anacapa Island; 3) a long-term increase in the number of predatory birds which prey on deer mice and small crevice-nesting seabirds; 4) a long-term increase in the population size of native lizard species; 5) possible decrease in predation of some terrestrial and marine intertidal invertebrates; 6) possible increase in the recruitment of island oaks on West Anacapa Island; 7) elimination of a nuisance to visitors (by rats chewing through packs, destroying camping equipment, and getting into food); 8) potential source of a number of rat-born diseases; and 9) elimination of destruction by rats to National Park Service equipment, supplies, buildings, utility lines, etc. on East Anacapa Island.

B. Adverse impacts. The success of restoration activities on Anacapa Island will be measured by the complete removal of the rats from the island. To successfully eliminate rats from Anacapa Island, a highly efficacious rodenticide must be used to ensure complete eradication. Because there are no rat-specific toxicants, the use of a rodenticide to eradicate rats will pose a risk of poisoning to non-target species on Anacapa Island. Non-target species are defined as those species that are unintentionally exposed to the rodenticide. Non-target poisoning is generally categorized as primary or secondary poisoning. Primary poisoning occurs when a non-target species consumes the bait directly. Any individual feeding on a primarily poisoned organism is at risk of secondary poisoning. Although non-target poisoning is possible, the probability of poisoning is dependent on both the toxicity of and the organism's exposure to the rodenticide.

Record and Marsh (1988) and Taylor (1993) identified elements involved in determining whether a rodenticide poses a poisoning hazard to non-target species: (1) chemical and toxicological properties of the rodenticide; (2) composition of the bait and how it is applied; (3) behavior of non-target species at risk; (4) behavior of the target species both when intoxicated and at death; and (5) local environmental factors. Each of these variables will be analyzed in turn and presented in the EIS developed by the Channel Island National Park.

Studies have been initiated to evaluate the potential risk of poisoning to non-target species and to develop appropriate mitigation measures. Although there are risks to non-target species, by implementing mitigation measures and monitoring the ecosystem, these impacts will be minimized. Island restoration projects worldwide have documented impacts to non-target species; however, the impacts have been of short duration and recoveries of some species to higher population levels and\or greater productivity than pre-eradication conditions have been documented (e.g., Towns 1991). In most cases, wildlife managers have determined that long-term benefits to island ecosystems with the removal of introduced rats greatly outweigh the risks to non-target species.

Additionally, the island malacothrix (*Malacothrix indecora*), a small annual herb in the aster family, is a federally endangered plant species which occurs on Anacapa Island. The species occurs on rocky coastal bluffs in coastal scrub (Junak et al. 1995). Collections have been made from middle Anacapa Island at the east end on a knife edge ridge and on an east facing slope in a canyon draining from Coche point to Potato Harbor (Davis 1998). Efforts will be made to avoid impact during project implementation. Consequently, there is no effect anticipated on the island malacothrix as a result of this project.

4.4.2.5 Probability of Success

The removal of rats from offshore islands has been demonstrated worldwide. At about 300 ha in size, Anacapa Island is well within the size range (10-3,300 ha) of over 30 islands from which rats have been completely eradicated. In addition, with the use of similar techniques and rodenticides employed in successful eradication programs elsewhere, the probability of success on Anacapa Island is very high.

4.4.2.6 Performance Criteria and Monitoring

Technical specifications for this project can be found in the EIS currently in preparation by the Channel Islands National Park. Outlined within the EIS are the methods for conducting the eradication, risks to non-target species, and associated mitigation measures to minimize those risks. The project requires long-term monitoring for rats to ensure complete eradication. Indices for evaluating the success of eradication are outlined in the EIS.

To assess the effects of rat eradication and the effects of eventual rat elimination on Anacapa Island, seabird populations potentially at risk need to be monitored. Monitoring of each species should continue over a ten-year period to detect possible population changes. Substantial baseline population data are available for several seabirds nesting on Anacapa Island: Brown Pelicans, Double-crested Cormorants, Brandt's Cormorants, Pelagic Cormorants, and Western Gulls. Adequate baseline population data, however, still needs to be established for Xantus's Murrelets and Ashy Storm-Petrels prior to or shortly after rat eradication, with follow-up monitoring afterwards. The latter two species are small, crevice-nesting seabirds that are highly vulnerable to rat predation; only small numbers have been found nesting on Anacapa Island compared to the large amount of suitable nesting habitat available (H. Carter personal communication). Thus, it is likely that rats have severely depressed the breeding population size and nesting success of these two species on Anacapa Island and probably are prevented from breeding over large portions of their potential nesting habitat on Anacapa Island. Because there is little known about these populations, there are no adequate baseline population data in which to accurately measure the effect of rat removal. To develop this baseline, specific population data are being collected prior to or shortly after the start of rat eradication projects (See Appendix A). Breeding data from the Anacapa Island surveys should be compared with those of control populations from other islands. Preliminary data collected in 2000 have shown that larger numbers of Xantus's Murrelets currently attend the Anacapa colony than were previously known (H. Carter, personal communication). Thus, rat removal may result in a more rapid recovery to higher population sizes.

Rats have caused severe reductions in several seabird colonies worldwide and perhaps extirpation on some islands (Imber 1984, Moors and Atkinson 1984, Atkinson 1985, Howald 1997). Small seabird species rarely co-exist for long periods of time with introduced rats. Rat eradication should therefore greatly benefit Xantus's Murrelet and Ashy Storm-Petrels. In addition, Black Storm-Petrels may also nest on Anacapa Island (their presence as breeding birds has yet to be confirmed); if so, rat eradication would likely benefit this species as well. All three species have been listed as "Species of Special Concern" by the State of California (Remsen 1978). Recent surveys have shown that small populations of these two species breed on Anacapa in habitats largely inaccessible to rats (H. Carter personal communication).

California Brown Pelicans are classified by both the Department of Interior and the State of California as an endangered species (see Gress and Anderson 1983). It is therefore necessary that all care be taken to avoid any negative impacts on this species from rat eradication. The Brown Pelican breeding effort and winter roosts on Anacapa Island should therefore be carefully monitored using standard methods (Gress 1992, Gress and Martin 1999) so that data will be consistent and comparable to those from previous years in order to monitor the project effectiveness. Ground, aerial and boat surveys have all been utilized to gather basic population and reproductive data (described in Gress and Martin 1999).

Double-crested, Brandt's, and Pelagic cormorants should also be monitored annually; like Brown Pelicans, the cormorant species are all excellent indicators of environmental change. While it is unlikely that any of the cormorant species will be much affected by rat eradication, the breeding success of each species should be monitored to measure potentially negative impacts from disruption caused by

eradication activities. Cormorants can be censussed during Brown Pelican surveys; therefore, no additional visits are required for cormorants alone.

The monitoring results will be used to evaluate the projects' effectiveness, evaluate ongoing rat predation, or lack thereof, and will aid in directing any needed project modifications.

Direct or secondary poisoning is probably not an issue with any of the above-mentioned seabird species, with the exception of Western Gulls. Thus, monitoring Western Gulls is important and will focus primarily on the effects of toxicity rather than disturbance. Potential impacts on gulls will be reduced greatly by conducting the eradication program during the fall months.

Minor disturbances in which birds are flushed and quickly return would probably be of little consequence; repeated, protracted disturbance, however, could cause longer term impacts and must therefore be avoided. At this time, no other impacts are anticipated. However, these populations will be monitored in such a way that unanticipated consequences of the rat eradication program will be detected and alleviated.

As with any monitoring program, the effects of human disturbance on breeding success must be considered a possibility, no matter how remote. Using standard techniques (i.e., methods that have been developed for a certain species breeding at a certain locale) with experienced personnel should eliminate the possibility of disturbance. Monitoring seabird populations will detect any long-term changes that might occur in breeding effort, reproductive success, phenology, and (in some species) population age structure, so that appropriate management and conservation measures may be taken to mitigate the problem.

The probability of success in monitoring seabird species on Anacapa Island is very high. Annual breeding surveys of Brown Pelicans and Double-crested Cormorants on Anacapa Island have taken place each year since 1969; standard methods have been utilized. Protocol for seabird monitoring in the Channel Islands National Park was developed in early 1980s. As a result, methods for seabird monitoring in the Channel Islands are well-established and standardized, thus providing consistent data and a sound data baseline.

4.4.2.7 Evaluation

Multiple government agencies are involved in the development, evaluation and subsequent implementation of the rat eradication program. Consultation with the following agencies is required before implementation of the rat eradication program on Anacapa Island: National Park Service (NPS), US Fish and Wildlife Service (USFWS), US Environmental Protection Agency (EPA). USFWS will be consulted regarding potential disturbance/impacts to endangered species, and EPA will be consulted to obtain registration of a rodenticide to be used for rat eradication on Anacapa Island.

The Trustees have determined that this project is technically feasible and consistent with our restoration goals. Multiple species will benefit from this project including small burrow nesting seabirds such as Xantus's Murrelets and Ashy Storm-Petrels, as well as large ground nesting seabirds such as California Brown Pelicans. Efforts will continue to be made to avoid or appropriately mitigate any adverse environmental impacts associated with this project. Issues related to cost, collaboration with partners, and development of appropriate compliance with laws and safety will be considered during finalization and implementation of this project and the Restoration Plan. After the completion of the Trustee's involvement with this project, the National Park Service has committed to continue ensuring that Anacapa Island remains rat free to protect Anacapa's seabird resources. These positive effects will aid in the recovery and maintenance of ground- and burrow-nesting seabird populations to pre-spill conditions.

4.4.3 International Efforts for Restoration of Brown Pelican and other Injured Seabirds

4.4.3.1 Goals and Nexus to Injury

The overall goal of this project is to undertake international restoration efforts aimed at California Brown Pelicans and other seabirds that were injured by the spill but breed beyond U.S. boundaries.

4.4.3.2 Background

Over 90 percent of California Brown Pelicans are found breeding outside the U.S. in Mexico (Anderson and Anderson 1976, Anderson 1983, Gress and Anderson 1983). The total numbers of nesting pairs of this subspecies is estimated at 40,000 to 55,000 (D. W. Anderson, unpublished; see also Gress and Anderson 1983), but these numbers vary widely from year to year depending largely on El Niño conditions (during such events Brown Pelicans in the Gulf of California, for example, fail to breed or do not attempt to breed and usually disperse in large numbers either north or south). Two major nesting-island groups, the San Lorenzo and San Luis archipelagoes in the mid-riff region of the Gulf of California, might have 20,000 and 15,000 nesting pairs, respectively, in a maximum-effort nesting year (*ibid*.).

Gress and Anderson (1983) have tentatively identified four geographically distinct breeding populations, but even there, the northernmost population, which contains those breeding pelicans from southern California (i.e., the Southern California Bight population) extend importantly to several offshore islands south of the U.S./Mexican border. The *American Trader* oil spill, however, mostly affected this northern, international population (D. W. Anderson and F. Gress, unpublished analysis of banding and sighting data).

There is also a regular, annual migration of large numbers of adult and newly fledged, Mexico-originating Brown Pelicans into the California Current Region, mostly during the post-breeding period from May through September (estimated in a maximum-influx year by Briggs *et al.* 1987 at around 80,000 individuals), except in El Niño years when the California Coast is inundated by pelicans much earlier in the season (Anderson and Anderson 1976). Generally by November, most breeding-age Brown Pelicans from Baja California waters have again dispersed south, leaving behind mostly local Southern California Bight breeders and non-breeding pelicans from there and farther south (mostly juveniles and subadults) (Anderson and Anderson 1976, Gress and Anderson 1983). Thus, large numbers of Brown Pelicans originating in Mexican waters are potentially exposed to oil spill incidents off California, Oregon, and Washington at most times of the year.

Although, many individuals birds involved in the 1990 American Trader incident were of local,Southern California Bight population origins (i.e., primarily Channel Islands, Los Coronados Islands, and San Martin Island), it is likely that some pelicans associated with Mexican colonies further south were also present. California-originating Brown Pelicans, however, occasionally move as far south as the southern Gulf of California and into habitats along the coast of western Mexico; the exchange migrations go freely in both directions. Since 1997, two major oil spills have occurred within the non-U.S. range of Southern California Bight California Brown Pelicans: one near El Rosario, Baja California, and another near Guerro Negro, Baja California (D. W. Anderson, unpublished). Infrequent oil spills also occur in the Gulf of California (D. W. Anderson pers. observ.). A major oil spill in the enclosed seas of the Gulf of California represents the potential to affect a major portion (estimated at around 75-80 percent) of all individuals of the California subspecies of the Brown Pelican (and countless other seabirds that also nest in the same areas). Other injured seabirds that share this characteristic include such species that are as international in their movements as the Brown Pelican: gulls, storm petrels, Xantus' Murrelet, Scoters – all of which are injured seabirds which inhabit coastal California and Mexico during certain times of the year (Winnett 1979, Unitt 1984, Briggs 1987, Baird 1993, G. McChesney personal comm.). In the last decade, the government of Mexico (specifically, the Mexican equivalent of USFWS: Instituto Nacional de Ecologica or INE-SEMARNAP) has initiated a large coordinated effort to effect conservation of island-nesting seabirds of the Pacific waters off western Baja California and in the Gulf of California, with cooperating groups from non-governmental (e.g., Pronatura) and institutional organizations.

4.4.3.3 Description/methods

These projects will be managed and implemented by U.S. organizations including universities, conservation organizations or other appropriate entities which currently have or will develop cooperative relationships with Mexican organizations or government agencies in cooperation with the Trustees. The Trustees will hold the U.S. organizations accountable to ensure project completion, sound financial management and long term project success.

A. Seabird Protection Activities

In order to encourage voluntary protection of local seabirds that were injured by the spill and their Mexico habitat, a cooperative effort with Mexican wildlife managers in the Biosphere Reserve Program of Baja California and the Gulf of California will be funded to develop public education programs in the southern geographic area encompassing the range of the California Brown Pelican. The objectives of this program will be to provide educational materials, signs and other tools to change local activities so they are consistent with seabird conservation.

B. Eradication of Exotic Species on Baja California Islands

A logical extension of the rat eradication efforts on Anacapa Island, as described previously, would be to extend such efforts into the southern range of the California Brown Pelican and other important injured California seabirds such as gulls, storm petrels, and Xantus's murrelets. A successful eradication program has previously been completed as a cooperative effort between Mexico and a U.S. conservation organization on Isla Rasa in the Gulf of California where most individuals of three important California seabird species nest: Heermann's Gull, Elegant Tern, and Royal Tern. Of these, the Heermann's gull was known to be injured by the *American Trader* oil spill. In addition, other conservation groups have also conducted several successful eradication programs of exotic species on important seabird nesting islands along the Pacific coast of Baja California; their work continues. Implementation of this project will ensure that such efforts continue by cooperatively funding these and similar projects to benefit Brown Pelicans and other species injured by the *American Trader* oil spill. Follow-up monitoring and management programs will be a required component of this project to ensure long term success.

C. Development and Implementation of Additional Projects targeting Brown Pelicans and other Injured Species in Mexico

In order to fully address restoration opportunities for injured resources that cross international boundaries, additional information on abundance, distribution and roost site characteristics will be collected, evaluated and integrated into the current OSPR and UCD database and made available to interested researchers and managers on colony and roost site characteristics throughout the range of the California Brown Pelican. This information will aid in planning future roost site restoration, protection, and management. This information will also be provided to be incorporated into the Brown Pelican Roost Site Atlas project and Colony Catalog described previously. As additional projects are identified based on new information or analysis they would be considered for implementation under this restoration plan, as appropriate.

4.4.3.4 Environmental Consequences (Adverse and Beneficial)

A. Beneficial effects. An effective restoration or protection effort for California's coastal Brown Pelicans and other injured bird species must necessarily take into account populations that freely and somewhat unpredictably (in relation to perturbations that might occur off the California and Baja California coasts) move up and down the Pacific coast across international boundaries as far south as southern Mexico and Central America and as far north as southern British Columbia. For example, since one can never be sure where a "California resident" or a "Mexican resident" Brown Pelican will be at any given time, approaching Brown Pelican problems by considering the entire subspecies would greatly benefit the development of long-term conservation and protection programs. Restoration activities that anticipate cross-border problems, along with cooperative programs to ensure that the governments of both California and Mexico are monitoring and protecting these migratory resources, will be directly beneficial

to Brown Pelican conservation by reducing human-caused stressors (for example: disturbance, egg collection, habitat destruction, predation by introduced non-native species) and indirectly beneficial by increasing knowledge about Brown Pelican habitat use. These actions will aid in the recovery of the injured Brown Pelican population to pre-spill conditions.

B. Adverse impacts. No negative environmental consequences are foreseen for activities described above with the exception of the rat eradication project. Adverse impacts would be similar to those described in Seabird Nesting Habitat Restoration Project described above.

4.4.3.5 Probability of Success

The probability of success is unknown; success largely depends on whether appropriate cooperative agreements can be made between the U.S. and Mexican governments to develop restoration and protection programs.

4.4.3.6 Performance Criteria and Monitoring

Public feedback and reaction will be the primary means of monitoring the success of educational activities. Educational programs will be updated as needed to meet the resource concerns of the area. Monitoring of colony success will be used to evaluate decreases in human caused adverse effects.

The success of the eradication of exotic species will be determined based on long term monitoring and management of the targeted islands. The efforts at Anacapa Island will be used as a model to determine the appropriate scale of evaluation.

4.4.3.7 Evaluation

Combining U.S. and Mexican efforts for the restoration of the California Brown Pelican and other injured seabirds throughout their range would greatly enhance long-term conservation and protection of this subspecies and aid in the recovery of the injured population to pre-spill conditions.

The Trustees have considered: technical feasibility, consistency with restoration goals, nexus to injured species, opportunities for multiple species benefits, likelihood of success, timeliness of providing benefits and duration of benefits. The Trustees have determined that these projects are consistent with these factors. Efforts will continue to be made to avoid or appropriately mitigate any adverse environmental impacts associated with this project. Issues related to cost, collaboration with partners including international partners, assurance of long term success and development of appropriate compliance with laws and safety will be considered during finalization and implementation of these projects and the Restoration Plan.

4.4.4 Public Education and Awareness

4.4.4.1 Goals and Nexus to Injury

The various elements of this project are related to projects described previously. They are grouped together for ease of presentation. They are not stand-alone projects and will not be implemented without main project implementation. The goal is to provide information to increase public awareness concerning restoration goals and conservation implications of the projects outlined in this plan as they relate to the injured resources. It is anticipated that education programs will also aid in reducing unnecessary human disturbance of seabirds and other wildlife resources and thus will assist our efforts to returning the populations to pre-spill conditions.

4.4.4.2 Background

Public education is an important component of this plan. Public information and education programs have played very important roles in increasing public awareness of marine conservation issues. The following projects are designed to inform the public, in particular the users and visitors to southern

California and Baja California coastal waters, about the restoration projects being implemented and the conservation goals they address. A collateral benefit will be that these programs will also educate the public about conservation issues affecting island and coastal ecosystems in general. Most of these projects are designed to (1) describe the restoration activities being undertaken, (2) give information about the negative impacts of human disturbance to seabird breeding colonies (i.e., nest abandonments, increased predation, increased chick mortality, etc., all resulting in lowered breeding success), and (3) identify measures that can be taken to avoid such disturbances.

4.4.4.3 Description/Methods

(1) Provide posters, brochures, videos, live video footage and other media material describing the habitat enhancement program on Anacapa Island and the benefits of rat removal to the Anacapa Island ecosystem, particularly to seabirds. Displays and educational materials will not only provide project-specific insights into Anacapa Island restoration, but will also describe the consequences and impacts of introduced species (both flora and fauna) on island ecosystems worldwide and, further, provide the public with information as to what can be done to avoid accidental introductions on Anacapa and other islands. Displays providing this information might appropriately be displayed at the Channel Islands National Park (CINP) Visitor's Center and become part of interpretive programs at the Visitor's Center, on boats transporting visitors to the islands, and on island interpretive walks. The documentary videos and live video feed could provide a unique opportunity for the public to experience the seabird colonies via the internet, and serve as an educational platform. The documentary video and live video feed concepts have been added to the final plan based on proposals received during the public comment period.

(2) In association with the Roost Site projects, we will provide interpretive signs at roost project sites informing the public of our actions at the site and of the Brown Pelicans' and other seabirds' need for undisturbed roosting and nesting habitat (see 4.4.1 Creation, Enhancement, and Protection of Brown Pelican Communal Roost Sites).

(3) In association with the Roost Site Protection projects, we will reprint a brochure that was designed, printed and distributed by Channel Islands National Marine Sanctuary in the early 1980s that informed the public about the hazards to pelicans and other seabird species of being hooked by fishing tackle or entangled by monofilament and what measures a fisherman should take when a pelican (or other seabird) is hooked. This brochure contains step-by-step procedures illustrated by photographs on how to handle a hooked pelican safely to avoid or minimize injury and how to extract the hook and release the bird; it has been out of print for several years now. If possible, it should be revised and reprinted or perhaps redesigned altogether. The brochures would then be distributed to marinas, bait shops, chandleries, CINP Visitor's Center, sportfishing vessels, and other locations frequented by fishermen.

(4) In association with the Anacapa Island Restoration Project and the Roost Site projects, we will provide leaflets, brochures, posters, and signs informing the public about the Brown Pelican closure area offshore the pelican breeding colony on West Anacapa Island (part of the Anacapa Island Ecological Reserve). The closure is a no-entry zone (closed between 1 January and 31 October) that provides a buffer to prevent negative impacts of human disturbance while also providing protection for newly-fledged pelican chicks (which tend to congregate within the closure boundaries). This closure has been a very important component of conservation measures taken to assure the long-term protection of the Anacapa Island pelican colony. Printed material should include a map showing the exact location of the no-entry zone, closure dates, text of the California Department of Fish and Game regulations that establishes the closure, and an explanation of why this area is closed and it's importance to pelican conservation. Leaflets should be available at CINP Visitor's Center, marinas, and other locations frequented by recreational boaters. Leaflets should also be distributed directly to boaters in Anacapa Island waters by National Park Service and California Department of Fish and Game patrol boats.

(5) In association with the Anacapa Island Restoration Project , we will place buoys with informative signs at the seaward corners of the Anacapa Island pelican closure so that boaters are aware of the closure and its boundaries. Commercial vessels and regular users of these waters are aware of the closure; most recreational boaters, however, are infrequent or often first-time users and have no knowledge of the closure.

(6) Other similar types of projects or locations will be considered, as appropriate, during the design and implementation phases.

4.4.4.4 Environmental Consequences (Adverse and Beneficial)

A. Beneficial effects. With information from these projects, the public will be more aware of the goals and objectives of our restoration actions, become more aware of seabird habitat requirements, become more cognizant of negative impacts of seabird-human interactions, and understand the impact of human activities (emphasizing introductions of predators) on seabird populations. As people become educated to the plight of wildlife and understand how and why human activities can harm wildlife, they generally respond by avoiding harmful activities. Thus, human-caused adverse impacts to feeding, breeding and other behaviors will be minimized. Additionally, a live video feed will enable researchers and the public to view the seabird nesting remotely, thereby reducing the physical disturbance from visitors to the island ecosystem.

For very little monetary output for signs and brochures, the conservation benefits of public information at sensitive pelican roost sites and seabird colony sites along the California and Baja California coast and in the Gulf of California would be invaluable. These measures would help promote public awareness and, thus reduce colony disturbances. With regard to the West Anacapa Island offshore pelican closure, placement of buoys would assist greatly in informing the public of its existence and in delineating the boundaries; this would also aid enforcement agencies.

When successful, these efforts will aid in assuring that the recovery of affected bird populations are not hampered by ongoing human disturbance.

B. Adverse impacts. Signs used in any of the above projects need to be carefully designed and placed so as not to detract from the natural aesthetics of any area. Open-air kiosks and signs are subject to vandalism. Similar displays in Oregon are insured; insurance costs for structures in California should therefore be incorporated into the costs of the project. Placing structures in open, well-traveled areas will reduce the risk of vandalism. Placement of the video cameras for the live video feed may disrupt nesting behaviors, but his impact may be minimized by placing and repairing cameras between nesting seasons. Buoys placed offshore West Anacapa Island must also be carefully designed and must not interfere with normal boating operations.

4.4.4.5 Probability of Success

Educational efforts, if done well, are almost always successful in that people will usually come away from the educational experience with new knowledge and a new appreciation of the subject considered. Education and awareness programs, including displays, signs, presentations, brochures, and media productions, nearly always attracts public attention. Informational and warning signs to protect seabird resources will no doubt result in educating the public resulting in avoiding behaviors which are detrimental to seabird resources.

4.4.4.6 Performance Criteria and Monitoring

Public feedback and reaction will be the primary means of monitoring the success of educational activities. Educational programs and awareness projects will continually evolve and be updated to meet the public's needs and demands and will be revised to keep the information current.

4.4.4.7 Evaluation

For a relatively little expenditure of funds, a great deal of information concerning seabird conservation issues can be disseminated through sound educational programs and materials; public awareness of the needs of seabirds and the importance of predator-free islands can also be greatly heightened with little expense. Public education and awareness projects as outlined above are important to the success of this plan.

The Trustees have considered: technical feasibility, consistency with restoration goals, nexus to injured species, opportunities for multiple species benefits, likelihood of success, timeliness of providing benefits, duration of benefits and potential for unacceptable adverse impacts. The Trustees have determined that these projects are consistent with these factors.

4.4.5 Western and Clark's Grebe Restoration

4.4.5.1 Goals and Nexus to Injury

The goal of this project is to increase Western and Clark's *(Aechmophorus sp.)* grebe populations by minimizing human disturbances to grebes at important nesting colonies. After scoters and pelicans, Western and Clark's grebes were the most prevalent beachcast species recovered by cleanup crews in the aftermath of the American Trader oil spill.

4.4.5.2 Background

This alternative was developed from a proposal submitted during the public comment period. Western and Clark's grebes breed on the edges of inland lakes and largely winter offshore along the Pacific Coast, where they are consistently one of the most commonly affected seabirds in oil spill incidents off California. In winter months, they are commonly observed in coastal bays and estuaries, and offshore just beyond the surf line. Currently, there are only a few major breeding sites in California (Eagle Lake, Klamath Basin, Clear Lake, Lake Almanor, and possibly Goose Lake, Honey Lake, and Topaz Lake), and some smaller scattered sites throughout various wetlands, especially in the Central Valley. The California grebe population represents a significant proportion of the entire United States grebe population.

Restoration options for grebe wintering areas offshore are limited. There are, however, potential effective restoration options for habitat enhancement at certain inland breeding grounds. Currently, human disturbance is a significant factor threatening grebe colonies during the nesting season. Since many of the major breeding sites lie within areas of substantial human recreation, primarily Clear Lake, Lake Almanor, Eagle Lake, and Topaz Lake, development and implementation of a plan that will minimize human disturbances to grebe breeding colonies during critical periods of the year could help to restore their population to pre-spill conditions.

4.4.5.3 Description and Methods

Disturbances from human recreational activities at key breeding colonies would be minimized by the following actions, which will be in place for a minimum of ten years.

A. Permanent buoys will be placed to mark off nesting areas susceptible to disturbances.

B. Marinas and other locations around lakes with important grebe nesting colonies will be provided with pamphlets to educate the public and encourage the public to take actions to avoid disturbances to nesting grebes and boat collisions with grebes and their young.

C. Educational signs will be designed and erected at public boat ramps and marinas as well as at private marinas were permission is granted. These signs will convey a similar message as that of the pamphlets.

D. Trained personnel will oversee colony protection and coordinate with other agencies regarding spraying for aquatic weed control and other actions that may impact nesting grebes.

E. A management plan will be developed for each colony and provided to local resource managers for implementation.

4.4.5.4 Environmental Consequences (Adverse and Beneficial)

A. Beneficial effects. By minimizing disturbances to grebes at their breeding colonies, it is anticipated that this would lead to an increase in nest productivity.

B. Adverse impacts. Signs will be carefully placed so as to not detract from the natural aesthetics of any area. Buoys placed in lakes must also be designed to minimize impacts on boat traffic and consider the safety concerns of boaters. As grebes nest along the shoreline, the buoys are thought to have a minimal impact on recreational boating.

Any decisions to alter planned spraying for aquatic weed control must be made in consultation with the responsible weed control agencies. In this way, any alteration to spraying plans will seek to minimize disturbances to nesting grebes while still achieving weed abatement goals.

4.4.5.5 Probability of Success

It is anticipated that this comprehensive approach will lead to a clear and measurable increase in productivity at targeted grebe colonies.

4.4.5.6 Performance Criteria and Monitoring

Surveys will be conducted to determine reproductive success and human disturbances at each of the targeted colonies.

4.4.5.7 Evaluation

With this project, the Trustees seek to address the injuries to grebes resulting from the American Trader oil spill. It is hoped that, as a result of this project, grebe populations may be restored to pre-spill conditions. The Trustees have considered: technical feasibility, consistency with restoration goals, nexus to injured species, opportunities for multiple species benefits, likelihood of success, timeliness of providing benefits, duration of benefits and potential for unacceptable adverse impacts.

4.5 Cumulative Effects

Cumulative environmental impacts are those which result from the incremental impact of the implementation of this restoration plan when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR section 1508.7). The goal of the Trustees is to make the public whole for injuries to bird-related natural resources by returning resources back to their baseline conditions and to compensate for interim losses which occur during the period of environmental recovery. Although this plan directs efforts at restoring injured resources and creating beneficial impacts to injured resources, many other local and regional actions serve to make it difficult to enhance bird-related natural resources in such a way as to create net significant population or species level beneficial impacts for seabirds throughout their range. In the case of seabirds in the Southern California Bight, serious threats to the health and abundance of birds will continue including the toxic effects of oil pollution, the adverse interactions with fishing activities and the stressor of habitat loss. Although the passage of the Oil Pollution Act in 1990 (after the *Exxon Valdez* and *American Trader* oil spills) was in part directed at preventing spills, it has not been possible to avoid oil pollution in the last decade. Fishing, including harvest of prey species and fishing practices such as light boats and gill nets, have continued to cause adverse impacts to bird populations in the Southern California Bight. Habitat loss will continue to

adversely effect bird resources as the region continues growing in human numbers and activities. Many of the affected bird species use geographic areas outside of the Southern California Bight including Mexico. Adverse impacts to species abundance and health resulting from coastal pollution, fishing practices and habitat degradation will likely continue even with the success of the implementation of this proposed restoration plan.

4.6 Other Alternatives Considered - Non Preferred Alternatives

While the projects described in Section 4.4 above are the focus of this plan, the following projects which are described in the *American Trader* Consent Decree and Settlement Agreement were also considered. Most of these are alternative projects to be considered in the event that any of the priority projects became infeasible, impractical or in some way could not be accomplished. The following is a description of the alternative projects which are not currently preferred alternatives.

4.6.1 Elkhorn Slough National Estuarine Research Reserve

4.6.1.1 General Description

Small numbers of pelicans roost in restored wetlands in the Elkhorn Slough National Estuarine Research Reserve. The island is, however, experiencing tidal erosion and is close enough to shore to make incursions from predators possible. Currently, plans have been proposed by the land manager to improve the island habitat by creating a wider and deeper channel between the island and the mainland, increase the surface area of the island, and stabilize the island against tidal erosion.

4.6.1.2 Evaluation

The Trustees evaluated this project since it was included as an alternate project in the Consent Decree and Settlement Agreement. However, it does not fully meet the initial screening criteria set forth in this plan to be considered a preferred alternative. Specifically, it is not consistent with our restoration goals since it would duplicate efforts already being undertaken.

4.6.2 Acquisition of Wetland Habitat

4.6.2.1 General Description

The acquisition or restoration of wetland habitat would assist in the restoration, replacement, or acquisition of the equivalent of the natural resources damaged by the oil spill by restoring or replacing damaged wetland habitat. The governments' plan is to acquire and/or restore former wetland acreage to expand existing reserves.

4.6.2.2 Evaluation

The Trustees evaluated this project since it was included as an alternate in the Consent Decree and Settlement Agreement. In addition, several proposals were received during the public comment period related to wetland acquisition, restoration and replacement in the Huntington Beach area including Big and Little Shell Wetlands and Talbert Marsh (see Appendix E). However, it does not fully meet the initial screening criteria set forth in this plan to be considered a preferred alternative. The expenditure of funds for wetlands acquisition would be prohibitively expensive and would duplicate efforts with other federal, state, and local wetland acquisition plans such as the Southern California Wetlands Recovery Project. Wetlands acquisition in the area immediate to the spill are particularly expensive due to the local real estate market, and does not provide an adequate nexus to the primary injured seabird species. The size of the settlement and the cost of land acquisition would result in precluding the implementation of other more beneficial projects presented in this draft restoration plan.

4.6.3 Removal of Introduced Predators on Santa Catalina and San Clemente Islands

4.6.3.1 General Description

Introduced species such as rats, cats, dogs, goats and other livestock are thought to have been responsible for about half of island bird extinctions worldwide. These same species have been inadvertently introduced into the Channel Islands including not only Anacapa Island (see previous

discussion), but also Santa Catalina and San Clemente Islands. These islands are much larger than Anacapa (Anacapa Island 700 acres; Santa Catalina 48,000 acres; San Clemente 36,000 acres). Bird species injured by the spill may have previously nested on these islands; however, little is known about historic use and non-native species are abundant. There is some evidence that Xantus's Murrelets may be present in low numbers with patchy distribution, at least on Santa Catalina Island (see Appendix A). Efforts are underway by both the Navy (San Clemente Island) and the Santa Catalina Island Conservancy (Santa Catalina Island) to manage or control various predator species on these islands.

4.6.3.2 Evaluation

It was determined to be infeasible or inadvisable for the Trustees to remove introduced species on Santa Catalina and San Clemente Island due the large size of the islands, the large cost of a removal effort and the limited potential for benefitting injured seabird resources on these islands. Other state or federal endangered and sensitive species also occur on these islands which would make the widespread use of rodenticides for rat removal dangerous to the survival of endemic foxes, loggerhead shrikes and other native species. These species are not present on Anacapa Island. Due to these constraints, the Trustees are not developing these projects further at this time.

4.6.4 Enhancement of Least Tern Habitat

4.6.4.1 General Description

The California Least Tern is a migratory bird that breeds in coastal southern California. Loss of nesting habitat, as well as human and predator disturbances within nesting areas have all contributed to the historic decline of this species. Efforts to provide nesting habitat that is secure from human disturbance and predator control have proven beneficial in increasing the population abundance through increased nesting opportunities and increased juvenile survival. Construction of new nesting habitat, enhancement of existing nesting habitat and providing funding to prolong local programs which have been established to increase populations would all serve to benefit California Least Terns in the spill area. Additionally, enhancement of food resources including anchovy and topsmelt populations may enhance their foraging efficiency.

4.6.4.2 Evaluation

Although the TC supports other efforts related to the conservation of the endangered California Least Tern, we have not considered any expenditure of funds to promote this species. Because of their migratory patterns, no Least Terns were present anywhere within the southern California bight during the spill event or cleanup period. Therefore, projects related to the California Least Tern do not meet the screening criteria requiring a nexus to the injured resources. In summary, this project was not considered further because it did not meet the following criteria: (a) consistency with Trustees' restoration goals and (b) relationship to injured resources or services.

4.6.5 Installation of Trash Booms in Sensitive Wetland Areas

4.6.5.1 General Description

Ninety-three (93%) of the coastal marshes in the Southern California Bight have been impacted in the past century by development and fill. The remaining fragile tidal marshes require care and protection from the debris generated by the 15 million people in the Los Angles and San Gabriel Watershed. Non-point source pollution has several impacts to wildlife including ingestion of plastics, entanglement in debris and smothering of shoreline areas. Much of the debris entering the marshes could be prevented by the installation and maintenance of a boom system.

4.6.5.2 Evaluation

The Trustees evaluated this project concept as several commenters advocated funding trash boom projects and one proposal for a trash boom project was submitted during the public comment period. The Trustees determined that benefits would be limited to small numbers of brown pelicans and gulls. We believe expenditure of funds to create beneficial population level effects through the creation or

enhancement of night roosts and nesting habitat is more effective than using funds to benefit a small number of individuals (see Section 4.2.).

4.6.6 Wildlife Rehabilitation Center

4.6.6.1 General Description

Use of settlement funds to support wildlife care centers in the Huntington Beach area would aid birds injured as a result of future oil spills and other events. The outreach activities of the center would educate the public about the threats to wildlife.

4.6.6.2 Evaluation

The Trustees evaluated this option as several commenters suggested that American Trader restoration funds be used to support wildlife rehabilitation centers in the Huntington Beach area and two proposals requesting using American Trader funds to support the Wetlands and Wildlife Care Center of Orange County were submitted during the public comment period (see Table 3 and Appendix E). In California, oiled bird rehabilitation programs are funded by spill response funds. As a result of the American Trader oil spill, over $630,000 were refunded to the trustee agencies to defer previously spent response costs, including certain rehabilitation related costs. The Oiled Wildlife Care Network that has been created in California continues to receive funding from the State Oil Spill Response Trust Fund. The Trustee Council has determined that funds related to rehabilitation and response activities are already available statewide, therefore, this project does not fully meet our screening criteria for preferred projects which states that projects in the plan should not duplicate efforts of ongoing projects.

5 Coordination with Other Programs, Plans and Regulatory Agencies

5.1 Overview

Two major laws guiding the restoration of the injured resources and services for the *American Trader* oil spill are CEQA and NEPA. They set forth a specific process of impact analysis and public review. In addition, the Trustees must comply with other applicable laws, regulations and policies at the federal, state and local levels. The potentially relevant laws, regulations and policies are set forth below.

In addition to laws and regulations, the Trustees must consider relevant environmental or economic programs or plans that are ongoing or planned in or near the affected environment. The Trustees must ensure that their proposed restoration activities neither impede nor duplicate such programs or plans. By coordinating restoration with other relevant programs and plans, the Trustees can enhance the overall effort to improve the environment affected by the oil spill.

5.2 Key Statutes, Regulations and Policies

5.2.1 Trans-Alaska Pipeline Authorization Act, 43 U.S.C. §§ 1651, *et seq.*

The Trans-Alaska Pipeline Authorization Act, enacted as part of the legislation which authorized the construction of the trans-Alaska oil pipeline, establishes a comprehensive liability scheme applicable to damages resulting from the transportation of trans-Alaska pipeline oil. Damages include injuries to fish, wildlife, biotic or other natural resources. This Act does not provide any guidance concerning restoration of the injured resources.

5.2.2 California Environmental Quality Act (CEQA)

The California Environmental Quality Act (Pub. Res. Code §§ 21000-21178.1), commonly referred to as CEQA, was adopted in 1970 and applies to most public agency decisions to carry out, authorize or approve projects that may have adverse environmental impacts. CEQA requires that agencies inform themselves about the environmental effects of their proposed actions, consider all relevant information, provide the public an opportunity to comment on the environmental issues, and avoid or reduce potential environmental harm whenever feasible.

The CEQA process begins with a preliminary review as to whether CEQA applies to the project in question. Generally, a project is subject to CEQA if it involves discretionary action by an agency that may cause a significant effect on the environment. Once the agency determines that the "project" is subject to CEQA, the lead agency must then determine whether the action is exempt under either a statutory or categorical exemption, 14 Cal. Code Regs. 15061.

If the lead agency determines that the project is not exempt then an initial study must be prepared to determine whether the project may have a potentially significant effect on the environment. 14 Cal. Code Regs. § 15063. To meet the requirements of this section, the lead agency may use an environmental assessment prepared pursuant to NEPA. Based on the initial study, the lead agency determines the type of CEQA documentation that will be prepared. The test for determining whether an environmental impact report (EIR) or negative declaration must be prepared is whether a fair argument can be made based on substantial evidence that the project may have a significant adverse effect on the environment. Pub. Res. Code § 21068, 14 Cal. Code Regs. § 15063.

The State lead agency (CDFG) considers a number of these projects to be categorically exempt pursuant to: (1) 14 Cal. Code of Regs. Section 15304, "Minor alterations to land, water, or vegetation"; (2) 14 Cal. Code of Regs. Section 15307, "Actions by regulatory agencies for protection of natural resources", and (3) 14 Cal. Code Regs. Section 15308, "Actions by regulatory agencies for the protection of the environment." Nonetheless, the State lead agency, in coordination the Federal Trustees, decided to proceed with further CEQA documentation which will address all projects implemented as part of the final Restoration Plan. The Trustees have integrated this Restoration Plan with the NEPA and CEQA processes to comply, in part, with those requirements.

This RP/EA is intended to address the initial study requirements under CEQA by: (1) summarizing the current environmental setting, (2) describing the purpose and need for restoration action, (3) identifying alternative actions, (4) assessing the preferred actions' environmental consequences, and (5) summarizing opportunities for public participation in the decision process. Project-specific NEPA and CEQA documents may be needed for some of the proposed restoration projects. Other projects may fall within an existing EIS or EIR.

CEQA encourages the use of an EIS or finding of no significant impact or combined state/federal documents in place of a separate EIR or negative declaration. Pub. Res. Code §§ 21083.5, 21083.7, 14 Cal. Code Regs. §§ 15221-15222. The State lead agency intends to use an EIS or finding of no significant impact in place of a separate EIR or negative declaration.

5.2.3 California Harbor and Navigation Code § 294

Harbors and Navigation Code § 294 creates absolute liability for damages from the discharge or leaking of natural gas, oil, or drilling waste onto marine waters. Damages include cost of wildlife rehabilitation, and injury to natural resources or wildlife, and "loss of use and enjoyment of public beaches and other public resources or facilities." § 294(g)(l)

5.2.4 California Lempert - Keene - Seastrand Prevention and Response Act, Government Code § 9574.1, *et seq.*

Lempert - Keene - Seastrand Oil Spill Prevention and Response Act, commencing with § 8574.1, became effective on September 24, 1990, seven months after the *American Trader* oil spill. This legislation has become the key state compensatory mechanism for subsequent spills. It establishes a comprehensive liability scheme for damages resulting from marine oil spills. Recoverable damages include injury to natural resources, cost of wildlife rehabilitation, and loss of use and enjoyment of natural resources, public beaches, and other public resources.

5.2.5 National Environmental Policy Act (NEPA), as amended, 42 USC 4321, *et seq.*, 40 CFR

Parts 1500-1508

Congress enacted NEPA in 1969 to establish a national policy for the protection of the environment. NEPA applies to federal agency actions that affect the human environment. NEPA established the Council on Environmental Quality (CEQ) to advise the President and to carry out certain other responsibilities relating to implementation of NEPA by federal agencies. Pursuant to Presidential Executive Order, federal agencies are obligated to comply with the NEPA regulations adopted by the CEQ. These regulations outline the responsibilities of federal agencies under NEPA and provide specific procedures for preparing environmental documentation to comply with NEPA. NEPA requires that an Environmental Assessment (EA) be prepared in order to determine whether the proposed restoration actions will have a significant effect on the quality of the human environment.

Generally, when it is uncertain whether an action will have a significant effect, federal agencies will begin the NEPA planning process by preparing an EA. The EA may undergo a public review and comment period. Federal agencies may then review the comments and make a determination. Depending on whether an impact is considered significant, an environmental impact statement (EIS) or a Finding of No Significant Impact (FONSI) will be issued.

The Trustees have integrated this Restoration Plan with the NEPA and CEQA processes to comply, in part, with those requirements. This integrated process allows the Trustees to meet the public involvement requirements of NEPA and CEQA concurrently. The RP/EA is intended to accomplish partial NEPA and CEQA compliance by: (1) summarizing the current environmental setting, (2) describing the purpose and need for restoration action, (3) identifying alternative actions, (4) assessing the preferred actions' environmental consequences, and (5) summarizing opportunities for public participation in the decision process. Project-specific NEPA and CEQA documents may be needed for some of the proposed restoration projects. Other projects may fall within an existing EIS or EIR.

5.2.6 Clean Water Act (CWA) (Federal Water Pollution Control Act), 33 USC 1251, *et seq.*

The CWA is the principal law governing pollution control and water quality of the nation's waterways. Section 404 of the law authorizes a permit program for the disposal of dredged or fill material into navigable waters. The U.S. Army Corps of Engineers (Corps) administers the program. In general, restoration projects which move material into or out of waters or wetlands -- for example, hydrologic restoration of marshes -- require Section 404 permits.

Under Section 401 of the CWA, restoration projects that involve discharge or fill to wetlands or navigable waters must obtain certification of compliance with state water quality standards. Generally, restoration projects with minor wetlands impacts (i.e., a project covered by a Corps general permit) do not require Section 401 certification, while projects with potentially large or cumulative impacts must undergo a certification review.

5.2.7 Coastal Zone Management Act (CZMA), 16 USC 1451, *et seq.*, 15 CFR Part 923

The goal of the federal CZMA is to preserve, protect, develop and, where possible, restore and enhance the nation's coastal resources. The federal government provides grants to states with federally-approved coastal management programs. The State of California has a federally-approved program. Section 1456 of the CZMA requires that any federal action inside or outside of the coastal zone that affects any land or water use or natural resources of the coastal zone shall be consistent, to the maximum extent practicable, with the enforceable policies of approved state management programs. It states that no federal license or permit may be granted without giving the State the opportunity to concur that the project is consistent with the state's coastal policies. The regulations outline the consistency procedures.

The Trustees do not believe that any of the proposed projects will adversely affect the state's coastal zone. However, to comply with the CZMA, the Trustees intend to seek the concurrence of the State of

California that their preferred projects are consistent to the maximum extent practicable with the enforceable policies of the state coastal program.

5.2.8 Endangered Species Act (ESA), 16 USC 1531, *et seq.,* 50 CFR Parts 17, 222, 224

The federal ESA directs all federal agencies to conserve endangered and threatened species and their habitats and encourages such agencies to utilize their authorities to further these purposes. Under the Act, the National Marine Fisheries Service (NMFS) and the USFWS publish lists of endangered and threatened species. Section 7 of the Act requires that federal agencies consult with these two agencies to minimize the effects of federal actions on endangered and threatened species. Prior to implementation of these projects, the Trustees will conduct Section 7 consultations in conjunction with Essential Fish Habitat (EFH) consultation.

As noted in the draft RP/EA, several federal and state-listed species frequent the areas impacted by the oil spill. They are also in areas where the Trustees are considering restoration projects. Some listed species, such as the Brown Pelican, will benefit from the proposed restoration projects. Should it be determined that any of the proposed projects will adversely affect a threatened or endangered species, the Trustees will either redesign the project or substitute another project.

5.2.9 California Endangered Species Act, Fish and Game Code §§ 2050 *et seq.*

It is the policy of the State of California that state agencies should not approve projects as proposed which would jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species if there are reasonable and prudent alternatives available. If reasonable alternatives are infeasible, individual projects may be approved if appropriate mitigation and enhancement measures are provided. Under this act, the Fish and Game Commission established a list of threatened and endangered species based on criteria recommended by the Department of Fish and Game.

5.2.10 Magnuson-Stevens Fishery Conservation and Management Act, 16 USC 1801 *et seq.*

The federal Magnuson-Stevens Fishery Conservation and Management Act as amended and reauthorized by the Sustainable Fisheries Act (Public Law 104-297) establishes a program to promote the protection of essential fish habitat (EFH) in the review of projects conducted under federal permits, licenses, or other authorities that affect or have the potential to affect such habitat. After EFH has been described and identified in fishery management plans by the regional fishery management councils, federal agencies are obligated to consult with the Secretary of Commerce with respect to any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken, by such agency that may adversely affect any EFH.

The Trustees believe that the proposed restoration projects will have no adverse effect on EFH and will promote the protection of fish resources and EFH. The Trustees will consult with the National Marine Fisheries Service prior to implementation of any restoration project occurring in an area covered by the Pacific Fishery Management Council.

5.2.11 Fish and Wildlife Coordination Act (FWCA), 16 USC 661, *et seq.*

The federal FWCA requires that federal agencies consult with the USFWS, NMFS, and state wildlife agencies for activities that affect, control or modify waters of any stream or bodies of water, in order to minimize the adverse impacts of such actions on fish and wildlife resources and habitat. This consultation is generally incorporated into the process of complying with Section 404 of the Clean Water Act, NEPA or other federal permit, license or review requirements.

5.2.12 Rivers and Harbors Act, 33 USC 401, *et seq.*

The federal Rivers and Harbors Act regulates development and use of the nation's navigable waterways. Section 10 of the Act prohibits unauthorized obstruction or alteration of navigable waters and vests the

Corps with authority to regulate discharges of fill and other materials into such waters. Restoration actions that require Section 404 Clean Water Act permits are likely also to require permits under Section 10 of the Rivers and Harbors Act. However, a single permit usually serves for both. Therefore, the Trustees can ensure compliance with the Rivers and Harbors Act through the same mechanism.

5.2.13 Marine Mammal Protection Act

The Marine Mammal Protection Act was passed in 1972 to provide certain protections to species of marine mammals that may be adversely impacted by man's activities. The Congress recognized the importance of marine mammals and their place in their ecosystem and put restrictions on their take (both intentional and incidental), placed restrictions on modification of their habitat, identified that additional research on marine mammals was warranted, and found that international agreements to further protect populations that move freely through the world's oceans were needed. This Act states that marine mammals should be protected and encouraged to develop and that the primary objective of their management should be to maintain the health and stability of the marine ecosystem.

5.2.14 Executive Order (EO) 12898 - Environmental Justice

On February 11, 1994, President Clinton issued EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. This EO requires each federal agency to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority and low income populations. EPA and the CEQ have emphasized the importance of incorporating environmental justice review in the analyses conducted by federal agencies under NEPA and of developing mitigation measures that avoid disproportionate environmental effects on minority and low-income populations. The Trustees have concluded that there are no low income or ethnic minority communities that would be adversely affected by the proposed restoration activities.

5.2.15 Executive Order (EO) 11988 -- Construction in Flood Plains

This 1977 Executive Order directs federal agencies to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of flood plains and to avoid direct or indirect support of development in flood plains wherever there is a practicable alternative. Each agency is responsible for evaluating the potential effects of any action it may take in a flood plain.

Before taking an action, the federal agency must determine whether the proposed action will occur in a flood plain. For major federal actions significantly affecting the quality of the human environment, the evaluation will be included in the agency's NEPA compliance document(s). The agency must consider alternatives to avoid adverse effects and incompatible development in flood plains. If the only practicable alternative requires siting in a flood plain, the agency must: (1) design or modify the action to minimize potential harm, and (2) prepare and circulate a notice containing an explanation of why the action is proposed to be located in the flood plain. The Trustees have determined that none of the proposed projects is located in a flood plain.

5.2.16 Public Resources Code, Division 6, §§ 6001 *et seq.*

The Public Resources Code, Division 6, gives the State Lands Commission trustee ownership over State sovereign tide and submerged lands. Permits or leases may be required from the State Lands Commission if a restoration project is located on such lands.

5.2.17 Other Potentially Applicable Laws and Regulations

This section lists other laws that potentially affect NRDA restoration activities. The statutes or their implementing regulations may require permits from federal or state permitting authorities.

- Archaeological Resources Protection Act, 16 USC 470, *et seq.*
- National Historic Preservation Act of 1966 as amended (16 USC 470-470t, 110)

- Clean Air Act, 42 USC 7401, *et seq.*
- Migratory Bird Treaty Act, 16 USC 703, *et seq.*

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APPENDIX A: Reports of Restoration Planning Activities
Part 1:

Breeding Success of Brown Pelicans on West Anacapa Island, California, in 1999

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West Anacapa Island, part of the Channel Islands National Park (CINP), is the location of the largest, most consistent Brown Pelican (*Pelecanus occidentalis californicus*) colony in the Southern California Bight (SCB) (Anderson and Gress 1983, Gress and Anderson 1983, Gress 1995); in the SCB, nesting also occurs on Santa Barbara Island (also part of CINP) and Islas Los Coronados (located in Baja California waters just south of San Diego). In addition, a colony located on Isla San Martín (at the southern terminus of the SCB) had a small nesting effort in 1999 (less than 25 nests; E. Palacios, personal communication); this colony has not been active since at least 1974 (Anderson and Gress 1983, Gress and Anderson 1983, Everett and Anderson 1991, D.W. Anderson, personal communication). Brown Pelicans nested in relatively large numbers on West Anacapa Island in 1999; from about 5,300 nest attempts on Anacapa Island, an estimated 3,020 young fledged. Productivity was therefore 0.57 young fledged per nest attempt (see Anderson and Gress 1983 and Gress and Anderson 1983 for discussions of Brown Pelican productivity), about 9.5 percent less than the 1976-1998 mean, but not significantly different (0.63 ± 0.11 95% CI).

Initiation of breeding activities (i.e., male solicitation, copulation, and initial nest-building) in 1999 began in early February, typical for Anacapa Island (F. Gress unpublished). Brown Pelicans, however, are highly asynchronous nesters; the breeding season on Anacapa Island can begin as early as late December to as late as mid-May (see Gress and Anderson 1983, Gress and Martin 1998), and egg-laying can occur over a period of 2 - 6.5 months (the extremes for egg-laying dates since 1970; Anderson and Gress 1983, F. Gress unpublished). In 1999, egg-laying commenced about 7 February, approximately one week following initiation of breeding activities. Egg-laying continued until mid-July, an unusually late egg-laying date. The first chicks were hatched in early March; hatching continued to mid-August. Fledging began on 6 June and continued to early November (3 nearly-fledged chicks appearing to be in good condition remained in the colony on 5 November, our last day of field work for 1999, and were assumed to have fledged shortly thereafter). Thus, the 1999 pelican breeding season, from initiation of breeding activities to last fledging, was about ten months in length, one of the longest on record for Anacapa Island (F. Gress unpublished).

While the number of nest attempts in 1999 was relatively high, this breeding effort was characterized by a high chick mortality rate (35 percent) and moderately high nest abandonment (47 percent), resulting in a fairly low productivity figure. Nest abandonment generally occurs in response to reduced local food supplies (i.e., food supplies available to nesting pelicans). While the 1999 nest abandonment rate appears high, it is still about 11 percent lower than the 1976-1998 mean (53.2 ± 7.4 95% CI). The Anacapa Island colony (as well as other SCB colonies) has consistently shown low productivity (F. Gress unpublished) when compared with the colonies of California Brown Pelican on the islands in the Gulf of California where the majority of the subspecies breeds (see Anderson and Gress 1983, Gress and Anderson 1983, D.W. Anderson unpublished). Fluctuating availability of food resources at critical times in the SCB is believed to be the primary cause of nest abandonment and chick mortality that results in low productivity (Anderson *et al.* 1980, 1982, Anderson and Gress 1983, 1984). Chick mortality in 1999 was the third highest since we began collecting mortality data in 1980, and was 37 percent higher than the 1980-1998 mean (21.6 ± 6.7 95% CI).

The young-fledged-per-successful-nest rate (excludes nest abandonment) for 1999 was a very low 1.08,

one of the lowest figures since 1976; this was about 19 percent lower than the 1976-1998 mean (1.34 ± 0.23 95% CI). The low 1999 rate suggests that chick mortality occurred at a relatively constant rate throughout the breeding season; there appeared to be no "big die-offs". The young-fledged-per-successful-nest rate on Anacapa Island is usually in the range of 1.3 - 1.5 (F. Gress unpublished), which generally reflects a low chick mortality rate even if nest abandonment is high. Nests are abandoned when food resources decrease to a level where adult pelicans become food stressed. A higher young-fledged-per-successful-nest rate indicates that pelicans which are successful (i.e., successfully raise at least one chick to fledging) are usually very successful, even in times of reduced food resources; some adult pelicans are simply more adept in finding food and raising their young than others. Thus, even in times of severe food shortages some pairs show good productivity. It is highly unusual for a young-fledged-per-successful-nest rate to be lower than 1.10 (this has occurred twice on Anacapa since 1976). The lower rates suggest that while there were proportionately more successful pairs than in years with a higher rate, their eventual breeding success was low because of increased chick mortality.

High chick mortality is usually associated with a severe (and often sudden) reduction of food supplies as a result of changing oceanographic conditions, particularly in warm water "El Niño" years (see Anderson *et al.* 1980, 1982, Anderson and Gress 1983, 1984, Gress and Anderson 1983). However, "La Niña" cold water conditions prevalent during 1999 were generally favorable to good productivity for marine wildlife throughout the SCB; with these conditions, good food availability for pelicans resulting in increased reproductive success (and thereby, lower chick mortality) would be expected. This was the case in the Gulf of California and along the Pacific coast of Baja California: with high levels of food available and favorable oceanographic conditions, Brown Pelican reproductive success was at near-record levels (D.W. Anderson unpublished), in contrast to the Channel Island colonies. An unexpected variable in 1999, however, was the presence of an intense squid fishery just offshore both the Anacapa and Santa Barbara island pelican colonies that was active throughout the breeding season. This is usually a fall fishery and has therefore not posed problems to nesting seabirds in previous years, but in 1999 squid population levels in the Channel Island area were unusually high throughout the year. This fishery utilizes intense light (up to 100,000 watts per vessel) to attract squid throughout the night in waters less than 20 fathoms in depth, which at Anacapa Island includes waters up to about one-fourth mile from shore. Usually accompanying each purse seiner are several smaller vessels (light boats) whose sole purpose is to provide more light; often several of these "fleets" work in the same area. Continuous intense light (where night becomes day), as well as the noise and disturbance from this fishery on most nights throughout the pelican breeding season may have had deleterious effects on reproductive success and perhaps was a factor in a lower than expected level of productivity in 1999. A cause and effect relationship has not been established. In the event that this fishery continues to be active offshore the Channel Islands during the seabird breeding season, it is important that continuous reproductive data be collected and research efforts be initiated to examine this problem; in addition, appropriate conservation measures should be enacted to protect not only Brown Pelicans, but other seabird species as well.

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APPENDIX A: Reports of Restoration Planning Activities Part 2:

Post-breeding Brown Pelican Distribution and Roost Habitat Use in California, 1999

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Crescent Coastal Research
April 19, 2000

Broad-Scale Distribution and Habitat Use

Brown pelican distribution, abundance and roost habitat use in California during the post-breeding period was assessed by a statewide coastal aerial survey, August 25-31, 1999. The survey was scheduled to coincide with peak abundance and northward dispersal of pelicans from breeding populations in the Southern California Bight (SCB) and Mexico, and was coordinated with similar aerial surveys in Oregon and Washington. Survey methods were described in Jaques *et al.* (1996). All roosting habitat along the mainland coast was successfully observed, however, coverage of the Channel Islands was incomplete due to storm activity around the islands. Only data for the mainland coast are presented here.

Numbers of pelicans were greatest in central California, where 69% of the total occurred, and lowest in southern California, which held only 11% of the state total (Table 1). The southern California coastal count was similar to that of August 1992, which is the only other directly comparable data available (Jaques *et al.* 1996). Within each region, 93-95% of all pelicans counted nearshore were inactive at coastal roosts. Exceptionally large concentrations of birds occurred in central and northern California between 1) Pismo Beach and Morro Bay, 2) Point Lobos and Elkhorn Slough, and 3) Point Bonita to Bodega Bay. Pelicans were spread out at a number of roosts within these areas, and were often associated with active foraging activity. No large feeding aggregations were noted south of Point Conception and distribution within southern California was fairly even overall, with the exception of particularly low numbers in Orange County. Distribution in southern California appeared to be largely based on location of quality roost sites, rather than areas of prey concentration, as was seen in central California.

The distribution of immature pelicans was heavily skewed to the north (Table 1). The ratio of immature to adult birds was the highest ever observed in central and northern California (see Jaques 1994) and reflected the extremely good productivity observed in the Gulf of California in 1999 by D.W. Anderson (personal communication; see also Appendix A, Part 1 of this document).

Roost habitat use was similar in north and central California, where offshore rocks and natural substrates in estuaries held the majority of birds (Table 2). In southern California, artificial structures supported 73% of all roosting pelicans, which was higher than the average recorded on artificial structures during 1992-93 (Jaques *et al.* 1996). Nine roost sites in southern California were occupied by more than 100 pelicans, with the largest single aggregation in Ventura County at the Rincon oil production island (Table 3). Twenty-four roost sites in central California held more than 100 pelicans, and 8 of these contained more than 1,000 pelicans.

Table 1. Distribution and abundance of Brown Pelicans along the California coastal mainland during aerial surveys, August 25-31, 1999. Coastal divisions were Point Conception and Point Reyes Headlands.

California Mainland Region	Total Adults at Roosts (%)	Immature (%)	Grand Total
Southern	2,604 (80.0)	1,297 (20.0)	2,787
Central	16,818 (61.4)	7,570 (38.6)	17,956
Northern	4,918 (44.9)	2,471 (55.1)	5,240

Table 2. Brown Pelican roost habitat use along the California mainland coast during aerial surveys, August 25-31, 1999.

	Percent of Total		
	South	Central	North
Offshore Rock	0.3	54.2	46.2
Cliff or Rocky Shoreline	2.9	3.8	0.0
Beach	11.7	0.0	0.0
River mouth	10.1	7.7	1.2
Creek mouth	0.0	1.9	0.1
Lagoon	6.6	1.7	0.0
Estuary	0.0	20.0	40.2
Jetties	15.2	10.0	9.4
Breakwaters	26.3	0.0	6.1
Other man-made Structures	31.3	0.7	2.4
Sample size	2,604	16,818	4,918

Use of Individual Roost Sites

Selected roost sites in southern and central California were observed from the ground during September 9-14, 1999 to update and gain additional information on the status of sites proposed for restoration treatments in the American Trader Consent Decree.

Zuniga Point Observations took place on a rising tide and confirmed that pelican numbers using the jetty declined as much of the structure became submerged. The nearest alternate roost site was a boat

launch at Shelter Island where pelicans were actively engaged in scavenging and taking hand-outs from fishermen; a classic example of the type of situation that can ultimately result in negative impacts on pelicans.

Agua Hedionda Lagoon. Dawn and dusk observations confirmed that the site was used as a night roost and that pelican use was limited by the number of stable floating structures. Age-related dominance hierarchy was displayed as some incoming immature pelicans were prevented from roosting by adults. After numerous attempts to find suitable roost substrate in the lagoon, late arriving juveniles were forced to depart the area in search of another site at dusk.

Other Southern California Lagoons. Very few pelicans occurred in other southern California lagoons during the 1999 ground and aerial surveys. Physical changes at several lagoons since 1992 appeared to have had negative impacts on roost habitat.

Dana Point Harbor. The jetty at Dana Point Harbor remained one of the largest roost sites in southern California and was the essentially the only site used in Orange County. Pelicans were observed to be very tolerant of close approaching watercraft, but additional observations are needed to assess the issue of human disturbance by fisherman using the jetty.

Rincon Island. This privately owned structure has become the most important roost site in the eastern Santa Barbara Channel, following the elimination of three other privately owned roost sites in the Ventura-Santa Barbara area. Night roost status of the structure could not be ascertained from the mainland. Due to the physical configuration of the roost site, adequate observations could not be conducted from the island without flushing pelicans from the roost. The use of a viewing blind or boat may be necessary for further evaluation of this site.

Santa Barbara Harbor. Pelican numbers in the Santa Barbara area were very low, during both aerial and ground based surveys. There has been no replacement for the privately owned structures in the outer harbor that formerly supported hundreds to thousands of pelicans in 1992. Small numbers of pelicans used a dredging boat in the inner harbor and the beach at Point Castillo. Pelican abundance along the Santa Barbara County coast during the aerial survey was lower than in any other complete survey of the same area during the early 1990's, and may reflect the decline in roost site availability.

Shell Beach Rocks. Shell Beach was one of the most heavily used regions of the California coast during both ground and aerial surveys. The area appeared to be associated with abundant food resources. Nest construction and an unusual amount of breeding behavior were exhibited on the only vegetated islet. The close proximity to shore and major recreation areas continues to make the Shell Beach Rocks vulnerable to disturbance. Observations were not sufficient to evaluate current disturbance frequencies. The possibility of future breeding expansion into this area makes additional protection of the roost particularly critical.

Moss Landing. Recent habitat changes at the Moss Landing Wildlife Area have improved roost quality over the late 1980's and early 1990's. Natural erosion of the outer levee of the remnant salt ponds has created an island suitable for daytime roosting, and water level management by Snowy Plover researchers allowed pelicans to roost overnight in one of the flooded ponds during September 1999. About 1,300 pelicans were present in the pond at dawn on September 10. This was the highest known count recorded at the site since 1987. Several pelicans standing in the water at dawn were trembling, which may have indicated an energetic drain associated with standing in cold water overnight. The positive response of pelicans to the inadvertent changes in habitat were encouraging, however, additional effort is still needed to maintain and restore the site to it's former quality and capacity.

Table 3. Large roost sites in southern California, defined as sites where >100 pelicans were present during aerial or ground surveys, August-September, 1999.

Roost Site	Habitat Type	Aerial Count	Ground Count
Zuniga Point	Jetty	221	51
Agua Hedionda Lagoon	Man-made structures	116	179
Dana Point Harbor	Jetty	124	141
Los Angeles Harbor	Breakwaters	112	N.D.
Marina del Rey	Breakwater	N.D.	299
Santa Clara River	River mouth	151	N.D.
Ventura Harbor	Breakwater	237	274
Rincon Island	Man-made structure	429	359
Santa Barbara Harbor	Man-made structure/Beach	58	60
Coal Oil Point Platform	Man-made structure	160	N.D.

References

Jaques, D. L. 1994. Range expansion and roosting ecology of non-breeding California Brown Pelicans. Unpublished M.S. thesis. University of California, Davis, CA. 73 pp.

Jaques, D.L., C.S. Strong and T.W. Keeney. 1996. Brown Pelican roosting patterns and responses to disturbance at Mugu Lagoon and other nonbreeding sites in the Southern California Bight. Unpublished report. Natl. Biol. Serv., Cooperative Natl. Park Serv. Resources Studies Unit, University of Arizona, Tuscon, AZ. Tech. Report No. 54. 62 pp.

APPENDIX A: Reports of Restoration Planning Activities Part 3:

Progress Report (May 5, 2000)
Baseline Population Data on Xantus's Murrelets at Anacapa Island, California, in 2000

H.R. Carter, D. Whitworth, R.T. Golightly, T.E. Hamer, D. Meekins, F. Gress, S. Fangman and A. Petusky

Project Collaborators:
Humboldt State University,
Hamer Consulting,
California Institute of Environmental Studies,
Channel Islands National Marine Sanctuary

Overview: Radar installation on the R/V Ballena (CINMS Research Vessel) occurred on 4-5 April with a successful test run at Santa Cruz Island on 6-7 April. Anacapa fieldwork in 2000 was originally scheduled for 10-14 April, 18-22 April, 24-28 April, and 2-6 May (n=16 nights over 20 Ballena days). High wind conditions occurred between 18-28 April which precluded some fieldwork, restricted areas of operation, and caused much adjustment of schedules. In addition, the Ballena anchoring system needs modification to facilitate safe anchoring in less protected conditions at Anacapa Island. Better weather has occurred since 1 May and fieldwork is still continuing.

Data gathered to date have established that radar surveillance is an effective tool for obtaining baseline data on Xantus's Murrelets at Anacapa Island. Other forms of data supplement and assist interpretation of radar results. Spotlight surveys also show promise as a new tool for assessing colony attendance. Data gathered have been sufficient to determine that larger numbers of Xantus's Murrelets occur at Anacapa Island than previously thought. Fieldwork has occurred during the incubation period when most of the population should be attending the colony. Limited control data also were gathered at Santa Barbara and Santa Catalina islands. Highlights are provided below:

Radar: Five complete nights of radar surveillance were conducted from the R/V Ballena at Anacapa Island, plus 1 night at Santa Barbara island and 1 night at Santa Catalina Island. In addition, about 8 hours of daytime radar work was conducted to confirm species identifications. A peak of 282 murrelet trackings was documented at East Fish Camp on 4/20-21, compared to 388 trackings at Santa Barbara Island on 4/12-13. Numbers of trackings were affected by weather conditions and orientation of the boat to shore. Modification of radar mounting location on the Ballena, improvement of the Ballena anchoring system to facilitate stern anchoring, and installing of stabilizers to reduce Ballena rolling, would improve murrelet tracking with radar by reducing radar signal clutter and allow better data collection under a wider range of weather conditions and geographic locations. Murrelet trackings at Santa Catalina Island on 4/26-27 confirmed colony attendance by moderate numbers of murrelets.

Vocalization Surveys: Four complete nights of surveys were conducted from a Zodiac at Anacapa Island which generally showed a positive correlation with radar trackings. A peak count of about 130 detections occurred at East Fish Camp which was slightly lower than previous surveys.

Spotlight Surveys: Ten transects were conducted at Anacapa Island where murrelets were counted with a spotlight from a Zodiac. Peak counts on 1-2 May were: 129 murrelets on the south side of East Anacapa; 24 murrelets on the north side of East Anacapa; and 16 murrelets on the south side of Middle Anacapa.

At-sea Captures: A total of 69 murrelets were captured using the nightlighting technique: 31 at Anacapa Island; 26 at Santa Barbara Island; and 12 at Santa Catalina Island. Only one murrelet at Santa Barbara had brood patches. Two recaptures of birds banded in 1995-1997 occurred at Santa Barbara Island. One murrelet with a small spot of oil was captured at Anacapa Island.

Sea Cave Nest Surveys: Eleven nests were found in sea caves with known nesting in the past at Anacapa Island. Some caves with previous nesting were empty. No murrelets were handled and none were flushed from nests during surveys. About 4-5 eggs appeared to have been depredated by rats. Other nests have remained active and probably will hatch. Overall timing of breeding seemed similar to Santa Barbara Island.

APPENDIX A: Reports of Restoration Planning Activities Part 4:

Anacapa Island Restoration Progress Report August 1999 - May 2000

Gregg Howald, Project Leader

Introduction
This summary is intended to update the American Trader Council members on the progress of the project between August 1999 and January 2000. The project has been subdivided into 5 major components: eradication (logistics), NEPA compliance, EPA registration (permit), research and monitoring and public education. Advances in all areas have been made and are reported here.

Eradication (logistics)
Analysed available rodenticides to identify appropriate active ingredient for Anacapa.
Working with a rodenticide manufacturer to develop a bait.

Identified aerial applicator and assessed their abilities including certification, equipment and cost.

Hosted New Zealand rat eradication specialist, November 1999

Attended Pacific Seabird Group Meeting in February 2000 to discuss rodenticide registration issues with other stakeholders on other islands in the Pacific.

Attended the Vertebrate Pest Conference, March 2000, to present project proposal, and identify further contacts which may assist in project development. Hosted an evening of brainstorming and discussion about project proposal.

Hosted 9 national and international vertebrate control/eradication specialists on Anacapa Island to discuss the issues and project.

EPA Registration
Discussions held with Cal EPA and Fed EPA regarding rodenticide registration for conservation use.

WASO IPM, National Park Service consultation for concurrence with the AIRP.

Registration package for submission has been prepped, reviewed, and awaiting Draft EIS before submission.

NEPA
Environmental Impact Statement is in prep., Draft expected mid June 2000.

The project went public in November 1999, with interest from the media.

A public meeting was held on December 8 in Ventura.

Research and Monitoring

Phase 1 of Pre-eradication research - Fall 1999

Mice, landbirds, herpetofauna monitoring
Primary and secondary poisoning studies
Hosted Dick Veitch, New Zealand eradication specialist
Hosted Chris Gill of the Predatory Bird Research Group Nov. 99
Fall 1999 R&M Data Analysis and Reporting

Phase 2 of pre-eradication research - Spring 2000

Mice, landbirds, herpetofauna monitoring
Primary and secondary poisoning studies
Lizard Research - UC Santa Cruz
East/Middle Isthmus Rat Radio-Telemetry Study
Spring 2000 R&M Data Analysis and Reporting

The first of many scheduled field trips to Anacapa was completed in mid-December 1999. We established permanent monitoring stations on all three islets for mice, birds and the herpetofauna. Baseline data was collected for individual or groups of species which are expected to respond favorably with the eradication, including mice, landbirds and herpetofauna.

To identify species at risk from incidental poisoning, stations were established to monitor piles of unarmed bait, and snap trapped rats and mice. Bait and carcasses were observed from a distance throughout the day to identify scavenging species. The data is currently being analyzed, and will be summarized in a future report.

Dick Veitch, from New Zealand, joined us in the field for an overnight look at Anacapa in mid-November. We discussed our plans for the eradication and his insight has proven valuable toward the development of this project.

Development of mitigation measures for raptors and other species were further developed with discussions from professionals within the Fish and Wildlife Service and Predatory Bird Research Group. A representative of the PBRG visited Anacapa in November to discuss the project and offer suggestions for mitigation and offer assistance in implementing.

The Uta sp. lizard monitoring was initiated in the early spring on Anacapa Island. Cooperation with this aspect of the project was carried out by Dr. Barry Sinervo of the University of California, Santa Cruz.

Public Education

As part of the agreement between the CHIS NP and the council, the public outreach products are currently under development, including the web based documents.

Presentations were given at the Ventura Audubon Society, March 14, 2000 and at UC Davis, March 15, 2000.

APPENDIX B: Consent Decree/Settlement Agreement

[To settle the litigation between the BP Companies and the Governments, the United States and the BP Companies have entered into this Consent Decree while the State Agencies, Local Governments, and BP Companies have entered into a similar Settlement Agreement. The text of the Settlement Agreement mirrors the Consent Decree and is not reproduced here.]

This Consent Decree ("Decree") is entered into by the United States of America ("United States") and BP America, Inc., BP Oil Supply Company, and BP Oil Shipping Company, USA (collectively referred to as "BP" or "BP Companies").

Introduction

On February 7, 1990, the steam tanker AMERICAN TRADER ran aground on one of its anchors at the Golden West Marine Terminal, causing Alaska north slope crude oil to spill from the ship's tanks into or upon waters, beaches, and other Natural Resources near Huntington Beach, California, and requiring cleanup of the spilled oil. The United States asserts that the oil covered approximately sixty square miles of ocean and washed ashore along approximately fourteen miles of beaches, injuring birds and fisheries and other Natural Resources.

AMERICAN TRADER was owned by American Trading Transportation Company ("Attransco") on the day of the spill, and had Mooring Master John Keon aboard for the purpose of bringing the tanker into the offshore terminal which was leased and operated by Golden West Refining Company ("Golden West"). Golden West hired Robert Brandenburger of Brandenburger Marine, Inc. to assign mooring masters to particular mooring jobs at the offshore terminal.

AMERICAN TRADER's crude oil cargo was to be delivered to Golden West pursuant to a crude oil sales contract between Golden West and BP Oil Supply Company. BP alleges that at the time of the Oil Spill, BP Oil Supply Company was the title owner of the oil aboard the AMERICAN TRADER.

BP Oil Shipping Company, USA was the time charterer of the AMERICAN TRADER on February 7, 1990.

BP America, Inc. represents that it is an indirect parent of BP Oil Supply Company and BP Oil Shipping Company, USA.

The United States, on behalf of the United States Department of Commerce, the United States Department of the Interior, the United States Navy, the United States Coast Guard, and all interested federal governmental agencies, has filed, simultaneously with the lodging of this Consent Decree, an action in federal district court against BP America, Inc., BP Oil Supply Company, and BP Oil Shipping Company, USA seeking, under the Clean Water Act, 33 U.S.C. §§ 1251, et seq. ("Clean Water Act") and other federal statutory and maritime law, inter alia, Natural Resources Damages and Response Costs.

The United States, on behalf of the United States Department of Commerce, the United States Department of the Interior, the United States Navy, the United States Coast Guard, and all interested federal governmental agencies, has filed an action in federal district court against the steam tanker AMERICAN TRADER, in rem; Attransco; Golden West; Brandenburger Marine, Inc.; the Assuranceforeninger Gard, the AMERICAN TRADER's liability insurer; and the Trans-Alaska Pipeline Liability Fund, created by the Trans-Alaska Pipeline Authorization Act, 43 U.S.C. §§ 1651, et seq. ("TAPAA"). The United States' action seeks, under the Clean Water Act, TAPAA, and other federal statutory and maritime law, inter alia, Natural Resources Damages and Response Costs. United States v. The Steam Tanker, AMERICAN TRADER *et al.*, United States District Court for the Central District of California Case No. CV 91-3363.

The State of California ex rel. the California Department of Fish and Game, the Department of Parks and Recreation, the Regional Water Quality Control Board, Santa Ana Region, the State Coastal Conservancy, and the State Lands Commission ("State Agencies") and the City of Huntington Beach, the City of Newport Beach, the Orange County Flood Control District, and the County of Orange ("Local Governments") have filed an action in Superior Court against Golden West, Attransco, BP, and Brandenburger Marine, Inc., seeking, inter alia, Natural Resources Damages and Response Costs. People of the State of California, *et al.*, v. BP AMERICA, Inc. *et al.*, Orange County Superior Court Case No. 64-63-39.

The State Agencies and the Local Governments have also filed an action in federal district court against the Trans-Alaska Pipeline Liability Fund under TAPAA for, inter alia, Natural Resources Damages and Response Costs. People of the State of California, *et al.*, v. Trans-Alaska Pipeline Liability Fund, United States District Court for the Central District of California Case No. CV 92-0837.

It is the legal position of the United States that only officials of the United States designated by the President and state officials designated by the Governors of the respective states are entitled to act on behalf of the public as trustees of Natural Resources to recover Natural Resources Damages resulting from the Oil Spill under Section 311(f) of the Clean Water Act, 33 U.S.C. § 1321(f).

The United States, the State Agencies, and the Local Governments (collectively, the "Governments") have proposed certain Restoration projects to Restore Natural Resources injured as a direct result of the Oil Spill. The Governments deem the proposed projects reasonable and necessary measures to Restore these Natural Resources.

The Parties desire to avoid the costs and risks of further litigation and believe that resolution of this dispute without protracted litigation to be in the best interests of the public.

To settle all of the pending litigation between the BP Companies and the Governments, the State Agencies, Local Governments, and BP Companies have entered into the Settlement Agreement that is Attachment 2 to this Decree (the "Settlement Agreement") and the United States and the BP Companies have entered into this Decree.

The Parties recognize that this Decree is a settlement of a contested matter and that neither the payment nor the acceptance of any consideration represents an admission of liability or responsibility by any Party. This Decree is without prejudice to the rights and defenses of the Parties hereto to any claims or causes of action against Non-Settling Parties.

NOW, THEREFORE, it is hereby ORDERED, ADJUDGED, and DECREED as follows:

JURISDICTION

1. This Court has jurisdiction over the subject matter and over the parties to this action pursuant to 28 U.S.C. §§ 1331, 1333, 1345, and 33 U.S.C. §§ 1319 and 1321. Venue is proper in this Court pursuant to 28 U.S.C. § 1391(b). The United States' Complaint states claims upon which relief may be granted.

PARTIES BOUND

2. This Consent Decree shall apply to and be binding upon and inure to the benefit of the United States and the BP Companies, and each of them, and their present and former officers, directors, employees, and agents.

DEFINITIONS

3. Whenever the following terms are used in this Decree, they shall have the following meanings:

(a) "Claims Against BP for Contribution" means claims or causes of action, originating under federal, state, or maritime law, now or in the future, by Non-Settling Parties against any of the BP Companies for equitable comparative contribution; partial, comparative, or total indemnity; contribution; or equitable indemnity which arise from or are related to the Governments' claims for damages caused by the Oil Spill, except that claims based upon a written express indemnity agreement are not included within the scope of this definition.

(b) "Final Approval" means the earliest date on which all of the following have occurred:

(1) The Superior Court has found that the Settlement Agreement (attached to this Decree as Attachment 2) was made in "good faith" as that term is used in section 877.6 of the California Code of Civil Procedure and determined that all Claims Against BP for Contribution asserted or capable of assertion in state court are barred as a result of the Settlement Agreement and all applicable appeal periods have expired without an appeal being filed, or, if an appeal is taken, the Superior Court's judgment has been upheld on appeal and either the time for further appeal has expired without the filing of a further appeal or no further appeal is allowed; and,

(2) All Claims Against BP for Contribution in pending suits in state court have been dismissed with prejudice and all applicable appeal periods have expired without an appeal being filed, or, if an appeal is taken from the dismissal, the judgment has been upheld on appeal and either the time for further appeal has expired without the filing of a further appeal or no further appeal is allowed (it is understood that the term "appeal" is meant to include any applications for a writ from a state appellate court); and,

(3) The United States District Court for the Central District of California has entered this Decree.

(c) "Natural Resource" and "Natural Resources" mean land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States (including the resources of the fishery conservation zone established by the Magnuson Fishery Conservation and Management Act of 1976, 16 U.S.C. §§ 1801 et seq.) and the State of California and its agencies.

(d) "Natural Resources Damages" means civil compensatory and remedial relief recoverable by the Governments on behalf of the public for injury to, destruction of, or loss of any or all Natural Resources resulting from the Oil Spill, including (1) costs of damage assessment, including related enforcement costs, (2) compensation for loss, injury, impairment, damage or destruction of Natural Resources, whether temporary or permanent, or for loss of use value (active and passive), consumer surplus, economic rent, or any other similar value of Natural Resources, and (3) costs of restoration, rehabilitation, or replacement of injured Natural Resources or the acquisition of equivalent resources.

(e) "Non-Settling Parties" means all persons and entities who are not parties to this Decree or the Settlement Agreement, including but not limited to (i) defendants in United States District Court for the Central District of California Case No. CV 91-3363 or any case consolidated with that action, and/or (ii) defendants in Orange County Superior Court Case No. 64-63-39 or any case consolidated with that action.

(f) "Oil Spill" means the grounding of the steam tanker, AMERICAN TRADER, on February 7, 1990 at the Golden West Marine Terminal and the resulting oil spill and response activity.

(g) "Party" or "Parties" mean the BP Companies, and each of them, and the United States.

(h) "Restore" or "Restoration" mean any action to restore to its pre-spill condition any Natural Resource injured, lost, or destroyed as a result of the Oil Spill and the services provided by that Natural Resource, or which restores, replaces, rehabilitates, or acquires the equivalent of, the injured, lost, or destroyed Natural Resource and affected services.

(i) "Response and/or Cleanup Costs" mean response and/or cleanup costs incurred by the Governments in responding to the Oil Spill, including but not limited to actions taken to remove and clean up the spilled oil.

(j) "Superior Court" means the Superior Court for the County of Orange.

SETTLEMENT PAYMENT BY BP

4. BP shall pay to the Governments the sum of $3,894,246 (the "Settlement Amount") in the manner set forth in paragraphs 5, 6, and 7 of this Decree.

5. Within thirty (30) days of the date of notice to BP that all signatories have executed the Settlement Agreement (attached as Attachment 2) and this Decree, BP shall pay the Settlement Amount into the BP Settlement Escrow Account as described in paragraph 6 of this Decree.

ESTABLISHMENT OF SETTLEMENT ESCROW ACCOUNT AND SETTLEMENT DISTRIBUTION FUND

6. BP shall establish or cause to be established an escrow account at a federally-chartered bank (the "BP Settlement Escrow Account") to receive and hold the Settlement Amount and all interest accumulated on the Settlement Amount pending Final Approval or termination of this Decree. The BP Settlement Escrow Account shall earn a rate of interest not less than the rate on 90-day Treasury Bills, and all interest earned thereon shall be for the benefit of and paid to the Governments, except that if the Settlement Amount is returned to BP as a result of termination of this Decree, all interest thereon shall be

for the benefit of and paid to BP.

7. The Governments shall establish or cause to be established a separate escrow or court registry account (the "BP Settlement Fund") to receive and distribute the Settlement Amount and all interest accumulated on the Settlement Amount. Within fifteen (15) days after Final Approval, BP shall instruct the escrow holder holding the BP Settlement Escrow Account to irrevocably transfer the Settlement Amount plus all accrued interest on the Settlement Amount to the BP Settlement Fund created under this paragraph. After deposit of the Settlement Amount, plus all interest accumulated on this sum, to the BP Settlement Fund, the Governments shall allocate and disburse the Settlement Amount, plus all interest accumulated on this sum, as follows:

(a) The sum of $2,484,567 plus all interest accumulated on this sum shall be deposited into a natural resources damages account and shall be used to Restore bird-related Natural Resources impacted by the Oil Spill. The Governments currently plan to use the funds deposited into the Natural Resources Damages Account as follows:

(1) For the improvement of the South Jetty at North Island, San Diego, to restore day and night roosting habitat for the Brown Pelican and other marine birds, as more fully described in Attachment 1;

(2) For a multi-year Brown Pelican and marine bird predator control project or projects for Southern California islands within the national boundaries of the United States, as more fully described in Attachment 1;

(3) For the purchase and installation of structures to serve as artificial roosts for Brown Pelicans and other marine birds, as more fully described in Attachment 1;

(4) For jetty security projects for Brown Pelicans and other marine birds, as more fully described in Attachment 1;

(b) The sum of $400,000.00 plus all interest accrued on this sum for a fish hatchery program at Aqua Hedionda Lagoon to rear white seabass for replacement of those impacted by the Oil Spill;

(c) The sum of $300,000.00 plus all interest accrued on this sum for ocean and coastal pollution mitigation and monitoring projects to be administered by the Southern California Coastal Water Research Project;

(d) The sum of $79,680 plus all interest accrued on this sum for certain revenue losses incurred by the California Department of Parks;

(e) The sum of $630,000 plus all interest accrued on the sum for certain Response Costs of the State Agencies and Local Governments.

8. The Governments commit to the expenditure of the funds set forth in paragraph 7 (a) and (b) above, for the design, implementation, permitting, and monitoring of Restoration projects. If one or more of the projects listed in paragraph 7 (a) is not carried out for any reason, the Governments currently plan to carry out one or more of the alternate projects described in Attachment 1. Nonetheless, the Governments retain the ultimate authority and responsibility to determine the use of funds received for Natural Resources Damages in accordance with the provisions of the Clean Water Act, other relevant federal or state law, and the regulations governing use of recoveries for Natural Resources Damages. If, in applying the provisions of the Clean Water Act and other applicable federal and state law including the aforementioned regulations, and examining the scientific and engineering objectives of the planned Restoration projects, and taking into account the available funds, the Governments determine to expend funds in a manner different from that described in paragraph 7 (a) or (b) or in Attachment 1, the Governments will provide an explanation of their decision to BP and will proceed with other Restoration projects that the Governments deem to be reasonable and necessary to restore Natural Resources directly impacted by the Oil Spill. Following commencement of the Restoration Projects, the United States will advise BP, upon reasonable request, of the status of the projects.

RELEASES AND COVENANTS NOT TO SUE

9. Effective upon Final Approval and BP's payment of the Settlement Amount in the manner prescribed in paragraph 5, 6, and 7 of this Decree, the United States releases BP from, and covenants not to sue or take any other civil or administrative action against BP for, any and all civil claims by the United States, arising from or based upon the Oil Spill, whether legal, equitable, statutory, or in

admiralty, of which the United States knew or which the United States could have alleged based solely on documentation, data, or information available to the United States on or before the date of lodging of this Consent Decree, including without limitation, any and all civil claims under the Clean Water Act and maritime law that are alleged in the complaint of the United States in this action. For the purposes of this paragraph, "BP" includes present and former directors, officers, shareholders, and employees of the BP Companies.

10. Effective upon Final Approval, BP releases the United States from, and covenants not to sue or to take any other civil or administrative action against the United States for any and all civil claims that arise from, or are based on, the Oil Spill. For the purposes of this paragraph, "United States" includes present and former employees of the United States.

DISMISSAL OF ACTIONS AND CLAIMS

11. Upon entry of this Consent Decree as an Order of the Court (a) this Decree shall become effective and constitute a final judgment between and among the United States and the BP Companies and (b), upon BP's payment of the Settlement Amount in accordance with paragraphs 5, 6, and 7 of this Decree, each of the claims for relief by the United States against BP in this action are, and shall be, dismissed with prejudice and without an award of costs or attorney's fees to any Party.

12. Upon entry of this Consent Decree as an Order of the Court, Claims Against BP for Contribution pending in federal court are, and shall be, dismissed with prejudice.

13. BP agrees to support any motion or pleading the United States files in seeking entry of this Decree.

THIRD PARTY LITIGATION

14. The Parties agree that they will not tender each other to any third party as direct defendants in any action relating to or arising from the Oil Spill pursuant to Rule 14(c) of the Federal Rules of Civil Procedure.

RESERVATION OF RIGHTS

15. Except as expressly stated in this Decree, each Party reserves against all Non-Settling Parties all rights, claims, or defenses available to it arising from or relating to the Oil Spill. Without limiting the generality of the foregoing, the BP Companies have not compensated the United States for any Response Costs or damage assessment costs, including related enforcement costs, and the United States expressly reserves its rights to pursue those claims against Non-Settling Parties. Similarly, this Decree is not intended to prejudice BP's rights to recover from Non-Settling Parties for its losses related to the Oil Spill.

16. Nothing in this Decree creates, nor shall it be construed as creating, any claim in favor of any person not a party to this Decree.

17. The covenants not to sue in paragraph 9 above shall apply only to matters in paragraph 9 and shall not apply to the following claims:

(a) Claims based on a failure of BP to satisfy the requirements of this Decree, and

(b) Claims for criminal liability brought by the United States.

18. Nothing in this Decree shall affect the subrogation rights, if any, of the Trans-Alaska Pipeline Liability Fund against any Non-Party or Party to this Decree. Neither the existence or non-existence of such subrogation rights shall affect or preclude Final Approval as defined in this Decree.

NOTICES AND SUBMITTALS

19. Whenever, under the terms of this Decree, written notice is required to be given by one Party to another, it shall be directed to the individuals and addresses specified below, unless the individuals specified or their successors give notice, in writing, to the other Parties that notice should be directed to a different individual or address.

Notice to the United States:
Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Ben Franklin Station
Washington, D.C. 20044

Robert R. Klotz
Environment and Natural Resources Division
United States Department of Justice
301 Howard Street, Suite. 870
San Francisco, CA 94105

Philip A. Berns
Attorney in Charge
U.S. Department of Justice
Torts Branch, Civil Division
P.O. Box 36028
450 Golden Gate Avenue, 10th Floor
San Francisco, CA 94012-3463

Notice to BP:
General Counsel
BP America, Inc.
200 Public Square
Cleveland, Ohio 44114

ELECTION TO TERMINATE

20. Any Party may elect to terminate this Decree if, prior to Final Approval, (i) a final judicial determination is made by any court of competent jurisdiction that this Agreement will not be approved in state court as a good faith settlement under Section 877.6 of the California Code of Civil Procedure, or (ii) a final judicial determination is made by any such court that Claims Against BP for Contribution asserted or assertable in state court are not barred by this settlement, or (iii) the United States District Court for the Central District of California makes a final determination that this Decree will not be entered as an order of the Court. A Party electing to terminate this Decree must do so within fifteen (15) days after the final judicial determination specified in the preceding sentence, and shall immediately notify the other Parties to this Decree (and the parties to the Settlement Agreement) of such election in writing by hand delivery, facsimile, or overnight mail. Termination of this Decree by one Party shall effect termination as to all Parties. For purposes of this paragraph, "termination" and "terminate" shall mean the cessation, as of the date of notice of such termination, of any and all rights, obligations, releases, and covenants under this Decree.

REPRESENTATIVES

21. Each undersigned representative of the BP Companies certifies that he or she is fully authorized to enter into the terms and conditions of this Decree and to execute and legally bind her or his respective Parties to this Decree.

INTEGRATION CLAUSE

22. This document (including its attachments) encompasses the entire agreement of the Parties with respect to the subject matter hereof and totally supersedes all prior agreements or understandings, whether oral or in writing.

MODIFICATION

23. Minor modifications not materially altering this Decree may be effected by the written agreement of the Parties. No other modifications of this Decree may be made unless the Parties agree in writing to the modification and the Court approves of the requested modification. Nothing in this paragraph shall be deemed to limit the Court's power to supervise or modify this Consent Decree.

Dated and entered this _____ day of _____, 1994.

_____
HONORABLE ROBERT J. KELLEHER
UNITED STATES DISTRICT JUDGE

WE HEREBY CONSENT to the entry of this Decree:

FOR THE UNITED STATES OF AMERICA:

By: _____
LOIS J. SCHIFFER
Acting Assistant Attorney General
Environment and Natural Resources Division
United States Department of Justice

By: _____
FRANK W. HUNGER
Assistant Attorney General
Civil Division
United States Department of Justice

BY: _____
ROBERT R. KLOTZ
Environmental Enforcement Section
Environment and Natural Resources Division
United States Department of Justice
301 Howard Street, Suite. 870
San Francisco, CA 94105

BY: _____
PHILIP A. BERNS
Attorney in Charge
U.S. Department of Justice
Torts Branch, Civil Division
P.O. Box 36028
450 Golden Gate Avenue, 10th Floor
San Francisco, CA 94012-3463

FOR THE BP COMPANIES:

By: _____

BP America, Inc.
BP Oil Supply Company
BP Oil Shipping Company USA

Attachment 1 BP Consent Decree

Priority Projects The Governments currently plan to carry out the following four Restoration projects:

I. Improvement of the South Jetty at North Island, San Diego (Zuniga Point Jetty)

Like many waterbirds, the California Brown Pelican has been impacted by intensive human uses of the Southern California coastline. Roosting by pelicans in coastal wetlands, estuaries, spits, river mouths, and sand bars has been precluded in many areas by housing and commercial development, marinas, boating, aircraft, domestic animals, and other activities.

Pelicans require open, disturbance-free roosting sites where they can rest and preen between foraging forays and during the night.

The Zuniga Point Jetty in San Diego County is presently a submerged jetty forming the southern border of the mouth of San Diego Bay. The approximately 2286-meter long rock jetty, when above water, is an excellent roost site for pelicans and other birds. Over 700 pelicans have been counted roosting on the jetty at low tide. At high tide, however, water covers much of the jetty to a depth of between three and ten feet, eliminating most of the structure as a roost. In particular, the water level at high tide prevents birds from using the jetty as a night roost, the scarcest and most important kind of roost for pelicans and other birds during the non-breeding season.

To create sufficient roost capacity for pelicans and other birds, the governments plan to repair and build up three, 100-meter long sections of the jetty at the three outermost lighted markers on the jetty (stations 68+50, 54, and 40). These three built-up sections will provide sufficient roosting capacity at high tides for the numbers of pelicans that have tried to use the jetty as a roost. The outer stations will be built up to minimize the chance that humans or predators will reach the built-up areas from shore.

II. Creation or Maintenance of Artificial Floating Roost

The governments plan to create permanent floating roosts for pelicans and other birds at locations along the southern California coast where the lack of natural roosts and suitable artificial roost sites has prevented pelicans from roosting and created overcrowded conditions on the limited space available. In the Agua Hedionda Lagoon, in San Diego county, pelicans now roost on floating artificial structures in the lagoon, but in crowded conditions causing severe competition for space. Similarly, in the outer harbor of the Santa Barbara harbor, over 1300 pelicans have been seen roosting on one private barge, but no permanent, publicly managed roost exists. The governments plan to place permanent and secure floating roost sites at these locations.

III. Jetty Security Projects

In addition to islands and breakwaters, pelicans and other birds roost on the tips of peninsulas, sand spits, and artificial jetties. ("Breakwater" here refers to structures not attached to land and "jetty" refers to structures attached to land.) In southern California, pelicans are attempting to use the tips of jetties as roosts, but are frequently flushed by human disturbances. The governments plan to fence and post the tips of jetties to create secure roosting space while minimizing the amount of the jetty restricted from human access. Signs in English and Spanish will designate the areas as closed wildlife areas and explain the purpose of the closure.

The following areas have been selected for jetty security projects: (1) Oceanside Harbor Jetty, (2) Dana Point Harbor Jetty, (3) King Harbor Jetty, (4) Marina del Rey Breakwater, (5) Channel Islands Harbor Breakwater, and (6) Ventura Harbor Breakwater.

IV. Predator Control Projects

The elimination of introduced predators such as rats is one of the most effective restoration measures for enhancing seabird habitat. Early in this century, European rats were introduced to Anacapa Island and quickly became well established in the absence of rat predators such as raccoons, skunks, or foxes. There is evidence of rat predation on Brown Pelican eggs and the rats have probably eliminated other bird species. There is also evidence of rat activity on smaller San Clemente and Santa Catalina Islands in the Southern California Bight. The governments plan to control introduced predators

on Anacapa, San Clemente, and Santa Catalina Islands with an intensive trapping program.

Alternative Projects If one or more of the above projects becomes infeasible or impracticable, the Governments currently plan to carry out one or more of the following projects:

V. Moss Landing Wildlife Salt Ponds

The Moss Landing Wildlife Area by the Elkhorn Slough in Monterey County is owned and managed by the California Department of Fish and Game. The western-most portion of the property near the mouth of the slough was once covered by large numbers of abandoned salt evaporation ponds. This artificial habitat served as a night roost for very large numbers of brown pelicans. Recently, however, as the salt pond levee system deteriorated and as the ponds drained, the pelicans abandoned the roost.

The California Department of Fish and Game has constructed artificial habitat where some of the salt ponds were located. This habitat includes a pond with an island to serve as a pelican night roost. The governments propose to fence the pelican habitat area in the Moss Landing Wildlife Area to keep red foxes out of the habitat and to reduce the disturbances caused by people.

VI. Elkhorn Slough National Estuarine Research Reserve

Pelicans have attempted to roost at an island in the Elkhorn Slough National Estuarine Research Reserve. The island is, however, experiencing tidal erosion and is close enough to shore to make incursions from predators possible. The governments propose to improve the island habitat by creating a wider and deeper channel between the island and the mainland, increase the surface area of the island, and stabilize the island against tidal erosion.

VII. Acquisition of Wetland Habitat

The acquisition or restoration of wetland habitat would assist in the restoration, replacement, or acquisition of the equivalent of the natural resources damaged by the Oil Spill by restoring or replacing damaged wetland habitat, providing habitat for black skimmers killed by the spill, and providing habitat for other birds. Shoreline wetlands provide important habitat for a variety of marine life and roosting habitat for brown pelicans and other birds. The governments plan to acquire and/or restore former wetland acreage to expand existing reserves.

APPENDIX C: Trustee Funded Report on Pelican Rehabilitation

Anderson, D.W., F. Gress, and D.M. Fry. 1996. Survival and dispersal of oiled Brown Pelicans after rehabilitation and release. Marine Pollution Bull. 32:711-718.

Pergamon

PII: S0025-326X(96)00027-6

Marine Pollution Bulletin, Vol. 32, No. 10, pp. 711–718, 1996

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Survival and Dispersal of Oiled Brown Pelicans after Rehabilitation and Release

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California brown pelicans (*Pelecanus occidentalis californicus*) were exposed to oil spills just prior to the 1990 breeding season and during the 1991 breeding season in the Southern California Bight (SCB); some were captured, rehabilitated (cleaned and given veterinary care) and released (total = 31 colour- and radio-marked + 81 colour-marked only; = RHB). Nineteen unoiled controls (= CON) from the SCB population, but from an unaffected area, were captured, radio-marked (11) and/or colour-marked (8) in 1990. Despite extensive surveys in the Gulf of California and western Baja California (latitude 23° to 30°N), all radio signals, recoveries and sightings were on the Pacific Coast between 30° and 47°N from 1990–1992. After release and until radio-telemetry data ceased to provide a complete sampling of RHB and CON (after about 6 months), RHB pelicans disappeared at a higher rate than CON; a continuing lower survival of RHB was also indicated from independent sightings of colour-marked pelicans by late 1992. RHB pelicans showed no breeding activity (or even presence or association with breeding colonies) in both years. In contrast, expected proportions of radio-marked CON pelicans were active at breeding colonies in 1990, and the general brown pelican population (which acted as controls in 1991) was active at breeding colonies in 1991. Post-breeding dispersal occurred as expected (mostly to the north) in 1990 and 1991 with CON. RHB pelicans remained sedentary in the SCB for at least 5–6 months in 1990 but dispersed north ahead of CON (as expected for non-breeders) in 1991, apparently in response to building ENSO (El Niño/Southern Oscillation) conditions in the SCB 1991–1992. RHB pelicans (1990) tended to remain farther away from the breeding colonies than CON (1990) in their second post-rehabilitation breeding season. At that time, their dispersal behaviour was similar to that expected for non-breeding adults and juveniles. We conclude that oil and/or rescue and treatment result in long-term injury to brown pelicans, and that current efforts do not restore them to breeding condition or normal survivability. Copyright © 1996 Elsevier Science Ltd

Marine birds have been fouled with crude oil and other petroleum products for decades; many survive long enough to be captured, cleaned and released (Bourne, 1970; Cowell, 1976; Marion, 1989). Yet, follow-up studies are seldom conducted (Collins *et al.*, 1994). Our major objective here was to evaluate post-release survival and dispersal in rehabilitated (RHB) California brown pelicans (*Pelecanus occidentalis californicus*), a recovering endangered species (Gress & Anderson, 1983). Our opportunity arose with the occurrences of two oil spills in the Southern California Bight (SCB; 7 February 1990, affecting about 185 pelicans and 3 April 1991, affecting about 25 pelicans; no. 1, Fig. 1A). We examined the following null hypotheses: *1.* that survival of post-release, RHB adult brown pelicans would be comparable to that of untreated (control = CON) adults; *2.* that dispersal patterns of RHB pelicans would be similar to those of CON pelicans; and *3.* that dosed/RHB adult pelicans would show breeding activities equivalent to those of untreated adults in the breeding seasons of their release.

Materials and Methods

Captive care and handling

Seabird rehabilitation techniques used during the restoration phases of the two oil spills are described by White (1990, 1992) and Welte & Frink (1991). In brief, this care included: *1.* plumage restoration by removal of fouling agents, along with indications of regrowth of damaged and missing plumage, and *2.* health restoration through medical treatment, intensive care and abundant food to restore body weight and condition. Blood chemistry values in the ranges for normal individuals, normal behaviour, and body mass comparable to healthy birds were required before release. Age-classes of individuals in captivity and in the field were determined from plumage patterns (Schreiber *et al.*, 1989). Birds were held in captivity about 2 (1991) to 3 (1990) weeks.

One week prior to release, we weighed and measured RHB pelicans and either: *1.* banded and colour-marked or *2.* banded, colour-marked and fitted each bird with a radio transmitter. In the 2 years of study, 31 RHB pelicans were fitted with radio transmitters and an additional 81 banded and colour-marked only (including 19 juveniles). RHB pelicans were released in San Pedro Bay, California (latitude 33.7°N, Fig. 1A). This site was selected because it was an important night roost

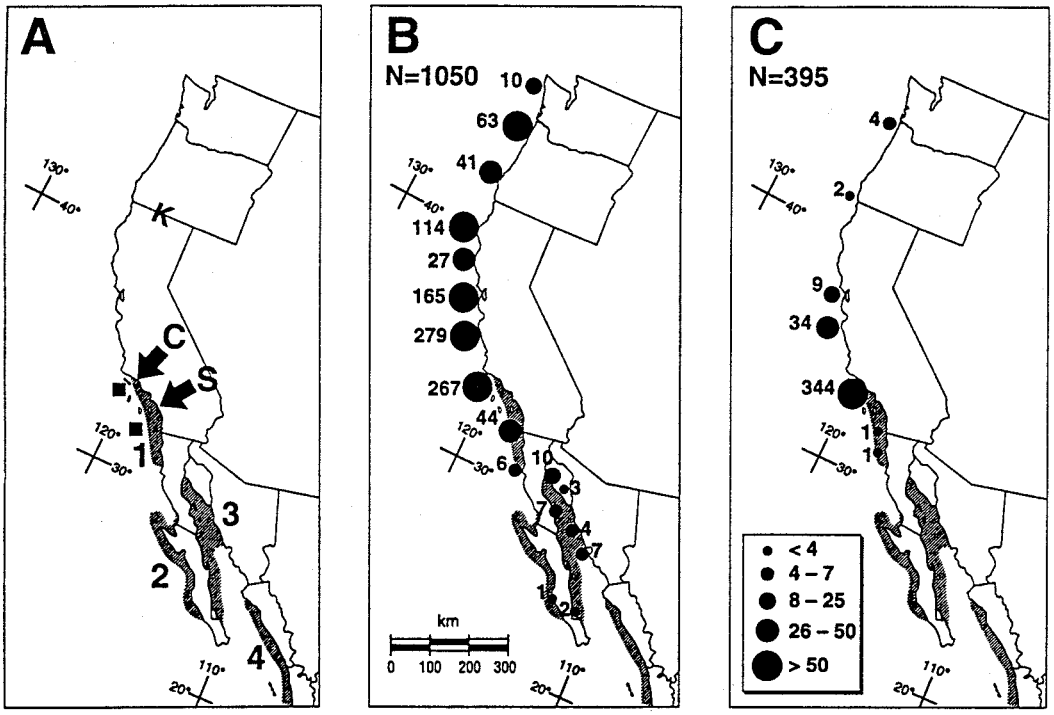

Fig. 1 Maps of the study area from 1990 to 1991. (A) Breeding range of the California brown pelican, showing separate populations (indicated by large numbers) as defined by Gress & Anderson (1983). The two solid squares represent the major breeding colonies from the Southern California Bight (SCB) population: to the north, West Anacapa Island, California and to the south, Islas Coronados, Baja California Norte, Mexico (a third, small pelican colony is also located at Santa Barbara Island, between the two). 'C' represents the site where control pelicans were trapped and marked (Ventura, CA area); 'S' represents the sites where oil spills occurred in 1990 and 1991 (Los Angeles, CA area) affecting pelicans and other seabird species. 'K' represents the site (Klamath Basin, CA) where American white pelicans were radio-marked as controls for signal reception in southern California and Mexico (areas 2, 3 and 4). (B) Two-degree coastal sections of the study area, showing the effort spent (no. scans) throughout the California brown pelican range to locate radio-marked birds, but where no signals were received. The size of each black circle represents the degree of effort as shown in panel (C). Sample sizes are given next to each circle. (C) The same, but showing effort where one or more (1–15) radio signals were received. Combining panels (B) and (C) indicates the total effort made in this study to locate radio-marked pelicans. Aerial surveys were continuous but are represented here only once per 2° of latitude.

and pre-breeding staging site (Jaques & Anderson, 1987, 1988) that was far enough south to minimize the possible effects of cold weather on post-release recovery. In 1990, 19 control (CON) pelicans (11 adults with radios plus 8 with leg markers only, including 2 juveniles) were captured by net gun in Ventura Co., CA about 105 km north of San Pedro Bay, an area not affected by known oil spills, but still within the local range of the affected SCB brown pelican population (Gress & Anderson, 1983; Anderson & Gress, 1983; Fig. 1A). CON pelicans were released in March and April 1990 within 1 h of capture. Six additional breeding adult brown pelicans from a previous radio-telemetry study in 1986 (FG, unpublished data from the SCB) were added to the control sample for radio-telemetry survival analysis. In 1991 no pelicans were specifically captured as controls, but unmarked, normal pelicans from Anacapa Island were used for comparisons.

Radio-telemetry packages were placed only on adult brown pelicans. A neoprene pad ($7 \times 10 \times 1$ cm) was glued with marine epoxy to the underside of each transmitter to cushion the pelican's dorsum and insure that the entire 'backpack' would float (to enhance recovery). This backpack was harnessed to the pelican with 0.5 cm flat teflon ribbon (Kenward, 1987: 103–104) and secured at one location with two steel rivets. The backpack was designed to drop away from the bird in approximately 12 months when the rivets rusted and detached. However, we could only examine disappearances with radio-telemetry in the first 6 months following release since the first known harness plus transmitter detachment occurred in a CON pelican after

6 months (we found that harness wear rather than transmitter life determined this, and more durable harnesses have resulted for future studies). Backpacks weighed 120 g each and were about 3% of body-weight: mean = 2.9 ± 0.8% (95% C.L., $n = 41$). Transmitters were tested extensively for signal strength and pulse-rate before placement on pelicans, again after placement, and again before release ($n = 4+$ times per transmitter); no problems were found in any case. Return of five detached backpacks during the study confirmed that the harnesses disengaged and floated to shore, and all radios recovered or accounted for in this manner were still giving signals after 6–9 months.

Colour-marking consisted of a standard USFWS band on one leg with a coloured, 15 cm, hypalon streamer tied to it plus a teflon band and a coloured, numbered sheep ear tag on the opposite leg. The marking system was designed to persist for several years (DWA in prep.), so that sighting data would continue after the radio packages disengaged.

In 1990 and 1991, we also placed transmitters on 18 (9+9) normal American white pelicans (*P. erythrorhynchos*) captured in northern California (Fig. 1A). The probability of relocating these telemetered pelicans in Mexico was known to be high (Palmer, 1962: 267). In this way, white pelicans served as additional controls to verify and test our equipment in the field in Mexico.

Field surveys

We conducted our field surveys through the use of several survey techniques: *1.* ground surveys with hand-held antennas and spotting scopes (Fig. 1A: searches were associated with populations marked 1, 2, 3, and the northern parts of 4); and *2.* aerial surveys for radio signals and censuses. Surveys were flown from 300 to 1000 m altitude consisting of: five flights in 1990 that covered the California coast between the Mexican border (including Islas Los Coronados and the area south to about Ensenada, Mexico; latitude 31.8°N) and Point Conception (including the Channel Islands); two flights in 1990 that covered the northern California coast one aerial survey by cooperators in Oregon; and Washington in 1990; and one flight that covered the entire California coast and offshore islands in 1991. *3.* Additional ground surveys were also conducted by our field teams working on other studies or by a network of cooperators from Mexico through Washington, established by DWA in 23 years of previous studies on brown pelicans.

In the field we positioned a test transmitter at various distances during all scans to test our receivers. One transmitter was also permanently placed near a breeding brown pelican subcolony at Anacapa Island to determine effective aerial and ground reception ranges. These ranges varied from 25–150 km at terrestrial vantage points (20–1500 m elevation) and 110–150 km from airplanes (600–1000 m altitude). Each radio-telemetry scan was comprised of 3–8 sweeps at 4–8 s intervals for each potential transmitter frequency in all directions with pelican habitat. To assure independence (Swihart & Slade, 1985), telemetry positions were recorded only at 1 week or greater intervals.

In addition to radio-telemetry fixes, we defined 'sightings' (or detections) as the location in space and time of a pelican from a known treatment and year (CON or RHB), but where individual identity was not known. We defined 'recoveries' (or identifications) as locations in space and time of a known individual. To maximize all returns from our surveys, we concentrated our efforts at locations and at times when brown pelicans were likely to be found (known roosts, feeding areas, breeding colonies, etc.; Anderson & Anderson, 1976; Anderson *et al.*, 1977; Briggs *et al.*, 1981, 1983; Gress & Anderson, 1983; Jaques & Anderson, 1987, 1988).

The four geographically distinct breeding populations of the California brown pelican (Gress & Anderson, 1983) are indicated on Fig. 1. During post-breeding dispersal, California brown pelicans occur from the Mexican state of Guerrero (about latitude 17°N) and north into Washington and southern British Columbia (about latitude 52°N; Fig. 1A; Anderson *et al.*, 1976; Gress & Anderson, 1983). A comparatively lower effort was expended in Mexico (Fig. 1B), but included the area where >90% of the individuals of the subspecies are concentrated at 10–15 nesting colonies during breeding (Anderson *et al.*, 1976; Gress & Anderson, 1983). Compared to efforts in US waters, therefore, these surveys were more efficient. As a measurement of movement activity, we determined radio-telemetry recovery distances from the release point in the first 6 months (1990 and 1991 RHB and CON); but distances to Anacapa Island were used for sightings and recoveries in the second year.

Because of detrimental effects of human presence on nesting pelicans (Anderson & Keith, 1980; Anderson, 1988), we did not enter colonies to determine actual nesting by any radio-marked pelicans detected there. We assumed instead that pelican presence at or near nesting colonies represented activity related to that colony, and we considered such behaviour only as indices of 'reproductive interest or activity' (CON and RHB are comparable, nonetheless).

Population analysis

Disappearances of radio signals, reports of dead birds or birds needing further rehabilitation were considered losses from the population, i.e. mortalities. According to the manufacturer of our transmitters, constant immersion of the antennas in salt water (as would be the case of a carcass floating on water, sinking in water, or buried under beach flotsam) would be the most likely cause for loss of signal strength other than transmitter failure. Since radios were randomly placed on pelicans (i.e. list of frequencies mixed), the likelihood of failure of only those attached to RHB pelicans is extremely remote. Every transmitter used in this study ($n = 48$) provided signals in the field for at least 10 days following release, most longer. Signal disappearances along with extensive geographical searches also formed the basis of evaluating losses in studies of rehabilitated sea otters (*Enhydra lutris*; Monnett *et al.*, 1990). As suggested by Samuel & Fuller (1994) for small sample sizes, we utilized χ^2 (df = 1) for equal survival and similar tests.

Results

Body condition at release

RHB pelicans at release were equivalent in body condition indices (BCI), correcting for sexual dimorphism in brown pelicans, where BCI (g/cm) = weight (g)/culmen length (cm). The following groups were tested for differences in BCIs (Analysis of Variance on loge-transformed indices; Ryan *et al.*, 1985: 195–200): 18 breeding adults from the Gulf of California in 1986 (DWA unpublished); 12 breeding condition adults used in this study as CON; and 72 RHB pelicans from this study ($n=102$). None of these groups were different ($F=0.90$, $P=0.41$; BCI = 123.2 ± 2.4 g cm^{-1} culmen; mean ±95% C.L.); nor were there any differences when only radio-marked RHB pelicans ($n=30$) were tested against CON and breeding adults ($F=0.21$, $P=0.81$).

Activity at breeding sites

In the 1–2 weeks prior to release in 1991, 12 of 23 adult RHB pelicans in three pens displayed typical courtship and pairing behaviour (Johnsgard, 1993: 391–394), forming persistent male/female pairs and including mutual defense behaviours by the two birds toward other pairs and individuals. However, these 'pairings' vanished immediately after release.

Once released, we found that RHB brown pelicans showed no inclination toward breeding activity. They were not found consistently at any SCB or Baja California breeding colonies in the 1990–1992 breeding seasons (FG spent extensive time at the SCB colonies in 1990, 1991 and 1992 searching for marked pelicans while conducting breeding surveys). The *only* indication of RHB pelican activity around any breeding colony in the post-release period was a single bird in April 1990 that spent several days roosting at the Islas los Coronados colony (Fig. 1A). It soon returned to the mainland, stayed at one location (Dana Point, CA) for about 4 weeks, and then disappeared. In contrast, five of 11 different 1990 CON individuals were known to be active (detected two or more times) at or near Anacapa Island in April and May. By June, differences between 1990 CON ($n=5$ of 11 individuals relocated at or near breeding colonies = 45%) and RHB (1 of 22 relocated = 4%) were significant ($\chi^2=4.97$, $P<0.03$). In 1991, no RHB brown pelicans were ever found at or near the breeding colonies, despite activity there by the general SCB population.

After 2 years it was not possible to locate pelicans with radio-telemetry, but FG spent 36 days at Anacapa Island in 1992 conducting breeding surveys and searching for banded and marked pelicans. Surveys were not systematic or complete, but during that season, no 1990 or 1991 RHB but at least three 1990 CON pelicans were sighted.

Disappearance patterns

In assessing disappearances of RHB and CON pelicans, it was not possible to determine the fate of every pelican. In some instances (nine of 21 RHB + 0 of 11 CON in 1990; four of 10 RHB in 1991 plus one CON from 1990), it was possible to recover a carcass, obtain a report of death or recapture, or otherwise determine outcomes indicative of mortality, which was higher among RHB ($\chi^2=3.94$, $P<0.05$).

In the first 6 months with reliable radio-telemetry data, disappearances of RHB pelicans were higher than those of CON pelicans (Table 1). The overall patterns of non-disappearance comparing all RHB and all CON pelicans are significant ($\chi^2=7.12$, $P<0.01$). Although sample sizes are small, we can further divide differences between RHB and CON in three periods: 0–60; 60–120; and 120–180 days post-release. Using χ^2 tests, those 2-month intervals contrast as follows: 0–60 days—$\chi^2=2.87$, $P=<0.10$ (approaches $P<0.05$ significance); 60–120 days—$\chi^2=1.43$, $P>0.10$ (non-significant); 120–180 days—$\chi^2=9.55$, $P<0.01$ (Table 1). By 1992 (2 years after the 1990 oiling), 10 of 19 (53%) 1990 CON pelicans could still be accounted for on the California coast via sightings and recoveries; but only eight of 91 (9%) 1990 RHB pelicans (six were juveniles) could be found in the same surveys ($\chi^2=22.07$, $P<0.01$).

Although numbers of RHB juvenile brown pelicans marked and released in 1990 and 1991 were small (21 of 102, none with transmitters), there is a suggestion that RHB juveniles survived better than RHB adults. During late-1990 to early-1991, based on recoveries and sightings only, proportionately more RHB juveniles than adults could be found in our coastal and island surveys than had been originally marked ($\chi^2=11.86$, $P<0.01$).

Movements in the post-release period

Our radio-telemetry efforts are summarized in Fig. 1B and 1C (total = 1050 'negative' scans and 395 'positive' scans with one or more radio frequencies detected). Telemetry signals from both RHB and CON pelicans were found in a pattern significantly different ($P<0.01$) from that of total effort expended (Fig. 1B vs 1C; Kolmogorov–Smirnov [KS] test; Siegel, 1956: 127–130). In addition, seven different radio-tagged American white pelican individuals were located nine times in western mainland Mexico (Fig. 1A); and 17 previously-marked Gulf of California brown pelicans (Anderson *et al.*, 1977) were detected among 52,616 seen there. Thus, radioed CON and RHB brown pelicans were found only within the range of the SCB population (Fig. 1A), despite much searching elsewhere.

The movement behaviour of CON pelicans derived from radio-telemetry was quite different and more variable than that of RHB pelicans in 1990 within that zone (Fig. 2; all adults). In general, RHB pelicans in 1990 were sedentary for long periods after release. A KS-test confirms differences between distributions of median dispersal distances (based on radio-telemetry) of CON and RHB ($P<0.01$), and also that movement distances among CON were significantly greater than among RHB ($P<0.01$).

In the first few months following release, both 1990 CON and RHB pelicans showed little more than local movements; but with progress of the normal breeding period followed by post-breeding dispersal, differences in movements between CON and surviving RHB pelicans became more apparent (Table 2, Fig. 2).

TABLE 1

Disappearance and estimated survival rates of RHB and CON California brown pelicans separated by time periods since their release after rehabilitation, radio-telemetry data only.

Treatment	Time period (days) since release 0–60	60–90	90–120	120–150	150–180
CON90 D-rate*	0%	0%	0%	0%	9%
	(0/7)	(0/8)	(0/11)	(0/11)	(1/11)
CON90 S-rate*	100%	100%	100%	100%	91%
Sample size	7→7	8→8	11→11	11→11	11→10
CON90+86** D-rate*	0%	0%	0%	0%	6%
	(0/13)	(0/14)	(0/17)	(0/17)	(1/17)
CON90+86** S-rate*	100%	100%	100%	100%	94%
Sample size	13→13	14→14	17→17	17→17	17→16
RHB90 D-rate*	23%	6%	7%	36%	22%
	(5/21)	(1/16)	(1/15)	(5/14)	(2/9)
RHB90 S-rate*	77%	94%	93%	64%	78%
Sample size	21→16	16→15	15→14	14→9	9→7
RHB91 D-rate*	10%	0%	0%	22%	43%
	(1/10)	(0/9)	(0/9)	(2/9)	(3/7)
RHB91 S-rate*	90%	100%	100%	78%	57%
Sample size	10→9	9→9	9→9	9→7	7→4
RHB90+91 D-rate*	19%	4%	4%	30%	31%
	(6/31)	(1/25)	(1/24)	(7/23)	(5/16)
RHB90+91 S-rate*	81%	96%	96%	70%	69%
Sample size	31→25	25→24	24→23	23→16	16→11

*These are disappearance (D) and estimated survival rates (S = 1 − D), expressed as percentages of available birds at the beginnings of each time interval.

**For these survival estimates, six additional adult pelicans from 1986 are added to baseline.

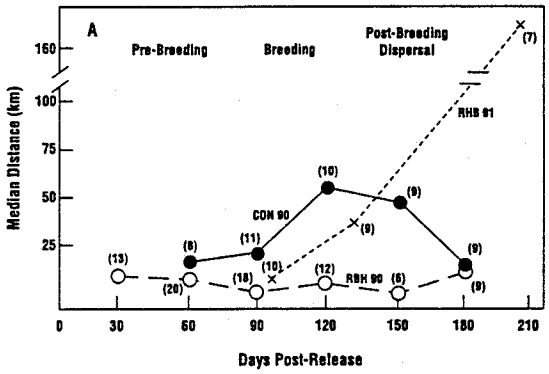

Fig. 2 Post-release, median-distance movements of control and surviving rehabilitated California brown pelicans in 1990 and 1991 (CON 1990 = solid line, solid circles; RHB 1990 = dashed line, open circles) derived from radio-telemetry locations. The short-dashed line with Xs represents 1991 RHB pelicans adjusted for seasonal (phonological) equivalency. Numbers in parentheses represent sample sizes (independent observations, not individual pelicans) for each time category. Additional data from sightings indicated that after 210 days, and through 300 days post-release, nine RHB 1991 recoveries averaged 867 ± 191 (S.E.) km distant from their release sites, all to the north.

Later (while we could still depend on radio-telemetry data), the two groups were again comparable, as CON pelicans averaged closer to their release points again and surviving RHB pelicans finally began to disperse (Table 2, Fig. 2). Colour-marker sightings (discussed later), supported the notion that the few surviving RHBs moved north sometime after 180 days. From a phonological viewpoint, as the expected time to start moving in post-breeding dispersal approached (Anderson & Anderson, 1976; Briggs *et al.*, 1983; July–August, 90–150 days in Table 1), the statistical significance of differences increased (Table 2), primarily because the RHB pelicans did not move much and CON pelicans did.

In 1991, RHBs were oiled phenologically later in the breeding season than the 1990 RHBs, 3 April in 1991 vs 7 February in 1990. The 1991 RHBs eventually dispersed more extensively than any 1990 pelicans (Fig. 2). Based on previous studies of normal brown pelican populations of California (Jaques, 1994) and in the Gulf of California (DWA, unpublished data), 1990 CON and RHB late summer dispersing pelicans both tended to move to the central California coast in 1990, as expected. But in late 1991, many pelicans along the West Coast moved farther north than the previous year, associated with the warming water of ENSO (El Niño/Southern Oscillation) conditions that developed after the 1991 breeding season (Yee *et al.*, 1992; Tweit & Gilligan, 1992). RHBs in 1991 did not show any activity at the breeding colonies, although SCB pelicans were actively breeding there in 1991. Behaving like non-breeders then, these adults departed southern California for northern California, ahead of breeding adults which dispersed later.

We used sightings and band recovery data to further study long-term dispersion patterns. In the second breeding season after rehabilitation, if recovered, RHB adults should have been nearer colonies (shorter distances from Anacapa Island; Anderson & Anderson, 1976; Anderson *et al.*, 1982; Fig. 1A). At 210 days post-release in 1990 (about September), CON pelicans were already again closer to Anacapa Island (Fig. 2). After about a year (350–400 days) following release, CON adults were closer to the Anacapa Island breeding colony than were 1990 RHB adults or 1990 RHB juveniles (Table 3; Mann–Whitney U-tests; Ryan *et al.*, 1985): CON adults vs RHB adults, $P<0.02$; RHB adults vs RHB juveniles, $P=0.87$; all RHB vs CON adults, $P<0.01$). Thus, both RHB adults and juveniles

TABLE 2

Post-release movement distances of surviving rehabilitated (RHB) and control (CON) California brown pelicans during the first 6 months in 1990, determined by radio-telemetry.

	Time-interval (days) since RHB release			
	First 30	30–90	90–150	Last 30*
Distance moved (km)				
CON mean ± standard error	14.6±4.2	113±26	126±37	73.0±47.0
CON median	16.0	16.0	49.0	10.0
Sample size	8	19	19	9
RHB mean ± standard error	10.4±3.5	9.9±2.6	21.8±16.0	120±58
RHB median	8.0	5.5	5.0	8.0
Sample size	13	38	19	9
Probability of difference				
Mann–Whitney *U*-test**	0.40	0.12	0.01	0.69

*This time interval represents the conservatively estimated time when radio-transmitters and harness packages were still intact and reliable.
**Statistical tests are described by Ryan *et al.* (1985: 185–187, 292–297).

remained farther away from southern California breeding colonies than CON adults. More extensive dispersion by normal juveniles is expected (DWA, unpublished).

Discussion

Comparisons between RHB and CON brown pelicans in several measurements relating to behaviour and survival (despite equivalent body conditions at release) indicated long-term deficiency in rehabilitated brown pelicans (Table 4). The extensive searches made for radio-marked and colour-marked pelicans from this study, the differences in behaviours and dispersal, and the disappearances of RHB vs CON pelicans are sufficient to permit the conclusion that RHB pelicans experienced lower survival.

Many forms of ingested petroleum hydrocarbon derivatives are known to cause a number of physiological disruptions in birds and mammals, such as anaemia (Leighton *et al.*, 1983; Leighton, 1985; Fry & Lowenstein, 1985), immunosuppression (Rocke *et al.*, 1984; McOrist & Lenghaus, 1992), additional stress-related phenomena such as endocrine dysfunction (Peakall *et al.*, 1981), reductions in nutrition (quality and quantity of food supplies; ex. river otters *Lutra canadensis*; Bowyer *et al.*, 1994), and other effects with a potential for long-term injury, such as interactions among multiple-stressors (Khan & Ryan, 1991). Oil-exposed birds and mammals may sustain numerous forms of physiological lesions after petroleum hydrocarbon ingestion, although they may indicate few, if any, outward signs of debilitation (Khan & Ryan, 1991). Some of these lesions may persist (or continually be induced) for long periods of time following a contamination incident, for example 1–2 years, as shown in river otters (Duffy *et al.*, 1994) and shearwaters (Fry *et al.*, 1986).

TABLE 3

Distances moved by 1990 CON and RHB brown pelicans in early 1991, prior to the post-breeding period of the year following treatment (distances are from Anacapa Island, the major brown pelican breeding colony in the SCB), determined from sightings.

	Treatment/age		
	CON/adult	RHB/Adult	RHB/juvenile
Distance (km)			
Median	46	262	232
Mean ± standard error	34±9	391±167	312±117
Coefficient of variation	69%	104%	92%
Sample size	7	6	6

Our study was not designed to separate the toxic effects of oil from the stress effects of handling. The initial stresses of oiling (Peakall *et al.*, 1981 reported that oil ingestion caused an increase in corticosterone levels) plus handling and rehabilitation could both contribute to lower overall survival of RHB pelicans, as has been shown in numerous studies of other vertebrates exposed to stress alone (ex. Fowler, 1978: 153–162).

Although the mechanisms are not clear, the results are. For example, Fry *et al.* (1986) found that dosing wedge-tailed shearwaters (*Puffinus pacificus*) just once with crude oil caused reduced breeding success that season as well as the next (along with reduced mate fidelity). Eppley & Rubega (1990) reported that one short-term exposure to oil (without handling or rehabilitation) resulted in lower overall nest attentiveness by adult south polar skuas (*Catharacta maccormicki*), which in turn caused lower production of young during the year of oiling. Butler *et al.* (1988) reported nest abandonment and altered behaviour by oil-dosed Leach's storm petrels (*Oceanodroma leucorohoa*) in the first year, but these effects disappeared in the next season. And, there are additional studies that demonstrate limited successful breeding after oil exposure or after oiling and rehabilitation. Randall *et al.* (1980) and Morant *et al.* (1981) reported that small percentages of rehabilitated little blue penguins (*Eudyptula minor*) and jackass penguins (*Spheniscus demersus*) eventually returned to colonies to breed. Collins *et al.* (1994) monitored oiled mute swans (*Cygnus olor*) that were rehabilitated in captivity without cleaning or extensive handling, then liberated them 30–101 days later. They found increased mortality in the 5-month period after release along with a general failure to breed the season following oiling; both effects were then followed by a return to normal by about the second breeding season.

Despite extensive efforts to save Alaskan sea otters after a large oil spill in 1989 (Williams & Davis, 1990), Monnett *et al.* (1990) showed that disappearances and death rates of released RHB individuals were high. Estes (1991), commenting on these recovery efforts,

TABLE 4

Diagrammatic summary of California brown pelican behavioural responses observed in 1990 and 1991 off the California coast by various observational techniques.

Treatment	Seasonal phenological stage					
	Pre-breeding	Breeding 1990	Post-breeding	Pre-breeding	Breeding 1991	Post-breeding
Event*	O–R				O–R	
CON and SCB population 1990	Normal dispersal	Active at colony	Normal dispersal	Normal dispersal	Active at colony	Normal dispersal
Techniques**	OB	RT	RT	MK + OB	MK + OB	OB
RHB 1990		Non-active at colony***	Little dispersal	Delayed dispersal	Remain dispersed	Most dead?
SCB population 1991 (non-oiled)					Active at colony	Early dispersal
Techniques**					RT + OB	RT + OB
RHB 1991					Non-active at colony***	Early dispersal

*O = Approximate timing of oil spill, R = approximate timing of release of rehabilitated pelicans.
**These are the field techniques used to determine responses as shown: OB = field observations and censuses; RT = radio-telemetry; MK = bands and colour markers.
***These birds were in reproductive condition at the time of oiling.

remarked that sea otter rehabilitation was 'extremely expensive and ineffective.' Sharp (1996) examined band recoveries of wild, post-rehabilitation common murres (*Uria aalge*), western grebes (*Aechmophorus occidentalis*) and white-winged scoters (*Melanitta fusca*), and found a mean recovery time between release and band recovery of only 39 days (average life expectancy was 9.6 days). Normal body weights in RHB brown pelicans, along with hints of normal behaviour before release, led us to predict high survival and normal breeding—and survival in the period immediately after release *was* good. However, the later decrease in survival indicates that RHB pelicans lost the benefits of captive care. The later disappearances of RHB brown pelicans paralleled a stressful period in the annual cycle, molt (Payne, 1972), followed by winter, another stressful period. An increase in disappearance in winter resembled high rates of mortality described for RHB sea otters in Alaska (Monnett *et al.*, 1990).

Our results and a growing number of other studies indicate that current rehabilitation techniques are not effective in returning healthy birds to the wild. Such findings might lead to: increased efforts to improve deoiling or to improve handling and rehabilitation techniques (Adams, 1994; Cairns & Elliot, 1987; Collins *et al.*, 1994; Gandini *et al.*, 1994; Randall *et al.*, 1980); to the improvement of release techniques (i.e. 'soft-releases' = gradual readjustment to the wild; Nesbitt & Carpenter, 1993); or to the conclusion that wildlife oil spill cleanups are not cost effective or worthwhile (Estes, 1991; Sharp, 1996). Rehabilitation as a wildlife management technique needs to be evaluated objectively from both population recovery and cost–benefit viewpoints.

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APPENDIX D: Restoration Activities From Other American Trader Settlement Funds

Part 1:

White Sea Bass Restoration Project

The goal of the white sea bass project is to supplement natural reproduction of this species in the area affected by the American Trader oil spill with hatchery-reared fish.

The California Department of Fish and Game is currently investigating the feasibility of enhancing the wild stock of white sea bass by releasing hatchery-reared fish into the ocean off southern California. The Department, thought the Ocean Resources Enhancement and Hatchery Program (OREHP), has contracted with Hubbs-Sea World Research Institute to build and operate an experimental hatchery at Carlsbad. Production at the facility has been hampered by lack of funding and the inability to produce sufficient fish for release. The destruction of the juvenile white sea bass resource off Huntington Beach as a result of the oil spill provided OREHP with an opportunity to increase production at the hatchery by providing funding for the release of additional fish in the area of the spill (Newport Beach to Palos Verdes Point).

OREHP will enhance the white sea bass population in the area of the oil spill by increased hatchery production, grow-out (rearing fish from 3" to 8"), and release of juvenile fish. Hatchery production also will be increased by refinements in culture techniques and the addition of more juvenile culture pools. OREHP will increase grow-out capability in the area of the spill by encouraging additional facilities. The program will also grow-out fish in a facility at Santa Catalina Island and return them to the mainland for release into the affected area.

Under the terms of the settlement, the Trustees received $2,484,566 plus interest ($487,174.15) to address bird related natural resource injuries caused by the spill. In addition, the State of California received $400,000 plus interest ($78,650.37) for a White Seabass fish hatchery program at Aqua Hedionda Lagoon. A copy of the settlement agreement is found in Appendix B.

APPENDIX D: Restoration Activities From Other American Trader Settlement Funds

Part 2: State and Local Recreation Settlement

A $16 million state and local government settlement was reached in 1999 that ended long-standing state litigation against Attransco, the owner of the American Trader. The settlement comes from a 1991 lawsuit brought by the State of California Attorney General's Office on behalf of the California Department of Fish & Game; Department of Parks and Recreation; State Lands Commission; Regional Water Quality Control Board, Santa Ana Region; California Coastal Conservancy; City of Newport Beach, City of Huntington Beach and the County of Orange.

The agencies listed above settled with the Trans-Alaska Pipeline Liability Fund in 1996 for $3 million as partial compensation for public recreation losses and unpaid response costs. In addition, the agencies settled with Golden West Refining Company in 1996 for $4.15 million as partial compensation for recreation losses and legal expenses.

Attransco and the agencies went to trial on two government claims: damages for lost recreational uses under the Harbors and Navigation Code, and civil liabilities under the state Water Code for the loss of public recreational use resulting from beach and harbor closures during the oil spill response. This was the first time that a California jury put a dollar figure on the lost enjoyment of the beach, boating on the ocean, or surfing.

This settlement money will be used for improvements to the publics' use and enjoyment of beaches, waterways and wetlands in Orange County. A committee of state and local representatives have worked together to develop the following list of eligible projects for use of these funds.

City of Newport Beach
1. Balboa and Newport Pier Rehabilitation
2. Ocean Safety Operations Improvements and Rescue Boat
3. Restroom Facilities Rehabilitation
4. Ocean Front Sidewalk & Street Light Replacement

5. Corona Del Mar State Beach – Concession Area & Restroom Rehabilitation
6. Replace Balboa Peninsula Beach Access Walkways
7. Shellmaker Island Marine Educational Facility (joint project with CDFG)

Orange County
1. Upper Newport Bay Regional Park
2. Santa Ana River Beach Access Improvements

City of Huntington Beach
1. South Beach Improvement Master Plan - Phase I

Department of Fish & Game and State Lands Commission
1. Shellmaker Island Marine Education Center
2. Bolsa Chica Ecological Reserve Access, Education, and Interpretive Projects
3. Coastal and Marine Educational Programs Orange County
4. Public Access Improvement Projects in Orange County

California Department of Parks and Recreation
1. Huntington State Beach Group Picnic Facility
2. Bolsa Chica State Beach Campfire Center
3. Bolsa Chica State Beach Lifeguard Headquarters Restoration Project
4. Crystal Cove State Park Visitor Center Exhibits

Assignment of Funds (as of 2000)

	Base Amount	Approx. Interest	Approx. Total
Newport Beach	$4,790,000	$246,000	$5,036,768
Huntington Beach	$3,604,000	$186,000	$3,790,581
County of Orange	$1,353,000	$ 72,000	$1,425,225
State Parks	$1,217,800	$ 60,000	$1,277,987
Fish&Game/State Lands	$ 646,000	$ 36,000	$ 682,112

APPENDIX E: Public Involvement
Part 1:

Synopsis of Written and Oral Public Comments with Trustee Response

The American Trader Trustee Council (TC) received many thoughtful and meaningful comments during the public review process. In reviewing and evaluating public comments and proposals, the TC has applied the Criteria Used to Evaluate Restoration Project Concepts (Section 4.2). Although after review, some of the comments were not incorporated into the final plan, others have enhanced our final plan. Reviewers of the Final Restoration Plan and the TC responses to comments are reminded that this plan is intended only to address seabird injuries. In revising the Restoration Plan, the TC has further emphasized the goal to restore injured seabird resources.

1. Should use funds to purchase wetlands in Orange County area

Some commenters recommended that the TC spend settlement money on acquiring or enhancing wetland habitat in the Huntington Beach area.

Wetlands acquisition was considered by the TC during the restoration planning process. The potential costs associated with the acquisition of real estate was considered to be so expensive as to preclude the use of funds for primary restoration projects which were mandated under the consent decree. Although the consent decree does allow the use of funds for wetlands acquisition (see page B-9, Section VII), it may be considered once the projects specifically identified as priority projects in the consent decree have been determined to be infeasible. If, during the implementation of this Restoration Plan, it is determined that left-over funds are suitable for acquisition, we would expect to modify the plan at that time.

We understand that the Southern California Wetlands Recovery Project is also looking at funding wetland acquisition for many resource benefits including wading birds, waterfowl, shorebirds and other wetland species. Although these acquisitions may indirectly benefit seabirds by promoting low trophic level productivity in general, they would not be expected to provide direct benefits to seabirds.

Wetland acquisition may protect a small area of pelican day roosting habitat. However, the TC has determined that night roosting and nesting habitat are the limiting habitat features. Therefore, these are the habitat elements the TC has determined are important to promote, enhance or create. Wetland areas are not used for pelican nesting habitat. We hope that some of the projects that are proposed in the RP will provide night roost habitat enhancement within local wetland areas as well as throughout the southern California bight. Acquisition of wetland habitat is not necessary to achieve this goal.

2. Enhance wetland habitat for Brown Pelican night roosting habitat in additional areas (than those mentioned in draft Restoration Plan)

Based on public comments, we are now considering additional pelican night roost habitat enhancement at new areas, including in the local Huntington Beach area:

- Bolsa Chica
- Seal Beach
- Upper Newport Bay
- Big and Little Shell Wetlands

Each of the potential night roost habitats (including those in the Huntington Beach area) will be evaluated

by weighing the cost, benefit to pelicans (numbers), proximity to other night roosts and other restoration screening criteria.

3. Should spend the money locally in Orange County; do not spend money outside of Orange County; don't spend money in Mexico.

Many commenters were concerned that funds were not being spent in the area physically impacted by the spill.

Although the projects presented in the Seabird Restoration Plan are spread throughout the Southern California Bight and Mexico, other settlement funds were directed at local areas and relate to lost human use.

The settlement related to the American Trader oil spill had several components. First, over $12 million was allocated to restore lost human uses (See Appendix D, Part 2). The projects proposed to be supported through these funds encompass the coastal area impacted by the spill and include pier improvements, environmental educational centers, public use facility improvements and other projects. These projects are located in Orange County coastal areas, including Bolsa Chica Wetlands and Upper Newport Bay Wetlands.

Although the seabirds injured by the spill were present in the Orange County coastal area at the time of the spill, these birds move throughout the southern California bight, throughout California and even into Alaska and Mexico during other seasons of the year. Therefore, the TC evaluated the conservation needs of these birds to determine how we could most effectively provide them benefits and return their population levels to pre-spill conditions. For example, the Brown Pelican uses coastal areas of southern California throughout the year for feeding and resting. However, these same birds are only known to nest, lay eggs, and raise chicks on two islands in the United States (Santa Barbara Island and Anacapa Island) and two island groups in Mexico (San Lorenzo and San Luis archipelagoes). Therefore, in order to increase their productivity (the number of chicks surviving each year), the TC recognized that their efforts would need to focus on their nesting areas. The TC believes that projects related to Brown Pelicans on their nesting habitat will result in additional Brown Pelicans in the southern California coastal area in the future (primary and compensatory restoration). Another example includes the Xantus's murrelet. It is a small seabird that was injured by the spill. Although it feeds in waters adjacent to the southern California coast, it only comes on land to nest in the Channel Islands – no where else in the United States. Therefore, the TC recognized that to provide benefits to this population, we had to focus our restoration actions on its nesting habitat in the Channel Islands.

One commenter stated that it was against TC policy to spend money outside the physical area impacted by oiling. This is incorrect. The Trustees are committed to spending settlement money to address resource injuries. If these injuries can best be addressed by funding restoration activities outside the "footprint" of the oiling, it is appropriate for the Trustees to fund activities in any relevant geographic area. The Consent Decree and OPA 90 obligate the TC to consider the projects that are most effective in restoring injured species and their habitat to baseline conditions.

4. Spend funds on improving water quality

Several commenters recommended that these settlement funds be used to enhance water quality in the coastal areas impacted by the spill.

Mitigation and monitoring projects related to water quality have already been funded directly through Southern California Coastal Water Research Project, as specified in the American Trader Consent Decree (see page B-4). This Restoration Plan is required to benefit injured seabird resources, therefore, we will not address water quality issues in this plan.

5. Use funds to protect Least Terns

Several comments related to Least Tern habitat enhancement, protection and nest creation.

Although the TC supports other efforts related to the conservation of the endangered California Least Tern, we have not considered any expenditure of funds to promote this species. Because of their migratory patterns, no Least Terns were present anywhere within the southern California bight during the spill event or cleanup period. They spend that time of the year in South America. Therefore, projects related to Least Tern do not meet the screening criteria requiring a nexus to the injured resources.

One commenter stated that Least Terns may have been indirectly impacted through injuries to their food source (juvenile fish). Injuries related to fish resources are not covered under this Restoration Plan. The settlement agreement (Page B-4) provided for the implementation of a fish hatchery program to address these kinds of injuries.

6. Fund Wildlife Care Center

Several commenters suggested that American Trader restoration funds be used to support wildlife rehabilitation centers in the Huntington Beach area.

In California, oiled bird rehabilitation programs are funded by spill response funds. As a result of the American Trader oil spill, over $630,000 were refunded to the trustee agencies to defer previously spent response costs, including certain rehabilitation related costs. The Oiled Wildlife Care Network that has been created in California continues to receive funding from the State Oil Spill Response Trust Fund. Therefore, the TC has determined that funds related to rehabilitation and response activities are already available statewide.

Our priority projects are those which address factors limiting brown pelican population recovery including creation of night roosts and nesting habitat. We believe expenditure of funds to create beneficial population level effects is more effective than using funds to benefit a small number of individuals.

7. Fund Preventative Measures

Double Hulls: Some commenters recommended that all oil tankers have double hulls. The Oil Pollution Act of 1990 already requires all new vessels to be outfitted with double hulls. No additional actions related to this by this TC will be considered in this plan. These issues are mandated through other regulatory mechanisms.

Trash Deflecting Booms: Two commenters recommended that booms be placed in certain wetland areas to prevent trash from entering wetlands from upstream discharges. Further discussion with these commenters indicated that benefits would be limited to a handful of individual seabirds including brown pelicans and gulls. We believe expenditure of funds to create beneficial population level effects through the creation or enhancement of night roosts and nesting habitat is more effective than using funds to benefit a small number of individuals. See Section 4.2.

Oil Spill Response Equipment: Some commenters recommended that American Trader settlement funds be used to purchase oil spill response equipment including skimmers and booms. Although the TC supports these types of efforts, we believe that this type of activity is unrelated to American Trader seabird restoration.

8. Comments on eradication of Black Rats on Anacapa

Comments were received both in support and in opposition to the eradication of Black Rats on Anacapa Island. Those in support generally were appreciative of the benefits to island nesting seabirds as a result of removal of this non-native species. Those in opposition were generally opposed to the use of poison or the use of aerial application to purposefully kill rats or inadvertently kill other non-target animals. The TC seriously considered these concerns. We too are wary of the indiscriminate use of poisons.

During the development of this Draft and Final Restoration Plan, the National Park Service concurrently prepared a Environmental Impact Statement which provides details regarding alternative poisons and application measures. The preferred alternative was selected based on minimizing multiple applications of poison, adverse impacts to non-target species, long-term persistence and efficacy of killing all the rats on the islands. This included an evaluation of many types of rodenticides and their use in eradicating non-native rats on other islands throughout the world. The application method (aerial application of bait pellets) currently included in the preferred alternative is the only one that is deemed to be successful at completely eradicating rats from the island. Bait stations and hand broadcast were also considered, however, due to the topography of the island and the habitat use of the rats (steep cliff faces), these methods were determined to be ineffective in achieving the goal of total eradication of rats. Further information on this proposed project can be found at the National Park Service's website: http://www.nps.gov/chis/naturalresources/airp.html

9. Opposes the TC actions of spending funds on implementing the Anacapa Island Seabird Restoration project prior to finalizing the Restoration Plan

The TC spent funds on pre-planning activities for several projects including the Anacapa Island Seabird Restoration project. Activities included evaluating rat habitat use, deer mouse habitat use, seasonal bird activities and other issues relating to developing a sound project proposal for serious consideration by the TC. A final decision to implement this project was not made until after the review of the draft RP, public comments and results of pre-planning activities.

The Consent Decree specified several projects that the TC were required to evaluate in the development of the Restoration Plan including the Anacapa Island Seabird Restoration project. For this reason, the TC determined that it was appropriate to conduct pre-planning activities to fully evaluate this project.

10. Recommend use of competitive bidding

It will be a requirement that the contracting process of the administering agency be followed in implementing the Final Restoration Plan. This may involve a competitive bidding process, cooperative agreements or sole-source contracts. The TC thinks it is appropriate to undertake sole-source contracts for only those projects which involve unique skills and knowledge to be implemented.

11. Many comments were supportive of activities specified in the Draft Restoration Plan including:

- Brown Pelican roosting habitat creation and enhancement
- Eradication of rats on Anacapa Island to restore "the balance of nature"
- Undertaking restoration actions that make ecological sense regardless of their geographic location even if they are outside the "footprint" of the spill
- Efforts in Mexico to enhance seabird conservation
- Educational activities to provide the public with additional information on seabird threats and conservation

The TC also considered these supporting comments in their decision-making process.

APPENDIX E: Public Involvement

Part 2: Summary of Oral Comments Provided at Public Meeting June 29, 2000

Douglas Korthof, Seal Beach, CA 90740-5824
Least Terns are a forgotten species that It was injured by the spill because its food supply was injured
Should use the money for protection of Least Tern nesting sites
Should fund predator control of crows mainly at Marina del Ray, Venice Beach, Santa Ana and Bolsa Chica
Have proven that volunteer efforts can be successful
Should improve Marina del Ray site by enlarging wetlands and erecting new fencing
Will submit a proposal for Long Beach restoration site (San Gabriel)

Jan Vandersloot
Bolsa Chica Land Trust, Newport Beach, CA 92663
Spend money in Huntington Beach
Disagrees with page 29-sec. 4.6.2, Huntington Beach wetlands need more money
should collaborate with Huntington Beach Wetlands Group at Little Shell Beach, Bolsa Chica Mesa
Need 2.6 million dollars for 130 acres of wetlands in Huntington Beach
Recommend we reevaluate wetlands recommendation (sec 4.6.2)
Is against aerial broadcast of rodenticide, birds may be injured as a result
Should use bait stations and hand application instead

Eileen Murphy, Bolsa Chica Land Trust, Huntington Beach, CA 92648
Should spend the money locally in Huntington Beach
Use money to improve water quality and to enhance Least Tern habitat
Question how we justify taking the money out of Huntington Beach?

Karen Blasdell- Wilkinson, Natural Law Party
Use money locally, don't spend it in Santa Barbara
Use money to improve water quality at Seal Beach
Should focus on San Gabriel to benefit wildlife and people
How can trustees justify not spending money locally?
Could collaborate with Los Cerritos wetlands restoration

Joseph Racano, "Little Shell Wetlands", Huntington Beach, CA 92648
Should use funds for Little Shell Wetlands Restoration
Important wildlife habitat for estuarine and freshwater species
Should restore tidal flooding in wetlands
Use money to enlarge and expand water flow and replace clapper valve
could create Brown Pelican roosting habitat at Little Shell

Dean Albright, Bolsa Chica Land Trust,
Should spend money in Huntington Beach
Priority should be prevention, enforcement, clean-up and restoration
Need clean-up equipment (skimmer) in Huntington Beach specifically in Huntington Harbor
Also need funds for bird rehabilitation

Ann Cantrell, El Dorado Audubon, Long Beach, CA 90808
Food for Least Terns was probably adversely affected by oil spill
Roost site enhancement should be considered in local areas around Huntington Beach
Enhance habitat at Seal Beach NWR for pelicans and least terns
Don't go 100 miles away to spend money-focus on the birds in Huntington Beach area
Aerial application of rodenticide is dangerous, have concerns for safety of non-target
birds-should use traps instead
Should focus on prevention, doubled-hulled tankers and skimmers
improve local water quality

Lenny Arkinstall, Los Cerritos Wetland Steward, Long Beach, CA 90803
Need money to place boom in Los Ceritos Channel to clean the bay and keep oil out of the
channel and to protect clapper rail habitat
Protect habitat with boom at Navy Weapons Area to prevent future oiling

Attended but did not speak:
Bruce Monroe
Sierra Club
Seal Beach, CA 90240

Steve Bay
Sc. California Coastal Water Research Project
Westminster Lane, CA 92683

APPENDIX E: Public Involvement
Part 3:

Written Comments Received During the Public Review Process

"Steve Hampton" <shampton@OSPR.DFG.CA.GOV>

06/21/2000 09:46 AM

To: <carol.gorbics@fws.gov>, <mike.devany@noaa.gov>, "Paul Kelly" <PKELLY.ospr_po.OSPRDOMAIN@OSPR.DFG.CA.GOV>

cc:

Subject: Fwd: Re: [CALBIRD] seabird restoration projects

I just got this email to include in the public comments.

Steve Hampton

Resource Economist
Office of Spill Prevention and Response
California Dept of Fish and Game
PO Box 944209
Sacramento, CA 94244-2090

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(916) 323-4724 phone
(916) 324-8829 fax

Content-Transfer-Encoding: 7bit
Received: from imo-d10.mx.aol.com by ospr.dfg.ca.gov; Tue, 20 Jun 2000 22:59:31 -0700
Received: from VicLeipzig@aol.com by imo-d10.mx.aol.com (mail_out_v27.10.) id v.20.78cddee (4258) for <shampton@ospr.dfg.ca.gov>; Wed, 21 Jun 2000 01:51:44 -0400 (EDT)
From: VicLeipzig@aol.com
Message-ID: <20.78cddee.2681b1f0@aol.com>
Date: Wed, 21 Jun 2000 01:51:44 EDT
Subject: Re: [CALBIRD] seabird restoration projects
To: shampton@ospr.dfg.ca.gov
MIME-Version: 1.0
Content-Type: text/plain; charset="US-ASCII"
X-Mailer: AOL 5.0 for Windows sub 108

Steve,

Seabird restoration at Anacapa is worthwhile, but will any of the lawsuit proceeds be used to assist wildlife at the site of the actual spill? I serve as Science Director for the Huntington Beach Wetlands Conservancy, a group which restored and continues to manage the Talbert Marsh, a tidal ecosystem near the mouth of the Santa Ana River. Ours was the only wetland system to be oil-fouled by the American Trader spill. Our site is utilized by California Least Tern, Belding's Savannah Sparrow, and Brown Pelican. We're small, but we're not insignificant. And we could definitely use some help.

Vic

G. Victor Leipzig, Ph.D.
17461 Skyline Lane
Huntington Beach, CA 92647
(714) 848-5394 (phone/FAX)
vicleipzig@aol.com

Mitch_Ratzlaff@ifservices.org (Mitch Ratzlaff)

06/13/2000 11:31 AM

To: carol_gorbics@fws.gov
cc:
Subject: seabird restoration projects

Dear Carol,

Just to let you know, I was excited to hear about the Anacapa Island Project (to restore it to it's rat-free state of 100 years ago). Please consider my email as a "pro" vote.

Sincerely,

Mitch Ratzlaff
31864 Railroad Canyon Road, Unit D
Canyon Lake, CA 92587

Norm Block <NBlock@concentric.net>

06/14/2000 01:04 AM

To: carol_gorbics@fws.gov
cc:
Subject: I support the Anacapa Island project

Dear Carol,

I am an avid birder and wholeheartedly support the efforts to eradicate rats on Anacapa. Sometimes nature needs help to restore balance-particularly in sad situations caused by humankind.

Norm Block

John A Martin

06/21/2000 12:11 PM

To: Carol Gorbics/CFWO/R1/FWS/DOI@FWS
cc:
Subject: seabird restoration plan

To whom it may concern,

I have recently read the Draft Restoration Plan and Environmental Assessment for Seabirds Injured by the American Trader Oil Spill. I'd like to express my support for the plan. In particular I believe that the exotic animal control efforts on Anacapa have the potential to greatly enhance populations of seabirds in southern California waters.

Sincerely,

John Martin

<Sam_Miller@psdi.com>

06/30/2000 08:22 AM

To: "Steve Hampton" <shampton@ospr.dfg.ca.gov>
cc: carol_gorbics@fws.gov
Subject: Re: [CALBIRD] seabird restoration projects

To whom it may concern:

I fully support the intended efforts of DFG, USFWS, and NOAA to eradicate rats from Anacapa Island in an attempt to improve nesting for seabirds.

Sincerely,

Sam Miller
32 Chandler St.
Arlington, MA 02474

sam_miller@psdi.com

Eileen Murphy
<murphyeile@fea.net>

06/30/2000 11:38 AM
Please respond to murphyeile

To: carol_gorbics@fws.gov.
cc:
Subject: Good meeting last night.

Carol: It was great to see how the panel all listened to our suggestions.
To "flesh out" my comments i'd like to add.
Our ocean water is seriously contaminated. Much more than before the spill. I'm not blaming the spill but we've got a serious pollution problem. The money should be spent in my opinion where the damage was done. Granted the pelicans don't nest here but here is where they died. We have a nice little island which we ready every year by taking all the foliage off so they see sand and nest here. That could be better protected. Coyotes and foxes come over during low tide and eat the eggs. We have 5 pocket wetlands and a vernal pool on the Bolsa Chica Mesa which should be protected from development and the wetlands kept safe. We have Little Shell .8 acre wetland which should be enhanced and connected with the larger wetland on the other side of Beach Blvd. Birds fly over and land on it. It's threatened with development.
Please, Carol, spend the money here we are desperate for help.

Eileen Murphy
201 21st Street
HB CA 92648

PS. I have two personal friends who have had lung infections and stingray bites which became infected because of the poor water quality. One of them almost died because of contracting a flesh eating bacteria after surfing by the San Gabriel River outlet to the ocean.. I can get you names and statements from them if you need proof.

Jim Zimmer
<jzimmer@sunstroke.sdsu.edu>

07/05/2000 02:12 PM

To: "Steve Hampton" <shampton@ospr.dfg.ca.gov>, carol_gorbics@fws.gov
cc:
Subject: Re: [CALBIRD] seabird restoration projects

Steve and Carol,

I teach a Wildlife Conservation course at San Diego State University and am well aware of the problems that rats on islands can cause. I completely approve of their removal using all means at your disposal. Once decided upon, the removal should progress as fast as possible. Allowing the process to linger and trail on into years will lead to more rat deaths not less.

Sincerely,

James O. Zimmer,
Dept. of Biology
San Diego State University
San Diego, CA 92182-4614

Connie Boardman
8401 Sweetwater Circle
Huntington Beach CA 92646

Ms. Carol Gorbics
USFWS
2730 Loker West
Carlsbad CA 92008

July 23, 2000

Dear Ms. Gorbics:
I am writing to comment on how the settlement money from the American Trader Oil Spill in Huntington Beach CA should be allocated. I understand there are proposals to use the money to improve the nesting habitat on Santa Barbara Island for the California brown pelican, and I think the use of some of the funds this way is fine.

While improving the nesting habitat is important, the brown pelican winters at the Bolsa Chica wetlands and along our coast in Huntington Beach. Because of this, and due to the importance of Bolsa Chica as a wintering ground to literally thousands of birds, I would like to suggest an expenditure of some of these funds locally, here in Huntington Beach, where the oil spill occurred.

I would like to see allocation of about one third of the funds for use by the Wetlands and Wildlife Care Center in Huntington Beach. The center after all, was formed as part of the response to the American Trader oil spill. Since then, the center has treated oiled birds from other spills including birds from the spill that contaminated the Bolsa Chica wetlands when illegal dumping of waste oil occurred into the Wintersberg Flood Control Channel. .

The center also takes some of the brown pelicans suffering from the botulism outbreaks at Salton Sea, and obviously could treat more of these birds if the center had more funds. The problem at Salton Sea seems to be an annual occurrence and using the funds to plan for future care of pelicans and other birds is a wise one.

The American Trader Oil spill directly affected birds and other wildlife here in Huntington Beach. Since we have such important wildlife areas here, and a facility to care for them, it only makes good sense to use at least a portion of the funds locally.

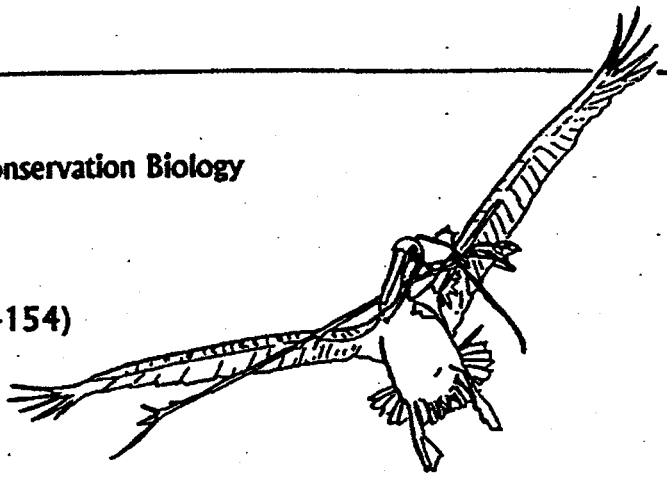
Sincerely,

Connie Boardman

Connie Boardman
Professor of Biology, Cerritos College

Daniel W. Anderson
Department of Wildlife, Fish, & Conservation Biology
University of California
Davis, CA 95616 USA

(530-752-2108, FAX 530-752-4154)
(e-mail: dwanderson@ucdavis.edu)



13 June 2000

Carol Gorbics
The American Trader Trustee Council
U. S. Fish and Wildlife Service
2730 Loker Avenue West
Carlsbad, CA 92008

Dear Carol,

I am responding to the request for public comments on the Draft American Trader Restoration Plan. I will not be able to attend the public meeting due to other commitments, but I have prepared a proposal for a related restoration project that I believe has an additional strong connection to the seabird resources that were injured by the American Trader oil spill. The three types of seabirds that suffered the greatest in that spill were scoter's, pelicans, and Western/Clark's grebes, in that order. More importantly, these grebes are regularly impacted by chronic and catastrophic oil pollution in California, and yet, the trustee agencies have consistently overlooked their restoration needs.

Such oversights, I believe, stem from a lack of understanding of the life history of grebes and their management and conservation needs in California, especially because these species spend a portion of their life history inland in fresh-water habitats. In addition, the cumulative effects of recent spills on grebes has never been evaluated. In the attached proposal, I show some of the significant cumulative effects on grebes from oil spills in California. Chronic oil pollution is, perhaps, taking an even greater toll. Trustee agencies must take a broader view toward restoration alternatives for migratory birds by considering conservation bottlenecks on breeding grounds. This approach is currently being pursued to benefit common loons in the North Cape oil spill case.

I believe that the injuries to grebes during the American Trader oil spill justify the beginnings of significant restoration actions by the trustee agencies. The enclosed proposal is a first approach at such a restoration program. I would be happy to work with the council to refine the proposal and make revisions, if necessary.

Thank your for your attention. Please contact me at any of the addresses given above in the letterhead.

Sincerely,

Daniel W. Anderson
Professor

To: Carol Gorbics
U.S. Fish and Wildlife Service
2730 Loker Avenue West
Carlsbad, CA 92008

July 26, 2000

Re: DRAFT RESTORATION PLAN AND ENVIRONMENTAL ASSESSMENT FOR SEABIRDS INJURED BY THE AMERICAN TRADER OIL SPILL

Dear Carol Gorbics:

The settlement money is for damage to the local Coastal environment. I, as many others, would like to see this money spent locally on some of the many problems which resulted from that oil spill, and other, similar problems.

None of the money should be spent in Mexican education programs, and none should be spend air-dropping diazanon onto Anacapa Island for rodent elimination. Other means must be found for protecting Pelicans from rodents, mass poisoning exposes too many already endangered species to even greater danger. All the money should be spent on the local beaches, on which all manner of plants and animals are struggling to survive. There are holes in the food chain, which affect many creatures as well as the Pelicans.

Least Terns will, unless they get their beach back, always be short of nesting sites. Unfortunately, this is the only place they can nest. Their numbers are directly related to the security of nesting sites and the quality of fishing. Least Terns require a supply of small, medium and larger fish, just the right size to feed chicks at each stage of development.

The American Trader Oil Spill impacted the Least Tern beach nesting sites, and also affected critical food supplies.

The Least Tern nesting sites on the right bank of the Santa Ana river is in fairly good shape, but needs a wall to reduce sound and light from the highway and the parking lot. This would be an excellent way to spend some of these funds: expanding and improving this site. Perhaps **$40,000** for a new wall, removal of lights, and maybe a fence extension.

The Least Tern sites in Bolsa Chica could use protection. There should be money allocated for a volunteer monitoring program, which is essential to keep Red Fox and Crows away from the nesting sites. Otherwise, all the nests get robbed, because the Terns are stuck in one small area. Equipment and liaison with Fish and Game would require no more than **$10,000.**

The Least Tern site in Marina Del Rey, on the right bank of Ballona Creek, has been devastated in previous years by attacks of Crows. Thanks this years to dawn-to-dusk resident watchers, aided by volunteers from the Ballona Task Forces and especially with the help of Heal the Bay, 304 nests successfully fledged with minimal losses. This site has perfect shallow water hunting for the Least Terns, and the site has the very determined support of local residents, who want the Tern nesting site to remain. Kildeer also use this site. However, the site needs a new fence, and new signage. The old fence is rusty, and the signage does not stand out and warn people of the presence of the

Endangered Least Tern hatchlings. Also, the existing "chick fence" at the bottom is rusty and torn, and some hatchlings have gotten entangled in the wires and perished. This site needs about $100,000 for a new fence, and about $20,000 for new and spectacular signage, which explain the reason, history and life cycle of the Least Terns. Fish and Game might be able to negotiate a slightly larger site, with a double fence – the outer fence removable in off years. This would cost no more than $30,000, for a total expenditure at this site of **$150,000.** Please consider this urgent need for the Least Terns, and help support the

volunteers and residents who took action this year to save the Least Terns at the Marina Del Rey nesting site.

Douglas Korthof
1020 Mar Vista
Seal Beach, CA 90740-5842
562-430-2495
email doug@seal-beach.org

ORANGE COUNTY COASTKEEPER

441 Old Newport Blvd. Suite 103 Newport Beach, California 92663
Office: (949) 723-5424 Fax: (949) 675-7091 Email: coastkeeper1@earthlink.net
http://www.coastkeeper.org

July 20, 2000

Carol Gorbics
U.S. Fish and Wildlife Service
2730 Loker Avenue West
Carlsbad, CA. 92008

Dear Ms. Gorbics

The purpose of this letter is to comment on the Draft Restoration Plan and Environmental Assessment for Seabirds Injured by the *American Trader* Oil Spill. We appreciate the opportunity to comment and hope that the Trustee Representatives have not already made up their minds on the distribution of penalty funds for projects.

We are appalled that the recommendations to fund various projects that assist the Brown Pelican completely omit anything in Orange County. It is our opinion that a significant share of the available funds should be spent on qualified projects in Orange County. This is where the spill occurred and this is where the damage was done. If your criteria suggests there are no viable projects here to assist the Brown Pelican, than we suggest that your criteria needs to be reviewed, as there are worthy projects here.

One such project is the Wetlands and Wildlife Care Center of Orange County that cares for and rehabilitates injured Brown Pelicans. The Center is in the process of closing its doors due to lack of funding. How your committee can overlook such a worthy project astounds us. Aerial spraying for black rats on Anacapa Island and beach signs in Mexico seems ludicrous in light of the mission and accomplishments of this care center. This Wetlands and Wildlife Care Center appears to be exactly what these funds are intended for. If this does not fit your criteria, we suggest you change the criteria.

Another criticism of your draft is the assumptions determined by the criteria that land acquisition should not be considered. We feel this is a false assumption. There do exist some matching fund possibilities that could purchase existing wetland property at a price that would not be prohibitive. The Huntington

Breach wetland is one such wetland. Secondly, there are several existing wetlands that could use funds for restoration that would certainly help the brown pelican and other species, as they do currently roost there. Building some roosting structures in our wetlands would be appropriate projects. I read your draft stating that the pelican does not habitat the mainland as the result of development and other factors. How then do you explain the presence of large quantities of pelicans in the Bolsa Chica Wetlands or the Huntington Beach Wetland-Talbert Marsh?

The consent decree stipulated that the area of the southern California bight is an allowable area to invest these funds for remediation of the pelican. Using the bight as a target area, we feel the center of the target and primary focus of the penalty funds should be Orange County—not the extreme north or south of the target area.

Again, thank you for the opportunity to comment on the draft and please consider the points we have raised. Please include us on your mailing list to receive any future notices of actions or hearings.

Sincerely,

Garry Brown
Executive Director

Pacific Seabird Group

DEDICATED TO THE STUDY AND CONSERVATION OF PACIFIC SEABIRDS AND THEIR ENVIRONMENT

Julia K. Parrish
Chair
Zoology Department
Box 351800
University of Washington
Seattle, WA 98195
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Craig S. Harrison
Vice Chair for Conservation
4001 North Ninth Street #1801
Arlington, Virginia 22203
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William Sydeman
Chair-Elect
Point Reyes Bird Observatory
4990 Shoreline Highway
Stinson Beach, CA 94970
(415) 868-1221

July 26, 2000

Carol Gorbics
U.S. Fish & Wildlife Service
2730 Loker Avenue West
Carlsbad, California 92008

Re: Comments on Draft Restoration Plan: American Trader Oil Spill

Dear Sir:

These are the Pacific Seabird Group's (PSG) comments on the draft restoration plan and EA for Seabirds injured by the American Trader oil spill off Huntington Beach, California ("Draft Plan"). PSG is an international organization that was founded in 1972 to promote knowledge, study and conservation of Pacific seabirds. PSG draws its members from the rim of the entire Pacific Basin, including the United States, Canada, Mexico, Japan, China, Australia, New Zealand, and Russia. Among PSG's members are biologists who have research interests in Pacific seabirds, state and federal officials who manage seabird populations and refuges, and individuals with interests in marine conservation. Over the years we have advised and worked cooperatively with government agencies to further these interests. PSG has been especially active with regard to oil spill restoration.

The Draft Plan proposes spending about $2.9 million for bird-related natural resource projects, specifically the following:

1. Creation, enhancement, protection of brown pelican communal roost sites;

2. Seabird nesting habitat restoration at Anacapa Island;

3. Public education and awareness; and

4. International efforts for brown pelicans (educational and protection activities; eradication of exotics on Baja islands; monitoring of populations).

In general, PSG supports the projects that the Trustee agencies have proposed. We offer the following observations and comments with respect to the details of some of the proposals.

First, we applaud the Trustee agencies' decision to allow funds to be spent in Mexico to restore brown pelicans. We believe that restoration in Mexico will have very high value for the damaged pelican population, and are gratified that the agencies are applying sound ecological principles in their consideration of projects. PSG has been frustrated in commenting on other restoration plans where the trustee agencies have stated that restoration funds can only be used at the location where the injuries took place. We congratulate you for making this determination, and hope that other trustee agencies for other restoration plans elsewhere will allow restoration projects to be implemented far from the spill site where this makes ecological sense.

Second, we strongly believe that all projects should be subject to competitive bidding and, like projects funded by the *Exxon Valdez* trust fund, should use a standard request for proposal and a peer review process. Our experience has taught us that sole source contracts often cost much more for less return (and thus less benefit to seabirds) than competitively bid contracts. Moreover, there is a public perception that sole sourcing service contracts to those individuals or entities who represented the government as experts in the settlement negotiations is improper. When this occurs, it appears that the trustee agencies are improperly "paying off" individuals for providing the testimony that the government wished to elicit. The restoration process will be cleansed of such taints if all projects are awarded after competitive bidding.

Third, our members support public education programs that work in schools with bi-lingual educators teaching about marine food webs, the role seabirds play and the effects of pollution on the ocean environment. This could take the form of a rotating set of programs for school assemblies or visits to science departments on a regular basis over a number of years in the affected areas.

Finally, we understand that the trustee agencies have already let a large contract to remove black rats from Anacapa Island using funds from the American Trader settlement. PSG supports removal of predators on Anacapa Island and on other colonies where seabirds breed because they can do terrible damage. Nevertheless, we do not condone expending trustee funds before the public comment period has run.

PSG thanks you for this opportunity to comment on the Draft Plan.

Sincerely,

Craig S. Harrison

Craig S. Harrison
Vice Chair for Conservation

National Audubon Society–*California*

July 27, 2000

Ms. Carol Gorbics
U.S. Fish and Wildlife Service
2730 Loker Avenue
Carlsbad, CA 92008

RE: Support for Draft Restoration Plan and Environmental Assessment for Seabirds Injured By the *American Trader* Oil Spill

Dear Ms. Gorbics:

The National Audubon Society~California is pleased to provide written comments on the Draft Restoration Plan and Environmental Assessment for seabirds injured by the *American Trader* oil spill.

We concur with the proposed restoration activities outlined in the Draft Restoration Plan, and urge the Trustee Council to approve the Draft Restoration Plan as circulated to the public. Our main observation is that the nexus between the "injured resources" – i.e. seabirds – and the restoration activities must be the guiding principle of funded restoration activities. The Trustee Council appears to have done a very thorough job in analyzing the affected resources, and developing a comprehensive restoration plan that will directly benefit seabird resources.

The mission of **Audubon~California** is to work in California to conserve and restore natural ecosystems, focusing on birds, other wildlife, and their habitats for the benefit of humanity and the earth's biological diversity. We provide leadership on state conservation and environmental education programs; we develop and strengthen local conservation action through our chapter network; and we participate as a division of the National Audubon Society on national and international campaigns to protect and restore wildlife habitats.

One of the national organization's high profile campaigns is the "Project Puffin and Seabird Restoration Program." Although based in restoration of seabird habitat along the East coast, this project does indicate Audubon's commitment and expertise to seabird

protection and recovery issues. For more information on Audubon's Seabird Program, go to http://www.audubon.org/bird/puffin.

Audubon~California strongly believes that the Trustee Council's primary and compensatory restoration strategy is appropriate, and that it will meet the legal requirements of the various laws under which you are obligated to perform restoration.

In plain english, you have to go to where the birds are in order to see a measurable benefit to injured resources. We agree with the Council that predator control activities on Anacapa Island and the Brown Pelican roosting habitat improvements are exactly the type of project that "will help return the injured natural resources and services to baseline faster and with greater certainty than would occur with natural recovery only."

After issuing the Final Restoration Plan and after approval of the EA, we would hope that your agency and the others on the Trustee Council will work with Steve Kress of our Seabird Program to deal with technical issues associated with your restoration activities. His address is:
Steve Kress, Executive Director
Project Puffin
159 Sapsucker Woods Road
Ithaca, New York 14850
(607)257-7308

We appreciate your work on behalf of injured seabirds and would be happy to work with the Service and other trustee agencies to assist in your recovery and predator control efforts. Please do not hesitate to contact us at 916/481-5332 if we can be of any help.

Sincerely,

John McCaull
California Legislative Director

EL DORADO AUDUBON SOCIETY
Post Office Box 90713
Long Beach, California 90809-0713

July 26, 2000

To: Carol Gorbics
U.S. Fish and Wildlife Service
2730 Loker Avenue West
Carlsbad, CA 92008

From: Ann Cantrell
Conservation Chair, El Dorado Audubon

Re: Comments: DRAFT RESTORATION PLAN AND ENVIRONMENTAL ASSESSMENT FOR SEABIRDS INJURED BY THE *AMERICAN TRADER* OIL SPILL

Although I commented at the public meeting on June 29, 2000 in Huntington Beach, I would like to add some further remarks on the Draft Restoration Plan for the American Trader Oil Spill.

Among the comments from the public that night, many expressed amazement that although this spill occurred in Orange County, polluting fourteen miles of beach from Long Beach Harbor to Laguna Beach, **none** of the affected area was receiving compensation from the settlement. In speaking with John Bradley of the Seal Beach National Wildlife Refuge, I find that the draft's proposed uses appear to oppose the policies of Fish and Wildlife. John indicated that accepted procedure is to restore the areas most affected, try to reduce the impacts and to compensate the region where the damage has been done.

The Office of Spill Prevention and Response (OSPR) news release of June 27, 2000 states: "The Trustees plan to use the funds to restore and enhance habitats to benefit seabirds that were affected by the spill". However, Santa Barbara Harbor, Agua Hedionda Lagoon, Zuniga Point Jetty, Channel Islands, Ventura, San Diego Bay, Malibu Lagoon, etc. are not in the spill area--and only Dana Point is even in Orange County!

Many changes have occurred in the spill area in the last ten years. Bolsa Chica Wetlands have now been saved from development and are being restored. The Los Cerritos Wetlands in Long Beach currently have a willing seller, as does the Hellman Ranch Wetlands in Seal Beach. Other wetlands in the vicinity of the spill are the Huntington Beach Wetlands, Talbert Marsh and Little Shell Wetlands. These areas provide habitat and food for some or all of the species affected by the oil and have many needs. All of them could benefit from this settlement money.

There are many projects in the immediate area of the oil spill which would accomplish the desired protection of the California Brown Pelican and other water birds. The California Least Terns need more protected nesting sites, as do the Western Snowy Plovers. One of the greatest needs at the Seal Beach Refuge is for a boom at the entrance to the wetlands to protect from future oil spills and to keep out the trash which is constantly being washed into this important habitat. Although several clean-ups are held each year in the Refuge, the trash is a constant problem.

The boom could also be built to serve as a resting platform for the Pelicans and other birds. As mentioned in the Plan, placing Pelican roosts in harbors have a number of negative aspects. Placing the roosts in a protected wetland eliminates some of these problems.

The proposal of protecting the Pelicans and other birds at their nesting sites on the Channel Islands, is a needed project. However, the Draft Plan admits that there are adverse impacts in using rodenticides to try and eliminate the rats from Anacapa Island. As long as there is a risk to non-target species, especially birds, El Dorado Audubon is opposed to using this method of eradication.

There is also a dispute as to whether signs, brochures or posters will do much to solve the problems of mono filament fishing lines. El Dorado Audubon has attempted to educate fishermen in El Dorado Regional Park of the dangers of fishing lines and hooks. Working with Long Beach Parks Recreation and Marine, we designed and placed signs in the fishing lake. Unfortunately, this has not been very effective. The signs have been vandalized and there are always those people who will ignore the signs. While picking up lines and hooks at the park, I have had fishermen tell me they hated birds because they took the fish and even because they "poop" on their cars.

It is agreed that education of the public is needed. However, it was not the public which caused this oil disaster, it was British Petroleum. What needs to be done now is to try to prevent any future catastrophes and to set aside marine protected areas and restore them.

- **Educate the oil industry. Require double hulls on all oil tankers. Reduce diesel use in harbors. Permanently close the Golden West terminal in Huntington Beach. Acquire and restore additional wetlands. Protect the wetlands with booms.**

We respectfully request that some or all of the $2.5 million be used for bird-related natural resource restoration projects in the area of the spill, not in Santa Barbara, San Diego or other areas far removed from the site.

Thank you for your consideration,

Ann Cantrell
Ann Cantrell
El Dorado Audubon

Bruce Monroe
Bruce Monroe
Long Beach Sierra Club

Don May
Los Cerritos Wetlands Task Force

Janice Dahl
Los Cerritos Wetlands Task Force

Los Cerritos Wetlands Task Force
Tim Anderson
Friends of the Seal Beach National Wildlife Refuge

Lou Ann Dawson
Los Cerritos Wetlands Task Force

Robert Palmer

Surfrider

Charles Moore

Algalita Marine Research Foundation

Diana Mann

EcoLink Long Beach

Adrea Stoker

Dave Jeffries, Sec., California Earth Corps

Residents For Less Pollution

Gordon LaBedz M.D

Letter sent by e-mail and U.S. Postal Service

APPENDIX F: Proposals Submitted During Review Process

The TC received many specific proposals on how to spend American Trader seabird restoration funds. These proposals were evaluated to determine if they were generally consistent with our screening criteria and the Restoration Plan was modified to include a general project description and evaluation. Specific details of proposed projects are not included in the Final Restoration Plan as the projects may be subject to a competitive bidding process in the future.

- Least Tern Protection and Habitat Enhancement: See Section 4.6.4

  In summary, this project was not considered further because it did not meet the following criteria: (a) consistency with Trustees' restoration goals and (b) relationship to injured resources or services.

- Installation of Trash Booms in Los Cerritos Wetlands, Los Cerritos Channel and Seal Beach National Wildlife Refuge: See Section 4.6.5

  In summary, this project was not considered further because it did not meet the following criteria: (a) relationship to injured resources or services and (b) duration of benefits.

- Acquisition and restoration of Huntington Beach wetlands including Big and Little Shell wetlands, Talbert marsh: See Section 4.6.2

  In summary, the expenditure of funds for wetlands acquisition would be expensive. Both restoration and acquisition as a plan element provide a weak nexus to the primary injured bird species. In addition, the TC criteria states that projects in the restoration plan should not duplicate other efforts already ongoing at the same location. Local, state and federal activities are ongoing on coastal wetland enhancement and restoration in the southern California area.

- Wildlife Care Center of Orange County: See Section 4.6.6

  In summary, this proposal is not consistent with the Trustee's restoration goals because it duplicates efforts already ongoing. In California, oiled bird rehabilitation programs are funded by spill response funds. The Oiled Wildlife Care Network that has been created in California continues to receive funding from the State Oil Spill Response Trust Fund. Therefore, the TC has determined that funds related to rehabilitation and response activities are already available statewide.

- Additional educational projects including a live Channel Islands video feed to NPS visitor center and video documentation Anacapa Island Seabird Restoration project: See Section 4.4.3

  In summary, these project components have been added to the preferred alternatives in the Public Education and Awareness project.

- Restoration of California Breeding Populations of Western and Clark's Grebes: See Section 4.4.5

  In summary, some of the components of this proposal have been added to the list of preferred alternatives.

APPENDIX G: Finding of No Significant Impact
Part 1: U.S. Fish and Wildlife Service - December 5, 2000

FINDING OF NO SIGNIFICANT IMPACT

Restoration of Injuries to Seabirds Resulting from the American Trader Oil Spill

Federal and State Trustee Agencies:
U.S. Fish and Wildlife Service
2730 Loker Avenue West
Carlbad, CA 92008

NOAA Habitat Conservation Team
NMFS, Southwest Region
777 Sonoma Ave
Santa Rosa, CA 95404

California Department of Fish and Game
Oil Spill Prevention and Response
1700 K Street, Suite 250
Sacramento, CA 95814

The U.S. Fish and Wildlife Service, in collaboration with the National Oceanic and Atmospheric Administration (Federal Trustees) and the California Department of Fish and Game (State Trustee), proposes to implement a restoration program to benefit seabird populations and habitat that were injured by the American Trader oil spill. The United States and the State of California reached a settlement with three of the defendants (BP America, Inc., BP Oil Supply Company and BP Oil Shipping Company, USA) in 1994. Due to challenges to the settlement from non-settling defendants, the settlement dollars were not available until 1998. The portion of the settlement addressed in this Restoration Plan and Environmental Assessment covered the seabird related natural resource ecological damage claim which had an associated monetary settlement of $2,484,566 plus interest ($487,174.15) specifically to address bird-related natural resource injuries. The restoration strategy for this Restoration Plan focuses on seabird related natural resource injuries as required by the state and federal settlement agreements. The goal of this restoration plan is to compensate for injuries to seabird related natural resources and services resulting from the American Trader oil spill. This goal can be achieved by returning seabird related injured natural resources to their baseline condition and by compensating for any interim losses of resources and services during the period of recovery to baseline. This goal is commensurate with those set out to guide restoration activities under the Clean Water Act and Oil Pollution Act of 1990 (OPA). (Although OPA was enacted subsequent to the American Trader oil spill, the Trustees determined that the guidance provided by OPA and the Clean Water Act was appropriate for guiding this restoration effort.)

Project Description

The preferred alternative includes multiple individual restoration actions listed in Table 1. Generally, these projects are focused on restorative actions that would benefit those seabird species injured by the spill considering both abundance of oiled individuals recorded and sensitivity of specific species at the time of the spill. Over 95% of the dead or oiled birds were seaducks (30%; black and surf scoters), pelicans and allies (27%; California brown pelicans and various cormorants), loons and grebes (22%), gulls and allies (13%), and alcids and tubenoses (4%). In addition, the Trustees considered the sensitivity and vulnerability of each species injured by the spill and focused on those birds that were breeding during the spill event and clean-up period including: California Brown Pelican, Ashy Storm Petrel, Brandts' Cormorant, Cassin's Auklet and Xantus' Murrelet. Where feasible, projects were designed to benefit these groups of species and individual species. Project strategies focused on identifying life history features limiting populations which included (1) limited night roosting habitat for California Brown Pelicans throughout the Southern California Bight, (2) limited or degraded nesting habitat for ground and burrow nesters throughout their breeding range including the Southern California Bight and Mexican waters for those species that use habitat in both nations (California Brown Pelicans, Xantus' Murrelet, Ashy Storm Petrel), (3) ongoing adverse impacts degrading habitat or reducing habitat availability due to human disturbance (California Brown Pelican, Western and Clark's Grebes).

Table 1. Preferred Restoration Actions

Roost Site Creation
Santa Barbara Harbor , Agua Hedionda Lagoon, other locations
Roost Site Enhancement
Zuniga Point Jetty, Moss Landing, Channel Islands Harbor, Ventura Harbor, San Diego Bay National Wildlife Refuge, Coal Oil Point, Belmont Island, Malibu Lagoon, Seal Beach National Wildlife Refuge, Bolsa Chica State Ecoreserve, other locations
Roost Site Protection
Conservation Easements at Privately Owned Locations
Decrease Human Disturbance
Marina del Rey, Ventura & Channel Islands Harbors; King, Dana Point and Oceanside Harbors' Jetties, Shell Beach and other locations
GIS atlas of roost sites for public and agency use
Seabird Nesting Habitat Restoration on Anacapa Island
Public Education and Awareness
Educational Materials on Anacapa Restoration, Shell Beach Educational Materials, Sanctuary Brochure on Brown Pelicans, West Anacapa Closure Educational Materials, Marker Buoys at West Anacapa, Bilingual Seabird Protection Brochures, Other Educational Projects
Anacapa Restoration Project Documentary Video, Brown Pelican Live Video Feed Project
International Efforts
Seabird Protection Activities, Removal of Introduced Predators
Western and Clark's Grebe Habitat Enhancement and Restoration

Alternatives

The EA addressed many individual projects which were considered for implementation. The Federal Consent Decree and the parallel State Settlement Agreement specified certain priority and alternative projects which were required to be considered. They were identified during the settlement process as projects which had a close nexus to the locations, natural resources, and services injured by the spill. These projects were believed to be feasible when the settlement agreement was crafted (1994) based on past experience with the proposed techniques and were believed to provide benefits appropriate for the scale of the injuries caused by the spill. The Trustees retained the ability to select additional or alternative restoration projects following further examination of the scientific and engineering

requirements and objectives of the priority and alternative projects specified in the Consent Decree and Settlement Agreement and based on the available funds. Such additional projects must meet the objective of restoring resources injured by the spill in accordance with the provisions of the Clean Water Act and other relevant federal and state laws governing the use of recoveries for natural resources damages. In addition, the Trustees solicited additional project ideas from agency biologists and during the public review process.

The Trustees developed criteria to evaluate and prioritize the entire suite of projects that were under consideration. The criteria include relevant federal and state law provisions governing use of recoveries for natural resource. The suite of projects was then divided into those contained in the (1) Preferred Alternatives, (2) Other Restoration Actions Considered - Non Preferred Alternatives and (3) No Action Alternative. The Preferred Alternative contains the following general projects: Brown Pelican Roost Site Creation, Enhancement and Protection; Seabird Nesting Habitat Restoration on Anacapa Island; International Brown Pelican Population and Habitat Protection; Western and Clark's Grebe Habitat Protection and Restoration. In addition, there is an associated Public Education and Awareness Project to be done in conjunction with each implemented restoration action. The Other Alternatives Considered - Non Preferred Alternatives included the following general projects: Habitat Enhancement at Elkhorn Slough; Acquisition, Restoration and Protection of Wetland Habitat; and Enhancement of Seabird Habitat on Santa Catalina or San Clemente Islands; and Enhancement of Least Tern Habitat. The Non Preferred Alternatives were determined not to meet one or more of the threshold criteria set forth by the Trustees for evaluating projects and are summarized as follows.

> The Habitat Enhancement at Elkhorn Slough project was determined to duplicate other ongoing projects.
>
> The Acquisition, Restoration and Protection of Wetland Habitat project does not fully meet the initial screening criteria set forth in the plan for the following reasons. Injuries to wetland habitat was minimal. The expenditure of funds for wetlands acquisition would be prohibitively expensive and would duplicate efforts with other federal, state, and local wetland acquisition plans such as the Southern California Wetlands Recovery Project. Wetlands acquisition in the area immediate to the spill are particularly expensive due to the local real estate market, and does not provide an adequate nexus to the primary injured seabird species.
>
> The Enhancement of Seabird Habitat on San Clemente and Santa Catalina Island by removing introduced species was determined to be infeasible or inadvisable for the Trustees due the large size of the islands, the large cost of a removal effort and the limited potential for benefitting injured seabird resources on these islands. Other state or federal endangered and sensitive species also occur on these islands which would make the widespread use of rodenticides for rat removal dangerous to the survival of endemic foxes, loggerhead shrikes and other native species. (These species are not present on Anacapa Island where a similar project is included in the Preferred Alternative.)
>
> The Enhancement of Least Tern Habitat project did not meet the Trustees threshold criteria. Because of their migratory patterns, no Least Terns were present anywhere within the southern

California bight during the spill event or cleanup period. Therefore, projects related to the California Least Tern do not meet the screening criteria requiring a nexus to the injured resources.

The No Action Alternative was not selected because it would not meet the goal of restoring lost natural resources or services lost due to the American Trader oil spill.

Environmental Impacts

Based upon the information contained in the Restoration Plan and Environmental Assessment, we have determined that this Federal project would not significantly affect the quality of the human environment, a finding based on the following factors:

1. The project will not result in any adverse impacts to any federally listed species or species proposed for Federal listing. For the Anacapa Island Restoration Project, activities have been timed to avoid seasonal presence of the federally and state endangered California Brown Pelican. The annual island malacothrix is a federally listed threatened plant species. Mitigative actions have been incorporated into the plan to avoid impacts to this species. The determination of effects, as mitigated, were "Not Likely to Adversely Affect" on Brown Pelican and a "No Effect" on Island Malacothrix. For other proposed restoration actions, no adverse impacts to Federally listed species or species proposed for Federal listing have been identified. Those restoration projects which are targeted at restoration of injured pelican populations by enhancing habitat will beneficially impact the endangered California Brown Pelican by removing stressors which may restrict population growth. This will allow the affected populations to more readily return to pre-spill levels.

2. The proposed restoration actions are not expected to have any significant adverse affects on wetlands and floodplains, pursuant to Executive Orders 11990 and 11988. No known wetland areas will be adversely impacted by these restoration actions.

3. Temporary minor impacts to vegetation would occur, however, project implementation staging sites and activities will be required to avoid and/or minimize adverse affects to sensitive vegetative areas.

4. Short-term minor impacts to fish and wildlife are likely to occur from project implementation. However, procedural guidelines will be followed, mitigative measures taken and the activities timed to minimize temporary disturbance to fish and wildlife. Over the long-term, the restoration actions are is expected to benefit bird species affected by the American Trader oil spill by returning their populations to pre-spill levels. The beneficial effects are designed to allow affected seabird populations to return to pre-spill levels. Because they are not designed to provide a net beneficial impact, these benefits do not constitute a significant beneficial impact because 1) the program is attempting to replace environmental benefits lost due to injury and because 2) these benefits represent relatively

minor improvements in resource condition in the context of the continuing environmental degradation occurring along the southern California coast.

5. Short-term, localized impacts may occur to water quality as a result of the Anacapa Island Restoration project. Impacts are expected to be short-term and not sustained.

6. Project implementation activities may have temporary adverse effects on recreation in the project area particularly as is related to the Anacapa Island Restoration Project. Impacts are expected to be short-term and not sustained.

7. There would be no long-term adverse impact to social and economic conditions resulting from the implementation of the proposed restoration actions. Implementation of the habitat restoration projects may enhance aesthetic values of the community and increase passive recreation opportunities.

8. None of the project features will result in long-term adverse affects to human health or the environment or result in disproportionate adverse effects to low-income or minority populations or alter social or economic conditions in the region.

9. The Service applied the stipulations of the *Programmatic Agreement Among the U.S. Fish and Wildlife Service Region 1, the Advisory Council on Historic Preservation, and the California State Historic Preservation Officer Regarding the Administration of Routine Undertakings* (PA) to the proposed project. The Service determined that the proposed project falls under Appendix B Items 2 and 6 of the PA. Appendix B projects are exempt from case-by-case review by the California State Historic Preservation Office, and can proceed with implementation under the stipulation that, if any cultural resources are discovered during the project, work will halt and the Service's Regional Archaeologist shall be contacted.

10. No Indian Trust Assets have been identified within the project area.

11. The Trustees have integrated this Restoration Plan and Environmental Assessment with the NEPA and California Environmental Quality Act (CEQA) processes to comply, in part, with their requirements. This integrated process allows the Trustees to meet the public involvement requirements of NEPA and CEQA concurrently. The Restoration Plan/EA is intended to satisfy the requirements of NEPA and CEQA by: (1) summarizing the current environmental setting, (2) describing the purpose and need for restoration action, (3) identifying alternative actions, (4) assessing the proposed actions' environmental consequences, and (5) summarizing opportunities for public participation in the decision process. However, project-specific NEPA and CEQA compliance may be needed for some of the proposed restoration projects once detailed implementation plans are developed. Other projects may fall within an existing EIS or EIR.

Therefore, it is my determination that the implementation of the restoration plan does not constitute a

major Federal action significantly affecting the quality of the human environment under the meaning of section 102(2)(c) of the National Environmental Policy Act of 1969 (as amended). As such, an environmental impact statement is not required. An environmental assessment has been prepared in support of this finding as is available upon request to the U.S. Fish and Wildlife Service, Carlsbad Fish and Wildlife Office, 2730 Loker Ave. West, Carlsbad, CA 92008.

/signed/
/Michael J. Spear/

Manager, California/Nevada Operations Office

December 5, 2000

Date

APPENDIX G: Finding of No Significant Impact
Part 2: National Oceanic and Atmospheric Administration (NOAA)

FINDING OF NO SIGNIFICANT IMPACT
RESTORATION PLAN AND ENVIRONMENTAL ASSESSMENT
FOR THE
FINAL RESTORATION PLAN FOR THE FEBRUARY 7, 1990, AMERICAN TRADER OIL SPILL, HUNTINGTON BEACH, CALIFORNIA

The National Oceanic and Atmospheric Administration (NOAA) is a cooperating Federal agency for National Environmental Policy Act (NEPA) compliance for the Final Restoration Plan for the February 7, 1990, American Trader Oil Spill, Huntington Beach, CA. The Natural Resource Damage Assessment (NRDA) Trustees included NOAA, the U.S. Fish and Wildlife Service (USFWS), and the State of California, through the Office of Spill Prevention and Response. These parties participated in the damage assessment and restoration planning activities to address injury and lost services to natural trustee resources as a result of the oil spill.

The Restoration Plan and EA examines and evaluates the effects of the proposed restoration actions on the environment and concludes that the action does not constitute a major Federal action that would significantly affect the quality of the human environment. Therefore, an environmental impact statement has not been prepared. The preferred alternative includes multiple individual restoration projects that would benefit those seabird species injured by the spill considering both abundance of oiled individuals recorded and sensitivity of specific species at the time of the spill. The EA addressed many individual projects that were considered for implementation. The Trustees developed criteria to evaluate and prioritize the entire suite of projects that were under consideration. The criteria include relevant federal and state law provisions governing use of recoveries for natural resource.

The suite of projects was then divided into those contained in the (1) Preferred Alternatives, (2) Other Restoration Actions Considered - Non Preferred Alternatives and (3) No Action Alternative. The Preferred Alternative contains the following general projects: Brown Pelican Roost Site Creation, Enhancement and Protection; Seabird Nesting Habitat Restoration on Anacapa Island; International Efforts for Restoration of Brown Pelican and other Injured Seabirds; Western and Clark's Grebe Habitat Protection and Restoration.

In addition, there is an associated Public Education and Awareness Project to be done in conjunction with each implemented restoration action. The Other

Alternatives Considered - Non Preferred Alternatives included the following general projects: Habitat Enhancement at Elkhorn Slough; Acquisition, Restoration and Protection of Wetland Habitat; and Enhancement of Seabird Habitat on Santa Catalina or San Clemente Islands; and Enhancement of Least Tern Habitat. The Non Preferred Alternatives were determined not to meet one or more of the threshold criteria set forth by the Trustees for evaluating projects. The No Action Alternative was not selected because it would not meet the goal of restoring lost natural resources or services lost due to the American Trader oil spill.

Based upon the information contained in the Restoration Plan and Environmental Assessment, we have determined that this Federal project would not significantly affect the quality of the human environment. Mitigation measures have been designed to minimize any impacts. For the Anacapa Island Restoration Project, activities have been timed to avoid seasonal presence of the federally and state endangered California Brown Pelican. The annual island malacothrix is a federally listed threatened plant species. Mitigative actions have been incorporated into the plan to avoid impacts to this species. In addition, a separate EIS has been prepared by the National Park Service for the Anacapa Restoration Project. Potential impacts to fish and wildlife from the Roost Site Creation, Enhancement and Protection projects and other preferred projects will be mitigated through construction windows, best management practices and other mitigation methods.

The public was afforded two opportunities to review and provide input on the Restoration Plan and EA, including the preferred alternative. A public meeting was held in Huntington Beach, California on June 29, 2000, to present the Draft Restoration Plan and EA to the public. The Draft Restoration Plan, including the EA, was also made available to the public for a 30-day comment period, ending July 10, 2000. The public comments received as a result of this process are addressed in the Final Restoration Plan.

DETERMINATION:

Based upon an environmental review and evaluation of the Final Restoration Plan and Environmental Assessment for the February 7, 1990, American Trader Oil Spill, Huntington Beach, California, I have determined that the proposed action does not constitute a major Federal action significantly affecting the quality of the

human environment within the meaning of Section 102(2)(c) of the National Environmental Policy Act of 1969, as amended. Accordingly, an environmental impact statement is not required for these projects.

(Original signed by) *1/04/01*

Penelope D. Dalton
Assistant Administrator for Fisheries
National Marine Fisheries Service
National Oceanic and Atmospheric Administration

APPENDIX H: State of California Categorical Exemption

Notice of Determination

TO: State of California
Office of Planning and Research
1400 Tenth Street, Room 121
Sacramento, California 95814

FROM: Department of Fish and Game
Office of Spill Prevention and Response
1700 K Street, Suite 250
Sacramento, Calfiornai 95814

SUBJECT: Filing of Notice of Determination in Compliance with Section 21108 or 21152 of the Public Resources Code

Project Title

Restoration Plan and Environmental Assessment for Seabirds Injured by the American Trader Oil Spill (RP&EA)

State Clearinghouse Number (If submitted to State Clearinghouse): 2001011062

Contact Person	***Area Code***	***Phone***	***Extension***
Paul Kelly / Katherine Verrue-Slater	(916) 323-4335 / (916) 324-9813		

RECEIVED
APR 0 5 2001
OSPR

Project Location – Specific

Various Southern California Locations (see Table 3 of RP&EA enclosed)

Project Location – City ***Project Location – County***

Various Southern California Locations (see Table 3 of RP&EA enclosed)

Description of Nature, Purpose, and Beneficiaries of Project

Multiple Restoration Actions to benefit Seabirds: Roost Site Creation and Enhancement at various locations in Southern California Bight; Restoration of Seabird Habitat on Anacapa Island; Public Education re: seabirds; International (Mexico) seabird protection and predator removal.

This is to advise that the Department of Fish and Game, Office of Spill Prevention and Response ha approved the above-described project on March 26, 2001 and has made the following determinations regarding the above-described project:

1. The project ☐ will have a significant effect on the environment.
   X will not have a significant effect on the environment

   X A Restoration Plan and Environmental Assessment for Seabirds Injured by the American Trader Oil Spill was prepared for this project pursuant to the provisions of CEQA.

   X A Finding of No Significant Impact was prepared for this project and adopted b the Lead State Agency pursuant to the provisions of CEQA.

2. Mitigation measures ☐ were, X were not, made a condition of the approval of the project.

3. A statement of Overriding considerations ☐ was, X was not, adopted for this proljec

This is to certify that the final FONSI and RP/EA with comments and responses and record of proje approval is available to the General Public by calling: Mr. Paul Kelly at (916) 323-4335

Date Received for filing and positng at OPR: _____

Paul R. Kelly — Council Representative, American Trad
Signature (Public Agency) — Title Truste

CALIFORNIA DEPARTMENT OF FISH AND GAME

COUNTY CLERK
Neg Declaration/Ntc Determination
Filed per P.R.C. 21152
POSTED

JAN 30 2001

Removed: 3-2-01
By _____ Dept.
County of Riverside, State of California

NOTICE OF INTENT TO ADOPT FEDERAL DOCUMENT

In the Matter of the Final Restoration Plan
and Environmental Assessment for Seabirds Injured by the
American Trader Oil Spill

NOTICE IS HEREBY GIVEN that the California Department of Fish and Game, Office of Spill Prevention and Response (OSPR) will adopt and use the Finding of No Significant Impact (FONSI) prepared by the United States Fish and Wildlife Service (USFWS) for the above-referenced Restoration Plan. The FONSI will be used in place of a negative declaration. The DFG/OSPR believes that the federal document meets the requirements of the California Environmental Quality Act.

The Final Restoration Plan and Environmental Assessment for Seabirds Injured by the American Trader Oil Spill (RP/EA) was prepared by the USFWS in collaboration with the National Oceanic and Atmospheric Administration (Federal Trustees) and the California Department of Fish and Game (State Trustees). Public review of the RP/EA was an integral part of the restoration process. There was a 45 day public review and comments period from June 29, 2000, in Huntington Beach. Based on the information contained in the RP/EA, the USFWS concluded that there is no significant effects on the environment.

Copies of the FONSI and RP/EA may be obtained by calling Mr. Paul Kelly at (916) 323-4335.

Date: January 24, 2001

DEPARTMENT OF FISH AND GAME

Scott D. Schaefer
Administrator (Acting)
Office of Spill Prevention and Response

FILED
RIVERSIDE COUNTY
JAN 30 2001
GARY L. ORSO
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STATE OF CALIFORNIA GRAY DAVIS, Governor

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February 14, 2001

File Ref.: American Trader

Ms. Nadell Gayou
The Resources Agency
1020 Ninth Street, 3rd Floor
Sacramento, CA 95814

Mr. Paul Kelly
Ms. Katherine Verris-Slater
Department of Fish and Game
1700 K Street, Suite 250
Sacramento, CA 95814

Dear Ms. Gayou, Mr. Kelly and Ms. VerrisSlater:

Staff of the California State Lands Commission (CSLC) has reviewed the Restoration Plan and Environmental Assessment for Seabirds Injured by the American Trader Oil Spill (RP&EA), SCH #2001011062. Based on this review, we offer the following comments.

As you may be aware, the CSLC has jurisdiction and authority over all ungranted tidelands, submerged lands, and the beds of navigable rivers, sloughs, lakes, etc. The CSLC has an oversight responsibility for tide and submerged lands legislatively granted in trust to local jurisdictions (Public Resources Code Section 6301). All tide and submerged lands, granted or ungranted, well as navigable rivers, sloughs, etc. are impressed with the Common Law Public Trust. The Pubic Trust is a sovereign public property right held by the State or its delegated trustee for the benefit of all the people.

Additionally, the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act (Act) is referenced on page 35, section 5.2.4. Provisions of the Act expanded the CSLC's responsibilities which are administered by our Marine Facilities Division. In light of the above referenced CSLC jurisdiction, we offer the following comments and/or suggestions and appreciate the opportunity to comment on the RP&EA.

1. Page 2 of the Finding Of No Significant Impact. The introduction paragraph provides the settlement year (1994) but does not discuss when the spill occurred. The last statement is therefore confusing. Please clarify.

2. Page 16 of the Final RP&EA, Section 4.4.1.2. The creation of roost sites includes creating artificial islands within lagoons. This activity would likely require a permit under Section 404 and 10 of the Clean Water Act and should be discussed in the respective regulatory discussion in Section 5.2 of the RP and in the adverse impact section [4.4.1.4 (B)].

3. Page 17 of the Final RP&EA, Section 4.4.1.3C. One of the roost site enhancement activities includes vegetation removal on islands at river mouths. The document should identify the type(s) of vegetation being removed and the techniques of removal (e.g., mechanical), should indicate that no other sensitive species or resources are affected by such removal and should ensure that no invasive species colonize bare areas (see invasive species comment below).

4. Page 19 of the Final RP&EA, Section 4.4.1.5. The statement, "All projects that involve physical manipulation are very likely to succeed" does not seem appropriate here. The project described in the next paragraph involved a form of physical manipulation of habitat and was a "complete failure" according to the document.

5. Page 22 of the Final RP&EA, Section 4.4.2.4B. Could adverse impacts also occur as a result of runoff containing rodenticide? Are individuals that drink rodenticide-contaminated water at risk of primary or secondary poisoning? If so, these potential adverse impacts should also be mentioned in this section.

6. Page 25 of the Final RP&EA, Section 4.4.3.3, references conservation groups but does not identify specific groups or likely groups to implement the international restoration activities. Instituto Nacional de Ecologica and Pronatura were identified as Mexican government and non-government entities to potentially implement restoration efforts. Are there others that would be involved? What specific U.S. organizations would likely work in cooperation with the Mexican entities?

7 Page 30 of the Final RP&EA, Section 4.4.5.2 regarding the Western and Clark's Grebe Restoration. Lake Almanor, Clear Lake, and Topaz Lake were identified as areas targeted for restoration activities for the Western and Clark's grebe. Are specific locations of breeding grebes known within these breeding lakes or will surveys be required to locate all breeding colony locations to implement restoration activities (e.g., buoys and signage restricting disturbance in colony areas)?

8. Page 30 of the Final RP&EA, Section 4.4.5.1, 2~d sentence. Minor typo. Should be scooters, not scoters.

9. Page 34 et. seq. of the Final RP&EA, Section 5.2, identifies Executive Orders (EO) 11988 and 12898 but does not include EO 13112 on Invasive Species (February 3, 1999). EO 13112 should be addressed, particularly regarding the eradication of nonnative black rats on Anacapa Island; to ensure that the type of material being imported to create earthen islands is clean of noxious weeds; and, vegetation removal activities that may promote the spread of invasive species that potentially may be in or near the restoration area.

10. Page 34, et. seq. of the Final RP&EA. Additionally, the California Coastal Act should be included in the list of Key Statutes, Regulations and Policies (e.g., a coastal development permit or consistency review may be required from the California Coastal Commission for certain types of restoration projects that are located in the coastal zone or that affect land or water uses or natural resources of the coastal zone).

Thank you for your consideration of these comments. If you have any questions or desire clarification, please contact Cy Oggins at (916) 574-1884.

Sincerely,

Dwight E. Sanders, Chief
Division of Environmental Planning
And Management

cc: Cy Oggins

Mr. Dwight E. Sanders, Chief
Division of Environmental Planning
and Management
California State Lands Commission
100 Howe Avenue, Suite 100-South
Sacramento, California 95825-8202

March 26, 2001

Comments on The Restoration Plan and Environmental Assessment for Seabirds Injured by the American Trader Oil Spill (SCH #2001011062)

We received your comments dated February 14, 2001, on the Restoration Plan and Environmental Assessment for Seabirds Injured by the American Trader Oil Spill (SCH #2001011062). We appreciate your thorough review. Your comments will be appended to the document along with our responses which follow:

Response to Comment #1 - The spill occurred in 1990. See page 1 of the Restoration Plan.

Response to Comment #2 - Artificial islands would not be constructed through deposition of materials in wetlands, but rather through the construction of floating structures. As stated in Section 5.2.5, project specific environmental (NEPA and CEQA) documents may be needed for some proposed future projects. Clean Water Act requirements (Section 404) and Rivers and Harbors Act requirements (Section 10) are described in Section 5.2.6 and 5.2.11, respectively.

Response to Comment #3 - The vegetation removal project(s) described in Section 4.4.1.3 (B) (4) (b) are generic plans at this time. Studies of pelican roosting ecology currently underway may identify candidate sites. Site specific (NEPA and CEQA) environmental documents may be required as stated in sections 4.4 and 5.1. Future site specific vegetation control measures, will include identification of vegetation types, techniques of removal, consideration of sensitive species, and consideration of invasive species as recommended.

Response to Comment #4 - We agree that the statement regarding the likelihood of success of projects involving physical manipulation is in sharp contrast with the subsequent paragraph. However, the failure of the Moss Landing Wildlife Area pelican roost site management is the only such example known to us. Further, the point we'd hope to emphasize is that we strongly believe we can avoid the problems encountered at Moss Landing through better site selection and project design.

Response to Comment #5 - There are no surface water sources on Anacapa Island. Brodifacoum is not soluble in water. Results of a pilot project showed that rodenticide pellets can and will be kept out of the intertidal zone during application. Accordingly, we do not believe there is a risk of runnoff containing rodenticide or that individuals will be exposed to rodenticide-contaminated water.

Response to Comment #6 - U.S. and Mexican organizations to be involved in this effort have yet to be determined. State and federal agencies of both governments and various Non Government organizations (NGOs) will likely be involved (see Section 4.4.3.3).

Response to Comment #7 - Specific nesting areas of Western and Clark's grebes are known at the inland lake breeding colonies described. Specific management and conservation plans would be developed by contractors through a Request for Proposal process and by local, state and federal agencies.

Response to Comment #8 - The American Ornithologist's Union designated common name for this diving duck species is surf scoter.

Response to Comment #9 - We concur that Section 5.2 should include Executive Order (EO) 13112 (February 3, 1999) - Invasive Species. This 1999 EO directs federal agencies to prevent and control introduction of invasive species in a cost-effective and environmentally sound manner.

Response to Comment #10 - We acknowledge that Section 5.2 should include the California Coastal Act. The jurisdiction of the California Coastal Commission is referred to in Section 5.2.7.

In addition to this Restoration Plan and Environmental Assessment an Environmental Impact Statement (EIS) has been prepared by the U.S. Department of the Interior, National Park Service, which addresses technical issues relating to the Anacapa Island Restoration Project. The Final EIS may be found on the website for the Channel Island National Park at http://www.nps.gov/chis/naturalresources/airp.html.

Thank you for your interest in this natural resource restoration program. If you have additional concerns or questions, please contact me at (916) 323-4335 or via e-mail at pkelly@ospr.dfg.ca.gov.

Paul R. Kelly, Council Representative
American Trader Trustee
Office of Spill Prevention
and Response

cc: Ms. Kathy Verrue-Slater, OSPR
Dept. of Fish and Game
Sacramento

Ms. Nadell Gayou
The Resources Agency
Sacramento

Mr. Cy Oggins
State Lands Commission
Sacramento

APPENDIX I: Approval and Adoption of Final Restoration Plan by Trustee Agencies

APPROVAL AND ADOPTION

The undersigned, as Authorized Official of the United States Department of the Interior, in cooperation with the other natural resource trustees, hereby approves and adopts the "*Final Restoration Plan and Environmental Assessment for the Seabirds Injured by the American Trader Oil Spill*" and selects the restoration projects described as Preferred Alternatives contained therein.

For the United States Department of the Interior through the U.S. Fish and Wildlife Service

By: _____

Name: Michael J. Spear

Title: Manager, California/Nevada Operations Office

Date: DEC - 5 2000

TRUSTEE ADOPTION RESOLUTION

This certifies that the Damage Assessment and Restoration Program Managers, on behalf of the National Oceanic and Atmospheric Administration, approved the " *Final Restoration Plan and Environmental Assessment for Seabirds Injured in the American Trader Oil Spill"* and agreed to the selection of the restoration projects described as Preferred Alternatives contained therein. Approval by the Program Managers is pursuant to the Damage Assessment and Restoration Program Board of Directors' delegation decision of July 17, 1996.

By: Katherine A. Pease

Katherine A. Pease
Senior Counselor for Natural Resources
DARP Manager

Date: January 29, 2001