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7.1 INTRODUCTION TO EVALUATION OF ENVIRONMENTAL CONSEQUENCES

This section describes and compares the potential environmental consequences of the proposed action (restoration of the natural resources injured by the DDTs and PCBs discharged to coastal waters of Southern California) by analyzing the individual projects and the three alternatives described in this Restoration Plan. This plan has been prepared as a programmatic Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) for the purposes of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). The potential environmental consequences are considered within the following context:

- The fundamental purpose of the proposed action is to restore injured natural resources and the services they provide (i.e., to improve the natural and human environment).
- The DDTs and PCBs of the Montrose case are expected to persist in the marine environment of the Southern California Bight for many years.
- The alternatives presented in this Restoration Plan include actions for which this programmatic EIS/EIR fulfills NEPA/CEQA requirements as well as actions that will require further NEPA and/or CEQA analysis at a subsequent stage, after the details of the action are developed.
- The Natural Resource Trustees for the Montrose case (Trustees) anticipate updating the Restoration Plan as implementation progresses and new information becomes available. The actions evaluated constitute the actions the Trustees reasonably foresee implementing over the initial phase (Phase 1) of the program, which will run approximately through 2010.

Subsequent planning and environmental impact analysis will be tiered off of this programmatic EIS/EIR. In the terminology of NEPA, “tiering” refers to the coverage of general matters in a broad EIS with subsequent narrower environmental analysis that incorporates by reference the general discussions and concentrates solely on the issues specific to the analysis subsequently prepared. Tiering is appropriate when impact analysis progresses from a program, plan, or policy EIS to an analysis of lesser scope or to a site-specific analysis. Tiering is appropriate when it helps focus analysis on the issues that are ripe for decision and excludes from consideration issues already decided or unresolved (U.S. Council for Environmental Quality regulations for implementing NEPA, Title 40 Code of Federal Regulations [CFR] Section 1508.28).

In addition to addressing the overall Montrose Settlements Restoration Program (MSRP) effort at a programmatic level, this Restoration Plan and Programmatic EIS/EIR fulfills the impact analysis requirements for ten individual actions (see Table 6-1).¹ Analyses of the direct and indirect environmental effects and proposed mitigation are provided in Section 7.2 for these ten

¹ As a matter of practice, the lead federal agency for this programmatic EIS/EIR, the National Oceanic and Atmospheric Administration (NOAA), undertakes a NEPA analysis for all of its major actions with potential for significant effects on the environment, including those occurring outside the United States and its territories. The analysis of potential restoration actions on Baja California Pacific Islands is being provided to ensure that the public is fully informed about important environmental issues. The production of this NEPA document is in no way intended to affect or influence other United States government policies regarding the applicability of NEPA to actions taken outside the United States. Subsequent site-specific detail development for potential restoration actions in Baja California Pacific Islands may be subject to the environmental review requirements of the Mexican government.

actions and, to the extent possible at this stage, for the remaining seven actions that will require further analysis at a later point when more details are available. Expanded discussions of the actions are provided in Appendices A–D.

NEPA and CEQA also require the analysis of cumulative impacts (Section 7.3) and other mandated discussions (Section 7.4), including: irreversible and irretrievable environmental changes and commitments of resources, the relationship between short-term uses of the environment and the maintenance and enhancement of long-term environmental productivity, growth-inducing effects, and identification of any significant and unavoidable adverse impacts.

The environmental impact analysis in this Restoration Plan and Programmatic EIS/EIR focuses on the following categories considered to have potential relevance to the anticipated actions:

- Biological resources (fish, birds and other wildlife)
- Physical resources (earth resources, including sediments, water resources, and oceanographic and coastal processes)
- Human use (recreation, socioeconomics, and aesthetics)

Effects in the following categories are considered insignificant or not relevant to the anticipated actions:

- Air quality: Air quality impacts from any individual project will either be non-existent or minor (i.e., involve limited production of fugitive dust and emissions from construction vehicles). The impacts will be insignificant contributions, both individually and combined, when compared to impacts from other construction projects and from motor vehicle emissions on highways and streets in the areas where restoration actions take place, and will not represent a significant contribution to regional air quality.
- Agriculture: None of the project sites or anticipated sites are suitable for agricultural use.
- Noise: Restoration activities will not take place at sites near existing human habitation. Construction will involve equipment that produces noise similar to or below the levels already allowed by local ordinances governing normal construction activities. Social attraction as a method for restoring seabirds to islands involves production of recorded sounds in these remote areas, but these activities have been successfully employed in the past and it is unlikely to result in adverse consequences to other biological organisms.
- Population and housing: The sites where actions will take place are not populated and are not considered viable areas for housing development.
- Soils, geology, and geologic hazards: Restoration activities do not involve any modification of the geology at any sites, and no geologic hazards will be increased by MSRP activities.
- Land use planning: The implementation of the MSRP Restoration Plan will not involve significant changes in land use or be inconsistent with existing local and regional plans and policies on land use.

The potential effects in the following categories are not anticipated to be significant at this point, but detail is not yet sufficient for final analysis in this EIS/EIR because the actions that could affect these categories are still conceptual:

- **Hydrology:** The restoration of full tidal exchange wetlands may have hydrological impacts, depending on the nature of the actions and their scale. The potential for such impacts, if any, will be addressed once potential site(s) are identified and project details are more fully developed. None of the other actions evaluated in this Restoration Plan involve physical changes that have the potential for hydrological impacts.
- **Navigation and navigation safety:** The construction and final placement of material for artificial reefs as envisioned in this Restoration Plan will either have no impacts or insignificant impacts to navigation and navigation safety. During the site selection and design of artificial reefs, the Trustees and other project proponents will consider potential effects on navigation and address these issues in site-specific environmental analyses. Numerous artificial reefs have been constructed in Southern California coastal waters in recent decades (Appendix A1, Figure A1-1), and potential impacts to navigation are avoided through consideration of the locations and depths of material placement. For example, in a Mitigated Negative Declaration that the Port of Los Angeles prepared for the proposed San Pedro artificial reef project (Los Angeles Harbor Department 2003), the Port proposed a minimum reef crest depth and proposed avoiding placement of reef material within shipping lanes or within a 200-yard radius around a navigational marker buoy to accommodate U.S. Coast Guard maintenance of the buoy.
- **Transportation, traffic, and roadway safety:** Existing transportation, traffic, and roadway systems will remain unaltered by any projects undertaken under the MSRP. A small amount of temporary traffic may result from moving equipment in and out of certain sites. The potential traffic impacts of transporting rock or concrete to potential reef or roost sites may need to be addressed in a subsequent environmental analysis once greater details about site-specific activities are known; however, it is likely that the minimal number of truck trips to move material from source sites to barge-loading areas will simply replace truck trips of alternative uses of the materials (e.g., to crushers and landfills).
- **Cultural resources:** No significant impacts to cultural resources have been identified for any of the restoration actions. For projects that will involve construction and for which specific sites have not yet been identified (e.g., construction of reefs or modification to fishing facilities), a review of potential cultural resource impacts will need to be conducted once specific sites are identified.

7.2 DIRECT AND INDIRECT IMPACTS OF THE ALTERNATIVES

This section evaluates the direct and indirect environmental effects of the proposed action through analysis of each of the three alternatives: Alternative 1 (No Action), Alternative 2 (Preferred) and Alternative 3. This section also presents mitigation measures to reduce or avoid potential adverse impacts. Expanded descriptions and detailed analysis of the individual projects against the evaluation criteria, including their beneficial and adverse impacts, are provided in Appendices A–D.

7.2.1 Alternative 1 (No Action)

Under the No Action Alternative, the MSRP would not implement any restoration activities except monitoring. Consequently, there would be no environmental impacts when compared to

the baseline, or current conditions. Beneficial effects of natural resource restoration actions would not be realized. The purpose and need for the MSRP (i.e., utilizing the funds from the Montrose settlements to restore injured resources and lost services) would not be met. Without active restoration projects, there would be no biological, physical, or human use benefits or adverse impacts. However, natural resource injuries and lost services resulting from the DDTs and PCBs of the Montrose case would persist in the Southern California Bight for the foreseeable future. Also, no compensation for interim lost natural resource services from the date of the enactment of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (1980) until injuries cease would be realized.

7.2.2 Alternatives 2 and 3

Each of these two alternatives consists of a different combination of the 17 restoration actions described in Section 6 and evaluated in detail in Appendices A–D. Several of these individual actions are common to both alternatives, some are only in one alternative, and some are not included in either. The direct and indirect environmental effects of each of the 17 actions are presented here individually (in the same order as the actions are listed in Appendices A–D); the headings indicate which of the alternatives each action is a part of.

These two comprehensive alternatives have been compiled to evaluate different mixes of restoration actions that the Trustees believe they can accomplish within the \$25 million funding level set for Phase 1 of implementation. Although some of the actions are not specifically included under either Alternative 2 or 3, all actions are evaluated at this point. As a result, the Trustees would be able to proceed with any of the other actions should additional funding become available, or should any of the proposed actions prove infeasible.

A1. Construct Artificial Reefs and Fishing Access Improvements

Alternative 2 [✓] *Alternative 3* [✓] *Neither* []

This action will require subsequent environmental analysis when the project details are more fully developed.

Biological Effects

Direct Effects. This action will convert soft-bottom aquatic habitat to reef habitat. The reduction of soft-bottom habitat on the limited scale feasible under this restoration action, when compared to the predominant extent of such habitat throughout the region, will not significantly affect the total available soft-bottom habitat to those species that rely on it. Unless care is exercised in siting artificial reefs, their construction can potentially impact the availability of other limited inshore habitat or resources, such as eelgrass beds, spawning areas for market squid (*Loligo opalescens*), or important nursery areas for certain fish species such as California halibut.

The displacement of the sandy- or muddy-bottom habitat with hard-bottom substrate will increase the diversity and may increase the number of the animal and plant biota in the area. The fish productivity of rocky reef habitat has been estimated to be between 9 and 23 times that of sandy-bottom habitat (MEC Analytical Systems 1991).

At a conceptual level, reef construction projects are not likely to adversely affect threatened or endangered species or essential fish habitat. Nonetheless, detailed analysis will be performed at a site-specific level once specific sites for reefs are identified.

Indirect Effects. To the extent that reefs constructed under the MSRP program function as production sites for rockfishes or other species that are currently depleted, the reefs may benefit the management and recovery of these depleted species of fish.

Reef-associated fish typically contain lower concentrations of DDTs and PCBs than soft-bottom species, so constructed reefs benefit the biological organisms that prey on fish in the vicinity of the constructed reefs, as these organisms are likely to be exposed to reduced levels of these contaminants.

It is possible that fishing pressure and thus fish mortality may increase in the vicinity of newly constructed reefs. Such an effect might also occur should improvements to fishing access and amenities be constructed under this restoration action and lead to increases in fishing trips to a particular site.

Mitigation Measures. The specific location of each constructed reef will be studied and selected such that the MSRP reefs avoid impacts to eelgrass beds or other nearshore soft-bottom areas that are currently important and contain limited habitat types. State and federal fisheries agencies will be consulted to ensure appropriate reef design, size, and placement, and to ensure that long-term management will accommodate anticipated increases in fishing and other uses of the reef site.

Physical Effects

Direct Effects. The placement of concrete or rock materials into marine waters will cause short-term suspension of sediments at the reef construction site that will result in short-term water quality impacts. The principal effect will be increased turbidity; however, depending on local conditions, the sediments at the reef site might contain elevated contaminant levels.

Indirect Effects. To the extent that the material used to construct a reef is from the demolition of concrete structures, the beneficial reuse of this material will divert it from land disposal and conserve a corresponding increment of landfill space. There may be other trade-offs related to transportation and disposal of materials (such as reduced air quality impacts relative to land disposal), but whether these trade-offs will have net positive or net negative consequences cannot be determined until the site-specific implementation factors are determined.

Placement of reefs in nearshore areas has the potential to disrupt the normal transport of sediment and affect the topography of adjacent subtidal and beach areas. Also, depending on the nature of the soft substrate in a given area, the depth to bedrock, and the slope, the hard substrate dropped to the marine bottom could potentially not perform as intended.

Mitigation Measures. Adjustments to the methods and timing for reef material placement may be developed in consultation with regulatory agencies (i.e., the California Regional Water Quality Control Board, the U.S. Army Corps of Engineers, and the U.S. Environmental Protection Agency [EPA]) to address local conditions and reduce the potential short-term water quality impacts of the construction.

Once planning progresses to the stage in which site-specific studies are undertaken, the potential short-term physical impacts from placing rock or rubble in a given area will undergo engineering and water quality analysis, and additional evaluation will be performed to identify measures to minimize adverse effects.

Human Use Effects

Direct Effects. Artificial reef construction in areas where fish species contaminated by DDTs and PCBs will be displaced by less-contaminated species associated with hard-bottom and water-column habitats will have a direct benefit to anglers whose fishing has been impacted by fish consumption advisories.

Improvements to fishing access (e.g., the addition of various fishing site amenities, including pier extensions, fish-cleaning stations, benches, parking improvements, or other such actions) are not possible to evaluate at this stage as they are highly dependent on the specific details and local site characteristics. However, construction activities at fishing sites (e.g., construction improvements to piers, amenities such as fish-cleaning stations, parking, etc.) may cause short-term disruption to users of a site during the construction period.

Indirect Effects. Artificial reefs provide human use benefits beyond fishing, as they are also popular areas for scuba and free diving for purposes of recreation, hunting, and underwater photography. As with the biological benefits, the human use benefits will be sustained for a period of decades or perhaps longer with minimal operational or maintenance costs.

Depending on their location, design, and depth, artificial reefs could have adverse impacts on various other types of human uses. Uses that could potentially be impacted by shallow reefs include body surfing or wind surfing and, possibly, navigation. Also, constructed reefs will displace soft-bottom species, and the anglers who favor catching these species at the site of a constructed reef will find it harder to catch these fish. Potential impacts to recreational and navigational uses will be a significant consideration in the selection of candidate sites. Findings on these issues will be included in subsequent site-specific environmental documentation and provided to the public for review.

Mitigation Measures. The Trustees undertook a survey of recreational and subsistence anglers in 2002 and 2003, in part for the purpose of determining fishing preferences at fishing sites along the Los Angeles County and Orange County coastline. The data generated by this field intercept survey and follow-up public involvement activities will be used to select sites that minimize negative impacts to anglers who may be targeting soft-bottom fishes exclusively. The Trustees are also gathering chemistry data on fish contamination. Up-to-date fish contamination data provide a means for optimizing the placement of constructed reefs with respect to prevailing contamination. Thus, if the fish caught after reef construction are lower in contamination, then fishing and fish consumption benefits will be realized from these projects.

Steps will be taken to minimize the impacts resulting from the construction of fishing access improvements. These impacts will be addressed at the stage when site-specific plans are being considered.

When initiating a design for site-specific reef development, the MSRP will consider the potential adverse human use impacts identified above by avoiding placement of reef material where it would cause such adverse impacts. Also, fishing reefs will not typically be constructed in areas shallow enough to affect surfing because swells and waves would deter development of the types of fish communities that are the intent of the reefs.

A2. Provide Public Information to Restore Lost Fishing Services

Alternative 2 [✓]

Alternative 3 [✓]

Neither []

Biological Effects

Direct Effects. This action will not have any direct biological effects.

Indirect Effects. Should the public information program lead to changes in fishing practices in the region, it is possible that fishing exploitation of certain contaminated species of fish will decrease and fishing for cleaner species of fish will increase. It is also possible that the public information program could lead to increased fishing exploitation of fish populations in the locations that the program identifies as having fish lower in contamination.

Mitigation Measures. The Trustees will consider both contamination levels and vulnerability to over-fishing as factors when providing fishing advice to anglers. Thus, the program will not advise anglers to target any species that is currently over-fished or at risk of future over-fishing due to population status or specific life-history characteristics that might make that species more vulnerable to over-fishing. The Trustees will work closely with state and federal fisheries managers and provide them opportunities to review materials prior to initiating public information and outreach on fishing to ensure that any MSRP recommendations on specific fishing sites and species do not conflict with pertinent fishing regulations (e.g., catch restrictions).

Physical Effects

This program will not have any direct or indirect effects on the physical environment.

Human Use Effects

Direct Effects. Because this project focuses on providing information that enables fishing rather than restricting fishing, no significant direct effects on human uses are anticipated.

Indirect Effects. Development of better data on fish contamination and improved dissemination of information on fish contamination (including the locations and species of fish that are safer for catching and consuming) should provide recreational benefits for anglers and could potentially lead to increased human uses of ocean fish resources. Minor impacts to aesthetics could occur if informational signs or kiosks are erected, depending on the design, size, and placement of the signs.

Mitigation Measures. The designs for the informational signs will be adopted from the previous designs developed and employed by the State of California and the county health departments in the study area. The signs will be placed in consultation with appropriate local authorities in such a way as to minimize any impacts to the aesthetics of the surrounding area.

A3. Restore Full Tidal Exchange Wetlands

Alternative 2 [✓]

Alternative 3 []

Neither []

This action will require subsequent environmental analysis when the project details are more fully developed.

Biological Effects

Direct and Indirect Effects. The biological consequences of restoration projects for Southern California coastal wetlands are largely beneficial given the historical losses of such habitats, their relative scarcity today, and their valuable ecological functions. Wetlands restoration requires careful planning, analysis, and consideration of the trade-offs between different and sometimes competing biological resources and uses. MSRP funding will be specifically earmarked for actions that benefit wetlands-dependent marine fish species, which might conceivably alter the relative balance of habitat types targeted for restoration within an overall plan. However, this possibility cannot be fully analyzed until site-specific details are developed.

Mitigation Measures. Appropriate mitigation measures will be identified once potential site(s) are identified and project details are more fully developed.

Physical Effects

Direct Effects. Depending on their location and design, wetlands may provide benefits to water quality (USEPA 2001). Restoration of full tidal exchange may also increase contributions of sediment from terrestrial watersheds into coastal areas.

Indirect Effects. Wetlands restoration could have several indirect physical effects, including hydrological consequences, the need to identify disposal requirements for dredged material, and impacts on roads and utilities.

Mitigation Measures. Appropriate mitigation measures will be identified once potential site(s) are identified and project details are more fully developed.

Human Use Effects

Direct and Indirect Effects. Wetlands provide numerous active and passive recreational use values, including birding, boating, fishing, and other uses. Wetlands restoration may also impact current recreational and other human uses of sites slated for restoration. Environmental effects on human uses will need to be analyzed at a later stage, when more site-specific information is available.

Mitigation Measures. None are identified at this time.

A4. Augment Funds for Implementing Marine Protected Areas in California*Alternative 2 [✓]**Alternative 3 []**Neither []*

This action will not establish new Marine Protected Areas (MPAs) or modify the boundaries or human use restrictions of the MPAs already established for the Channel Islands. Rather, this action will enhance implementation of these MPAs so that they will be managed and monitored in ways closer to those originally envisioned. Thus, this analysis evaluates impacts relative to the No Action Alternative (i.e., the current MPA management activities), not the MPA management plan as originally developed.

Biological Effects

Direct Effects. MPAs are established for the purpose of restoring and/or preserving marine biological communities, so increased funding to improve management and monitoring efforts for the Channel Island MPAs will increase the beneficial biological effects for which the MPAs were established.

Indirect Effects. It is possible that the increased public awareness and enforcement of restrictions on the taking of biological organisms from within the boundaries of the Channel Island MPAs that might result from this action could redirect fishing efforts to other marine areas to a greater extent than do the current MPAs. However, the original selection of MPA locations and boundaries was in large part driven by a conscious effort by resource managers to shift such fishing to areas capable of supporting it and away from areas where such practices have led to depletions of critical marine resources. Also, an important component of MPA monitoring is an examination of the degree to which MPAs may result in spillover benefits to fish stocks outside of their boundaries, thus increasing the capacity of surrounding areas to support greater fishing pressure.

Mitigation Measures. Before providing funding to augment implementation of the Channel Islands MPAs, the Trustees will ensure that overall MPA monitoring efforts include adequate provisions for reviewing the effects of the MPAs on surrounding areas.

Physical Effects

This action will have no known direct or indirect effects on the physical environment.

Human Use Effects

Direct and Indirect Effects. Several potential benefits to human uses could result from improved effectiveness of the implementation of the Channel Island MPAs. Restoration of depleted resources within the boundaries of the reserves could provide recreational opportunities outside of the reserve. Although the MPAs generally prohibit the taking of biota within the MPA boundaries, effectively managed MPAs have the potential to lead to spillover of fish to adjacent areas and thus improve fishing use outside their boundaries.

It is possible that augmenting MPA implementation and enforcement (i.e., to levels closer to those originally envisioned) may have increased consequences on some human uses (e.g., fishing within their boundaries) above what might exist in the absence of MSRP support. By their nature, MPAs restrict several types of human uses within their boundaries. This impact was addressed in the environmental documentation that supported the original establishment of the Channel Island MPAs (CDFG 2002). The most seriously debated impact of the Channel Island MPAs related to the question of their contribution to commercial and recreational catches. The opponents of these MPAs suggested that even though MPAs may increase the abundance of fish within their boundaries, they exclude fishermen from productive fishing areas, concentrating them in the less productive areas and resulting in an overall reduction of catch. This concern was addressed during the development of the Channel Island MPAs through extensive collaboration with the fishing community to avoid restrictions to fishing in already established, favored fishing locations. In addition, the Channel Island MPA evaluation plan included extensive socio-economic impact studies designed to address the potential negative impacts of MPAs on human uses (CDFG 2004a).

Mitigation Measures. Before providing funding to augment implementation of the Channel Island MPAs, the Trustees will ensure that the Channel Island MPA Monitoring Plan provisions for socioeconomic impact studies are being implemented as planned.

B. Complete the NCI Bald Eagle Feasibility Study Before Deciding on Further Restoration Actions*Alternative 2* [✓]*Alternative 3* []*Neither* []

This is an interim action that will require subsequent environmental analysis.

Biological Effects

Direct Effects. Individual bald eagles will be impacted by the restoration efforts. Eight of the 34 bald eagles released on Santa Cruz Island as part of the Northern Channel Island (NCI) Bald Eagle Feasibility Study have died from various causes. Overall, the survival rate of eagles released on the Northern Channel Islands appears to be within the normal range of both eagle survival in the wild and a reintroduction program. The loss of several individuals is not considered significant in light of the overall recovery of the bald eagle in the United States and the efforts to restore this species to the Channel Islands.

This course of action proposes to suspend funding of the Santa Catalina Island Bald Eagle Program after 2005 during the interim period until subsequent restoration decisions are made, in or around 2008. One potential outcome of stopping human intervention and allowing bald eagle nests to fail is that eagle pair bonds may break down and the birds may abandon the island. However, it is highly likely that bald eagles will remain on the island for several years despite their inability to hatch offspring naturally. Bald eagles in the wild typically live for 25 to 30 years, and Santa Catalina Island currently supports 15 to 20 birds of a wide range of ages. Currently, five bald eagle nesting territories are active on the island, and the Institute for Wildlife Studies reports that two birds are currently establishing a new territory near Avalon. Even assuming that the Santa Catalina Island bald eagles fail to hatch new chicks in the coming years, bald eagle experts do not expect that they will immediately break their pair bonds and abandon their Santa Catalina Island territories. Rather, it is likely that bald eagles will remain on the island, with their numbers diminishing gradually over a period of 10 years or longer as some of the birds die and are not replaced by others and as certain bald eagle pairs break their pair bonds and leave the island after several years of failing to produce chicks.

Indirect Effects. Bald eagles historically played an important role in the ecology of the Channel Islands by serving as both a top carnivore and a scavenger. Bald eagles prey primarily on fish taken live from the ocean; however, they also feed on seabirds and the carcasses of animals that wash up on shore. Restoration of bald eagles to the Channel Islands provides broad benefits to the island ecosystems.

The presence of bald eagles in the Northern Channel Islands may provide benefits to the endangered island foxes on San Miguel, Santa Rosa, and Santa Cruz Islands. Predation by golden eagles on island foxes has resulted in precipitous declines in island fox populations on these islands (Coonan et al. 1998, USFWS 2004). The presence of territorial bald eagles on the Northern Channel Islands will complement other efforts in the recovery of the island fox if they deter golden eagles from inhabiting the islands.

As explained above, suspension of funding for the Santa Catalina Island Bald Eagle Program until the completion of the NCI Bald Eagle Feasibility Study is highly unlikely to result in the disappearance of bald eagles from Santa Catalina Island. Nevertheless, the Trustees have analyzed the potential indirect effects of a disappearance of bald eagles from Santa Catalina

Island and have concluded that such a disappearance is not likely to adversely affect the endangered island fox.

Unlike the Northern Channel Islands, island fox numbers diminished on Santa Catalina Island as a result of canine distemper rather than predation by golden eagles. An absence of bald eagles on Santa Catalina Island is unlikely to result in the future establishment of golden eagles on the island, as the island likely does not have a sufficient terrestrial vertebrate prey base to attract and sustain golden eagles. Also, unlike on the Northern Channel Islands, there is no nearby mainland source for golden eagles. Given the ongoing efforts to remove golden eagles and eradicate their non-native prey base from the Northern Channel Islands, it is unlikely that these islands would serve as a source of golden eagles to Santa Catalina Island.

The Trustees have informally consulted with the endangered species office of the U.S. Fish and Wildlife Service (USFWS) on this issue, and this office has concurred with this analysis. The Letter of Concurrence is available as part of the MSRP Administrative Record.

The restoration of bald eagles on the Northern Channel Islands is not expected to result in significant impacts to seabird populations. Seabirds are not a principal component of bald eagle diets on Santa Catalina Island, and the same situation is expected to apply on the Northern Channel Islands. This potential impact was discussed in detail in the Feasibility Study for Reestablishment of Bald Eagles on the Northern Channel Islands (MSRP 2002).

Mitigation Measures. The methods for hacking and monitoring bald eagles are well established and designed such that potential impacts to birds are minimized. Measures such as supplementing prey for the juvenile eagles once they are released are part of the NCI Bald Eagle Feasibility Study and will be incorporated into future restoration efforts.

Physical Effects

This action would have no known direct or indirect effects on the physical environment.

Human Use Effects

Direct and Indirect Effects. The presence of the bald eagle on the Channel Islands provides benefits to humans on many levels. The presence of bald eagles provides both aesthetic and recreational benefits to visitors. Also, the bald eagles inhabiting the Channel Islands, which are readily identified by their tags, range freely over great distances and have been sighted on the U.S. mainland, notably along the Southern California coast.

The bald eagle also plays an important role in the cultural history of the Channel Islands. The presence of bald eagles on the island therefore fills an important cultural as well as an ecological niche.

The suspension of funding for the Santa Catalina Island Bald Eagle Program may lead to a diminishing number of bald eagles on Santa Catalina Island during the applicable time period. Fewer bald eagles could result in a reduction in the human use benefits they provide, as there may be fewer occasions for viewing the eagles.

Mitigation Measures. The Trustees' placement of approximately 12 young birds per year on Santa Cruz Island since 2002 may offset the potential reduction in opportunities for viewing bald eagles should their numbers diminish on Santa Catalina Island during the intervening years before a decision is reached on further bald eagle restoration.

B. Complete the NCI Bald Eagle Feasibility Study; Regardless of its Outcome, Continue Funding Santa Catalina Island Bald Eagle Program

Alternative 2 []

Alternative 3 [✓]

Neither []

Biological Effects

Direct Effects. This course of action will seek to continue maintaining bald eagles on Santa Catalina Island through human intervention (e.g., egg manipulation, incubation, and chick fostering) for as long as funds remain available. Historically, the Channel Islands were a stronghold for this species. Should it ultimately be found that bald eagles are unable to reproduce on their own on other Channel Islands, maintaining a bald eagle presence on Santa Catalina Island will at least represent a partial or temporary restoration of this important resource.

Individual bald eagles will continue to experience reproductive injuries if intervention efforts continue to maintain them on Santa Catalina Island. These birds are exposed to sufficiently high levels of DDTs and PCBs that they experience reproductive failure. Also, at least one bald eagle death on Santa Catalina Island has been attributed to DDT poisoning. However, the loss of several individuals is not considered significant in light of the overall recovery of the bald eagle in the United States and the efforts to restore this species to the Channel Islands.

Indirect Effects. Bald eagles historically played an integral role in the ecology of the Channel Islands by serving as both a carnivore and a scavenger. Bald eagles prey primarily on fish taken live from the ocean; however, they also feed on seabirds and the carcasses of animals that wash up on shore. Thus, the restoration of bald eagles to the Channel Islands will provide benefits to the island ecosystem.

The continued presence of bald eagles on Santa Catalina Island is not expected to result in significant impacts to seabird populations. Seabirds are not a principal component of the diets of the bald eagles on Santa Catalina Island.

Mitigation Measures. Humans have actively maintained bald eagles on Santa Catalina Island for over 15 years. Therefore, the methods for manipulating nests and monitoring bald eagles on Santa Catalina Island are well established and have been designed such that potential impacts to birds are minimized. Monitoring would continue to be performed to examine trends in contamination levels and to guide the ongoing restoration efforts.

Physical Effects

This action would have no known direct or indirect effects on the physical environment.

Human Use Effects

Direct and Indirect Effects. The presence of the bald eagle on Santa Catalina Island provides important benefits to humans on many levels. Santa Catalina Island is a popular tourist destination, and the presence of bald eagles provides both aesthetic and recreational benefits to visitors on the island. Also, the bald eagles inhabiting the Channel Islands, which are readily identified by their tags, range freely over great distances and have been sighted on the U.S. mainland, notably along the Southern California coast.

The bald eagle also plays an important role in the cultural history of the Channel Islands. The presence of bald eagles on the island therefore fills an important cultural as well as an ecological niche.

C1. Restore Peregrine Falcons to the Channel Islands

Alternative 2 []

Alternative 3 []

Neither [✓]

This potential action will require subsequent environmental analysis when the project details are more fully developed.

Biological Effects

Direct Effects. The active restoration of peregrine falcons would speed the recovery of this species into its historically occupied habitat on both the Channel Islands and the U.S. mainland. Based on the results of earlier release programs, this effort would likely result in the establishment of additional peregrine falcon territories on the Channel Islands (Walton 1997). This program would result in an influx of birds around the Southern Channel Islands, thus encouraging recolonization on these islands. Although peregrine falcons are recolonizing the Southern Channel Islands, as demonstrated by the recent breeding on Santa Barbara and Santa Catalina Islands, recolonization has not yet occurred on San Clemente and San Nicolas Islands. In addition, peregrine falcons that fledge from the Channel Islands frequently disperse to the mainland (Walton 1999). Therefore, unoccupied territories on the mainland are also likely to benefit from a release program.

Indirect Effects. Raptors, such as the peregrine falcon, are an essential part of healthy, functioning ecosystems. The peregrine falcon is an apex predator that fills a particular ecological niche in the Channel Islands ecosystem. Although peregrine falcons are once again a top predator on the majority of the Channel Islands, complete recovery has not yet been achieved. Additional active restoration would further encourage recovery on the Channel Islands and help to fully restore a missing component of the island ecosystem.

The peregrine falcon is a highly specialized feeder, concentrating almost entirely on birds. The recovery of the peregrine falcon on the Channel Islands may have a negative impact on bird populations, particularly for those species that are in decline or have limited populations. The Channel Islands are critical breeding areas for seabirds and support important colonies of special status or declining species, such as the state-threatened Xantus's murrelet, rare ashy storm-petrel, and federally threatened western snowy plover. Peregrine falcons are known predators of the Xantus's murrelet and western snowy plover (Hunt 1994, USFWS 2001). Peregrine falcons have also been documented preying on petrels (Walton 1997, White et al. 2002); therefore, ashy storm-petrels could be impacted as well. Because many seabirds are under constant threat (e.g., from oil spills, human disturbance, and El Niño events), they may not be able to withstand peregrine falcon predation (Paine et al. 1990). In particular, depressed populations of seabirds may not be able to effectively absorb the additional predation pressure from increased numbers of peregrine falcons on these islands.

Recolonization of peregrine falcons to the Southern Channel Islands may also impact the federally endangered San Clemente loggerhead shrike (*Lanius ludovicianus mearnsi*). This bird subspecies is endemic to the U.S. Navy-owned San Clemente Island, and the U.S. Fish and Wildlife Service listed it as endangered in 1977 due to its localized range, critically low population numbers, consistently low productivity, and intense predation pressure. Significant effort has been made to decrease the threat of extinction to the wild population. Although this population has been increasing recently, the subspecies remains highly endangered and vulnerable to predation pressure.

Peregrine falcons do not prey on California brown pelicans (Walton 1997); therefore, release of additional birds is not expected to adversely impact this species.

Mitigation Measures. The methods for hacking and monitoring peregrine falcons are well established and designed such that potential impacts to the birds are minimized. Seabird populations would continue to be monitored to determine whether they are being significantly impacted by increased predation pressure from the restoration of peregrine falcons to the Channel Islands.

Physical Effects

This action would have no known direct or indirect effects to the physical environment.

Human Use Effects

Direct and Indirect Effects. The recovery of the peregrine falcon to the Channel Islands provides both aesthetic and recreational benefits to visitors to the islands. Peregrine falcons are known for their spectacular flights, with an average speed of 40–55 kilometers/hour (25–34 miles/hour) and speeds reaching 112 kilometers/hour (70 miles/hour) (Cade 1982).

C2. Monitor the Recovery of Peregrine Falcons on the Channel Islands

Alternative 2 [✓]

Alternative 3 [✓]

Neither []

Biological Effects

Direct Effects. Due to the lack of focused surveys for peregrine falcons on the Channel Islands, important information regarding this species is unknown. A monitoring program would provide information on territory occupancy, nest success, and productivity. These measures are all indicators of population health and are important in understanding the long-term recovery of this species on the Channel Islands. The monitoring data would inform natural resource managers of potential threats to peregrine falcon recovery, thereby enabling improved management of this species on the Channel Islands.

A monitoring program would not result in significant impacts to the biological environment. Peregrine falcon pairs may be temporarily disturbed during certain monitoring activities (e.g., entering the nest to collect eggshell fragments or band young); however, the majority of the observations would be from a distance and would not disturb peregrine falcons. The monitoring plan would also consider the presence of seabird nesting colonies and avoid and minimize any impacts to nesting areas during the monitoring efforts.

Indirect Effects. As top predators of their food chain, peregrine falcons are an excellent indicator species of the overall health of the ecosystem in which they live. The monitoring of this species would provide valuable information on the overall levels of contamination in the environment.

Mitigation Measures. Impacts from monitoring activities would be minimized through established survey techniques for peregrine falcons and avoidance of biologically sensitive areas, such as seabird colonies.

Physical Effects

This action would have no known direct or indirect effects on the physical environment.

Human Use Effects

This action would have no known direct or indirect effects on human uses.

C3. Restore Peregrine Falcons to the Baja California Pacific Islands

Alternative 2 []

Alternative 3 []

Neither [✓]

Biological Effects

Direct Effects. Actions taken to reduce human disturbance would likely result in recolonization of unoccupied habitat and increased reproductive success. The recolonization of peregrine falcons into historically occupied habitat on these islands would provide direct long-term benefits to this species, as peregrine falcon territories generally remain occupied indefinitely, with new adults recruiting from the floating population over time.

The presence of the peregrine falcon may have a negative impact on bird populations, particularly on those species that are in decline or have limited populations. The Baja California Pacific islands are critical breeding areas for seabirds and support important colonies of special status or declining species, such as the state-threatened Xantus's murrelet and the rare ashy storm-petrel. Because many seabirds are under constant threat (e.g., from oil spills, human disturbance, and El Niño events), they may not be able to withstand peregrine falcon predation (Paine et al. 1990). In particular, depressed populations of seabirds may not be able to effectively absorb the additional predation pressure from increased numbers of peregrine falcons on these islands.

Peregrine falcons do not prey on California brown pelicans; therefore, an increase in the number of peregrine falcon pairs is not expected to adversely impact California brown pelicans.

Indirect Effects. Raptors, such as the peregrine falcon, are an essential part of healthy, functioning ecosystems. The peregrine falcon is an apex predator that fills a particular ecological niche on island ecosystems. Significant efforts are under way to restore the ecosystems of the Baja California Pacific islands, such as the removal of non-native species and habitat restoration. Recovery of this species on the Baja California Pacific islands would complement ongoing efforts to restore the island ecosystems of the region.

In addition, peregrine falcons typically disperse 16 to 241 kilometers (10 to 150 miles) to adjacent unoccupied territories. An increase in the number of peregrine falcons on the Baja California Pacific islands may lead to further recovery of peregrine falcons on the Channel Islands due to their proximity.

Mitigation Measures. Impacts from monitoring activities would be minimized through established survey techniques for peregrine falcons and avoidance of biologically sensitive areas, such as seabird colonies.

Physical Effects

This action would have no known direct or indirect effects on the physical environment.

Human Use Effects

Direct and Indirect Effects. The recovery of the peregrine falcon to the Baja California Pacific islands would provide both aesthetic and recreational benefits to visitors and residents of the islands.

This project proposes to limit human disturbance in the vicinity of peregrine falcon nesting areas. This action may impact residents on the islands during the breeding season for this species. However, this impact is not anticipated to be significant due to the minimal number of people that inhabit the islands.

Mitigation Measures. No mitigation is currently proposed.

D1. Restore Seabirds to San Miguel Island

Alternative 2 [✓]

Alternative 3 []

Neither []

This action will require subsequent environmental analysis when the project details are more fully developed.

Biological Effects

Direct and Indirect Effects. The eradication of rats on San Miguel Island has a wide range of potential direct and indirect beneficial and adverse biological impacts; these impacts are more extensively described in Appendix D1. The potential benefits of rat eradication on San Miguel Island include (1) increases in small crevice-nesting seabird populations (such as alcids and storm-petrels), (2) decreased predation on ground-nesting seabirds, such as western gulls, (3) protection of the important seabird colonies on Prince Island and Castle Rock from rat invasion, (4) a decrease in predation of some terrestrial and marine intertidal invertebrates, and (5) broad ecological benefits to the San Miguel Island ecosystem.

However, to eliminate rats from San Miguel 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 primary and secondary risk of poisoning to non-target species on San Miguel Island. Of particular concern are the potential impacts to non-target species, such as the endemic deer mouse and the endangered island fox. Studies will be initiated to evaluate the potential risk of poisoning to non-target species and to develop appropriate mitigation measures.

Mitigation Measures. The removal of the rats will be timed according to a set of biological conditions that maximize the probability of eradicating rats and minimize the potential impact to the San Miguel Island environment. This project will be designed and implemented in a manner that avoids, minimizes, and mitigates impacts to the natural environment on San Miguel Island. Comprehensive measures to avoid and mitigate any impacts from the project will be developed during the planning phase and addressed in subsequent environmental analysis. Particular emphasis will be given to the development of a comprehensive mitigation strategy for the island fox and deer mouse. The successful mitigation program used during rat removal on Anacapa Island will be considered during the development of a mitigation program for San Miguel Island. Potential mitigation measures are outlined in Appendix D1.

This project will proceed only if the risks to non-target species, in particular the endangered island fox and endemic deer mouse, can be minimized to an acceptable level.

Physical Effects

Direct and Indirect Effects. Generally, this action will have no known direct or indirect effects on the physical environment. Unintended temporary water quality impacts could result should some of the bait enter the marine environment.

Mitigation Measures. Specific measures will be developed and implemented to prevent bait from entering the marine environment or to minimize and carefully monitor the amount entering the marine environment.

Human Use Effects

Direct and Indirect Effects. 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 benefit visitors and National Park Service (NPS) personnel on San Miguel Island. Although no known rodent-vector diseases have been transmitted to island staff or residents in the recent past, any rodent population has the potential to transmit disease to humans. This action will improve health and safety standards at NPS facilities on the island and will eliminate a potential source of disease. The removal of black rats from San Miguel Island is expected to have long-term health, safety, aesthetic, and recreational benefits and will remove a destructive nuisance to human habitation and use of the island. However, the removal of rats from the island may reduce the human use and non-use benefits to any members of the public who value the presence of this species on the island.

With the possible exception that project workers might experience skin irritation as a result of contact with bait, no negative impacts are expected on humans. Although rodenticides are toxic to humans, significant health effects are not expected unless standard safety precautions are ignored and very large doses are consumed.

Mitigation Measures. To minimize the potential exposure of visitors, San Miguel Island will be closed for several days when the rodenticides are applied. Recreational activities such as camping and hiking will not be permitted during this time. However, due to the distance of San Miguel Island from the U.S. mainland and the annual visitation rate of less than 200 campers each year, the closure of the island will not have a significant impact on recreational and visitor activities.

Project workers will be educated to follow proper safety procedures and avoid contact with the bait. Monitoring will be used to ensure that the project workers follow the safety procedures.

D2. Restore Alcids to Santa Barbara Island

Alternative 2 [✓]

Alternative 3 [✓]

Neither []

Biological Effects

Direct Effects. Restoring native vegetation and placing nest boxes in appropriate locations on Santa Barbara Island will provide a favorable environment for both Cassin's auklets and Xantus's murrelets. In Northern California, nest boxes have enhanced the population growth rate of several cavity-nesting alcid species at various sites by increasing recruitment of breeding-age birds, improving productivity, and decreasing mortality (Sydeman et al. 2000). The use of playback systems will further facilitate the recolonization of the Cassin's auklet on the island. These techniques should increase the number of breeding pairs of Cassin's auklets and Xantus's murrelets on the island, thereby increasing the number of offspring produced successfully.

This project is expected to have minimal short-term adverse biological impacts. Additional human activity will occur on Santa Barbara Island as a result of this project that could result in temporary displacement of native wildlife or the trampling of native plants.

Indirect Effects. The removal of exotic vegetation may include the use of herbicides, which could have short-term adverse impacts on non-target plants. Subsequent monitoring may temporarily disturb target species.

Mitigation Measures. The removal of exotic vegetation and the planting of native plants will be done during the non-breeding season to avoid impacts to nesting birds. Any herbicides will be applied in a way that avoids or minimizes adverse impacts and is in compliance with NPS policies and other applicable laws and regulations. Potential short-term adverse environmental impacts that might occur during the removal of exotic vegetation will be addressed as part of the environmental compliance for this project.

The use of nest boxes will minimize adverse impacts to nesting alcids due to any disturbance during monitoring.

Physical Effects

There may be minimal short-term adverse impacts due to trampling and increased soil erosion.

Human Use Effects

This action will have no known impacts to human uses. Cultural resources will be avoided on the island during project implementation. It is expected that the nest boxes will be largely screened by vegetation and will not be visible to the public.

D3. Restore Seabirds to San Nicolas Island

Alternative 2 [✓]

Alternative 3 []

Neither []

This potential action will require subsequent environmental analysis when the project details are more fully developed.

Biological Effects

Direct Effects. This action will result in the eradication of feral cats from San Nicolas Island. Eradication of these introduced cats will provide long-term conservation benefits for Brandt's cormorants and western gulls by removing a non-native predator from the island ecosystem. The Trustees anticipate that this project will result in increased reproductive success for these species and therefore an expansion of these colonies. Both of these species are endemic to the west coast of North America and have limited ranges. The colonies on San Nicolas Island are located within the center of their range and have historically supported large numbers of birds. This project will contribute to the protection of these colonies, though they will still be subject to predation by the native island fox. However, it is anticipated that larger, more robust colonies will more effectively resist ongoing predation pressure from the island fox.

This action could potentially affect the island fox due to its similarity in size to a feral cat and their similar diets. Although some short-term impacts might occur to individual foxes, the fox population will likely benefit overall from the eradication of feral cats, as they are competitors for food resources and habitat. The eradication methodologies and potential impacts will be addressed fully in subsequent environmental documentation for the project.

Indirect Effects. In addition to benefiting seabirds, this project will also have collateral benefits to the island ecosystem. Sensitive species such as the island fox, the endemic deer mouse, the threatened island night lizard, and the threatened snowy plover will likely benefit from reduced

predation and competition. The removal of feral cats will also likely benefit both resident and migratory landbirds on San Nicolas Island. The U.S. Navy has identified the control/eradication of cats as a recommended management action to protect the island's biological resources.

Mitigation Measures. Before initiating this action, techniques that will vary according to the eradication methodologies selected will be investigated and employed in a manner that avoids and minimizes the potential for impacts to the non-target island fox.

Physical Effects

This action will have no known direct or indirect effects to the physical environment.

Human Use Effects

Direct Effects. The removal of non-native species is a critical step in the restoration of island ecosystems. The eradication of feral cats will help restore populations of native species on San Nicolas Island. Such restoration will provide aesthetic and recreational benefits to U.S. Navy personnel. Because the island has restricted access, this project will not likely provide aesthetic or recreational benefits to the general public.

During the eradication program, certain areas may be closed or their use restricted for safety reasons. Such restrictions may limit recreational opportunities for U.S. Navy personnel. However, feral cat control was initiated in the 1980s, and U.S. Navy personnel have accommodated to this activity. Although the action is designed to be an intensive effort over approximately 3 years, it will be compatible with the military use of the island.

Indirect Effects. This action will have no known indirect effects.

Mitigation Measures. Feral cat eradication efforts will be closely coordinated with the U.S. Navy, and the project will be developed in a manner that minimizes impacts on military and recreational activities on the island.

D4. Restore Seabirds to Scorpion and Orizaba Rocks

Alternative 2 [✓]

Alternative 3 [✓]

Neither []

Biological Effects

Direct Effects. Elimination of invasive plants and restoration of native plants will benefit burrow-nesting species by providing increased nesting habitat and stabilization of the rapidly eroding soil horizon on Scorpion Rock. By providing additional high-quality breeding habitat, this action seeks to increase the number of breeding seabirds on the rock, in particular Cassin's auklets, Xantus's murrelets, and ashy storm-petrels. The use of nest boxes will enhance suitable habitat for seabirds on both Scorpion and Orizaba Rocks, thereby increasing the number of offspring produced and decreasing mortality.

Seabirds such as the California brown pelican are particularly sensitive to human disturbance. Reducing human disturbance will have a positive influence on the survival of brown pelicans by reducing the energy expenditure associated with flushing and relocating due to human disturbance. In addition, reducing disturbance will protect nesting auklets and murrelets from harassment by trespassers.

This project is expected to have minimal short-term adverse effects. Some temporary disturbance to roosting seabirds may occur during the revegetation effort. Exotic vegetation will be removed

using mechanical methods, thereby eliminating the need for herbicides. Mechanical removal may result in minimal short-term adverse impacts to surrounding native vegetation and soil.

Indirect Effects. Subsequent monitoring may result in temporary disturbance to seabirds.

Mitigation Measures. The removal of exotic vegetation and the planting of native plants will be done during the non-breeding season to avoid impacts to nesting birds. The National Park Service will consult with the U.S. Fish and Wildlife Service regarding project implementation to ensure that California brown pelicans will not be adversely affected. The use of matting will help minimize potential erosion and stabilize the soil. The use of nest boxes will greatly minimize impacts to nesting alcids.

Physical Effects

Mechanical removal of invasive plants may result in minimal short-term adverse impacts to surrounding soil.

Human Use Effects

This action will have no known effects on cultural resources, recreation, aesthetics, or transportation. Cultural resources will be avoided on the island during project implementation.

D5. Restore Seabirds to Baja California Pacific Islands

Alternative 2 [✓]

Alternative 3 [✓]

Neither []

Multiple seabird restoration projects are under consideration for the Baja California Pacific islands. Recent efforts to remove introduced species on many of these islands have resulted in opportunities to restore seabird populations. In general, restoration actions will include using social attraction techniques (including decoys and vocalizations), improving nesting opportunities with artificial nests, restoring habitat, reducing human disturbance, shielding lights, and eradicating non-native species. The effects of individual projects are described in Appendix D5 and are summarized collectively below.

Biological Effects

Direct Effects. The restoration activities proposed for the Baja California Pacific islands will result in direct benefits to a suite of seabirds, including the Cassin's auklet, Brandt's cormorant, double-crested cormorant, California brown pelican, ash storm-petrel, and Xantus's murrelet.

Social attraction efforts will facilitate the recolonization of seabirds on these islands after the removal of introduced species. These types of efforts will encourage seabirds to use suitable and historically occupied habitats. Once attracted to the island, seabirds will be further encouraged to nest in suitable habitat by the presence of nest boxes. The use of nest boxes will also allow biologists to monitor the success of the restoration efforts and minimize disturbance to nesting seabirds. Although social attraction may only be used for a limited time, the recolonization and recovery of historically occupied colonies will provide long-term benefits to seabird populations in the Southern California Bight, as the re-established presence of a colony of birds will likely serve as an ongoing natural attractant in perpetuity.

A reduction in human disturbance around the colonies will significantly benefit roosting and breeding seabirds. Nesting seabirds that are sensitive to disturbance, such as California brown pelicans and cormorants, will in particular benefit from a reduction in human disturbance. At

least six species of marine birds had experienced severe population declines due to human disturbance, and subsequent protection has resulted in almost complete recovery of all of these populations (Anderson and Keith 1980).

The proposed activities have the potential to result in limited short-term impacts, including soil disturbance in the areas where nest boxes are used or short-term disturbance to seabirds during monitoring efforts. However, the proposed activities will not result in significant impacts to biological resources.

Indirect Effects. The increase in seabird populations that could result from this action will also likely benefit resident peregrine falcon pairs that prey on seabirds such as petrels and auklets. Because peregrine falcon pairs prey on a number of seabirds (Kiff 1980), increases in seabird populations may help buffer the impacts of increased predation by peregrine falcons.

Mitigation Measures. The removal of exotic vegetation and the planting of native plants will be done during the non-breeding season to avoid impacts to nesting birds. The use of matting will help minimize potential erosion and stabilize the soil. The use of nest boxes will minimize the impacts of monitoring activities on breeding seabirds.

Physical Effects

This action will have no direct or indirect effects on the physical environment.

Human Use Effects

Direct and Indirect Effects. The waters around the Baja California Pacific islands offer many recreational and economic opportunities. Healthy and complete ecosystems support fishing communities around these islands (Anderson and Keith 1980). Seabird colonies are a valuable part of island ecosystems and provide economic benefits in the form of tourism.

This action proposes to limit human disturbance in the vicinity of seabird colonies. This action will likely impact people that either inhabit or illegally camp on the islands. However, this impact is not anticipated to be significant due to the small number of people that inhabit the islands.

Mitigation Measures. When this action involves limiting human activity around seabird colonies, alternate routes will be provided to accommodate human activities on the islands.

D6. Create/Enhance/Protect California Brown Pelican Roost Habitat

Alternative 2 [] *Alternative 3* [] *Neither* []

This action will require subsequent environmental analysis when the project details are more fully developed.

Biological Effects

Direct Effects. Improvements in the existing network of communal roosts along the coast would have a positive influence on the energy budgets of pelicans by reducing the energy costs associated with (1) commuting between prey locations and roosts, (2) flushing and relocating due to human disturbance, and (3) using suboptimal microclimates within roosts. The costs of migration would also be reduced by the increased availability, quality, and capacity of stopover sites. Cumulative energy reductions should result in improved body condition for individual birds. The expected population-level effects from improving the condition of individual birds are

increased juvenile and adult survival and increased reproductive success for pelicans in California.

The environmental consequences of increased use of lagoons and other roosting areas by pelicans may include impacts on water quality if guano accumulation exceeds the circulation ability of the lagoon. However, in some locations brown pelican guano in the vicinity of roosts could provide a desirable source of nutrient enrichment and might enhance local food webs.

The 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 or puncture from fishing hooks), and the development of nuisance issues. However, the project is not expected to result in major increases in pelican use of harbors. Rather, the goal would be to improve the quality of resting time within harbors.

Indirect Effects. Other bird species that occur in association with roosting pelicans are likely to benefit from the proposed roost projects. Bird groups that would benefit from increased availability of island habitat and reduced human disturbance in coastal environments would include gulls, terns, cormorants, shorebirds, herons, egrets, and ducks. The suite of species receiving benefits would vary with the type of roost treatment and project site. The restoration projects would inform and enrich the public through associated interpretation displays and would help foster an awareness and stewardship ethic that should result in reduced disturbance to roosting California brown pelicans and other coastal waterbirds at other locations.

Mitigation Measures. Specific mitigation measures would be developed and incorporated into project design as specific sites are selected and potential impacts are identified.

Physical Effects

Given the relatively small scale of physical construction envisioned under this conceptual action, and given that pelican roost site enhancements would be constructed on existing physical features or structures, no direct or indirect physical effects are anticipated. Further environmental analysis would be required should this action be selected for implementation.

Human Use Effects

Direct Effects. Public enjoyment of pelicans would be increased by projects that allow the public to view communal roosting groups without causing disturbance.

Pelican roost site creation projects, if not carefully designed, could lead to interference with human activities or potential liability situations. Some projects would likely require ongoing inspection and/or management oversight. This issue would be addressed in subsequent planning and environmental documentation.

Indirect Effects. Vegetation on any earthen islands that are created may need to be periodically controlled or removed.

Mitigation Measures. Pelican restoration projects would be designed to minimize impacts to recreational activities such as fishing, boating, and kayaking. Because pelicans are very susceptible to human disturbance, projects would be sited in areas that are compatible with human uses. Potential impacts to navigation would be evaluated for each site-specific project. Careful site selection, project design, selection of raw materials, and adequately funded maintenance programs would offset potential liability concerns.

*D7. Implement an Entanglement Reduction and Outreach Program to Protect Seabird Populations*Alternative 2 []Alternative 3 []Neither []**Biological Effects**

Direct Effects. The use of signs and brochures would help promote public awareness of entanglement issues and thus reduce bird injuries and deaths. Seabirds that would benefit from this project include California brown pelicans, cormorants, and gulls. A successful outreach program would aid in the ongoing recovery of the endangered California brown pelican by reducing a source of injury and death to the species.

Indirect Effects. This program would provide information on the proper disposal of fishing line. A reduction in fishing line debris would provide benefits to other marine organisms currently impacted by waste fishing line.

Mitigation Measures. This action is not anticipated to have any adverse effects.

Physical Effects

A reduction in fishing line debris would improve the general quality of the marine environment.

Human Use Effects

Direct Effects. The proper handling and disposal of fishing line would result in improved health and safety, as discarded hooks can injure humans as well as wildlife. Humans are also at risk of injury when attempting to disentangle a hook or line from a seabird. A reduction in seabird/angler interactions would result in improved recreation because hooking a seabird is a frustrating and unwelcome experience. The proper disposal of fishing line would also enhance the aesthetics of the fishing structure and its vicinity.

This action focuses on education rather than restrictions on fishing, so no negative impacts on human uses would result.

Indirect Effects. The design, size, and placement of program signs could have minor impacts to aesthetics.

Mitigation Measures. The design of program signs would likely be adopted from the design developed and employed by a recent restoration effort performed by the American Trader Trustee Council. The signs would be placed in consultation with appropriate local authorities in such a way as to minimize any impacts to the aesthetics of the surrounding area.

*D8. Restore Ashy Storm-Petrels to Anacapa Island*Alternative 2 []Alternative 3 []Neither []**Biological Effects**

Direct Effects. The Channel Islands are critical nesting habitat for the ashy storm-petrel. With the recent removal of rats from Anacapa Island, high-quality breeding habitat is again available to crevice-nesting seabirds such as the ashy storm-petrel. The combination of social attraction and nest boxes will provide a favorable environment for the establishment of an ashy storm-petrel colony. Although social attraction may only be used for a short amount of time, the colonization of Anacapa Island will provide long-term benefits to the ashy storm-petrel in the

Southern California Bight, as the established presence of a colony of birds will likely serve as an ongoing natural attractant over the long term.

This project seeks to aid in the recovery of this rare and declining species. Given the limited range and overall small population size of the ashy storm-petrel, the establishment of additional secure breeding sites will be a significant benefit. Additional breeding sites buffer the potential catastrophic effects of oil spills and the negative impacts of non-native species on this species.

This action will have minimal short-term adverse biological impacts. The playback of tape-recorded vocalizations causes little disturbance or trauma to birds if the duration of the playback is kept within reasonable bounds.

Indirect Effects. Human activity in the vicinity of the target locations may disturb other species of seabirds that may be nesting nearby.

Mitigation Measures. Researcher activity in the vicinity of nesting areas will be minimized to avoid destruction of the local habitat and disturbance (Johnson et al. 1981, Baptista and Gaunt 1997). Storm-petrels are sensitive to disturbance, including that generated by researchers, especially during the incubation period (Ainley et al. 1974). The project will be implemented in a manner that avoids impacts to nesting seabirds on Anacapa Island.

Physical Effects

This action will have no known direct or indirect effects on the physical environment.

Human Use Effects

A slight increase in human uses on Anacapa Island will occur during the implementation of the action, and this use may impact visitors' experience on the island. However, this use is expected to have minimal short-term adverse impacts.

7.3 CUMULATIVE IMPACTS

Cumulative impacts are impacts that result from an action and other past, present, and reasonably foreseeable near-term future actions taken together. Significant cumulative impacts can result from a combination of actions that do not have significant impacts individually. Taken collectively, the effects of several actions may be additive, countervailing, or synergistic. Impacts are considered regardless of the agencies or parties involved. Thus, in considering cumulative impacts, this analysis is not limited to the actions of the MSRP but also considers current operations, resource management programs, land use plans, and development projects in the region of interest.

Overall, the Montrose Settlements Restoration Program actions will result in a long-term net improvement in fish and wildlife habitat, the restoration of ecological balance in areas where contamination and other human-caused disturbances have led to adverse impacts on sensitive native species, and improvement in the human use and non-use services provided by fish and wildlife in the region. Cumulative impact analysis is nonetheless required to evaluate whether specific components of the MSRP actions, when considered in combination with other past, present, and future actions in the affected area, will have potentially significant adverse effects.

The cumulative effects analysis in this Restoration Plan and programmatic EIS/EIR focuses on the same environmental issues as those in the direct/indirect effects analyses in Section 7.2:

- Biological resources (fish, birds, and other wildlife)
- Physical resources (earth resources, including sediments, water resources, and oceanographic and coastal processes)
- Human uses (recreational, socioeconomic, and aesthetics)

The MSRP study area (see Figure 3.0-1) is located within the Southern California Bight (SCB), extending from Point Dume to Dana Point along the Southern California mainland coast. The study area includes the California Channel Islands and those Baja California Pacific Islands that lie within the SCB. Other actions considered as part of the cumulative impacts analysis for this programmatic EIS/EIR were identified by researching the activities within this study area that are affecting or will affect the same or similar resources. These other actions were identified through consultations within each of the six agencies that constitute the Trustees, consultations with the planning departments of local governments and authorities and other state and federal agencies, and searches of the database of the State of California Office of Planning and Research.

Several of the actions in this programmatic EIS/EIR are still only conceptual and will require subsequent environmental analysis. Some actions do not have specific project locations identified yet. The assessment of cumulative impacts herein focuses on those MSRP actions, locations, and resources for which sufficient detail is currently available. To the extent it is included, the cumulative effects analysis for the actions that are still conceptual is not as detailed. More specific analysis of these actions will be performed in subsequent environmental analyses. When there is uncertainty about cumulative impacts, the Council on Environmental Quality recommends that the uncertainty be addressed through subsequent project monitoring and adaptive management (Council on Environmental Quality 1997).

The study area encompasses a large geographic region in which many types of other actions affect the environment. In keeping with Council on Environmental Quality recommendations, the Trustees have narrowed the focus of the cumulative effects analysis to those actions that have relevance to the effects of the MSRP actions and to important issues of national, regional, or local interest (Council on Environmental Quality 1997).

The following discussion identifies the plans or categories of actions that may affect the same or similar resources as the MSRP actions. The MSRP actions and the affected resources that are relevant to each of these other actions are also listed. These other actions are considered in the cumulative impacts analysis that follows.

- **Channel Islands National Park 2001–2005 Strategic Plan:** This plan addresses the management of natural resources and research and the recreational uses of these resources for the Channel Islands National Park. The plan also develops long-term policy recommendations to enhance the management of the areas in the Channel Islands under the park's jurisdiction. Cumulative additive beneficial effects are expected from the combination of NPS management activities and MSRP actions.

MSRP actions affecting the same or similar resources: the bald eagle, peregrine falcon, and seabird restoration actions on the Channel Islands will occur within the park's boundaries.

- **Channel Islands National Marine Sanctuary 1983 Management Plan:** This plan addresses the management of marine resources under the sanctuary's jurisdiction. The

management plan has been under review since 1999, and a revision is currently being prepared; it is anticipated that the draft revised management plan will be released for public review and comment during 2005. Expansion of the boundaries of the Channel Islands National Marine Sanctuary is under consideration as part of the draft revised plan. Cumulative additive beneficial effects are expected from the combination of Channel Islands National Marine Sanctuary management activities and MSRP actions.

MSRP actions affecting the same or similar resources: “augment funds for implementing Marine Protected Areas in California,” and bald eagle, peregrine falcon, and seabird restoration projects on the Channel Islands within the boundaries of the Channel Islands National Marine Sanctuary.

- **Southern California Wetlands Recovery Project 2001 Regional Strategy and Implementation Plan:** This plan articulates long-term goals and specific implementation strategies to guide the efforts of the multi-party project and its partners to accelerate the restoration of coastal wetlands. Cumulative additive beneficial effects are expected from the combination of Southern California Wetlands Recovery Project activities and MSRP efforts to restore coastal wetlands.

MSRP action affecting the same or similar resources: “restore full tidal exchange wetlands.”

- **Other Seabird Restoration Projects:** In addition to the seabird restoration actions proposed by the MSRP, several other recently completed, ongoing, and proposed projects target the same seabird species and their habitats. These projects stem from natural resource damage (NRD) settlements from other cases and from the independent efforts of various environmental organizations that focus on seabird restoration. Other recently settled NRD cases that have resulted in seabird restoration actions in the region include the American Trader, Command, and Cape Mohican cases. Other NRD case settlements are likely to occur in the future, leading to additional seabird restoration projects. The seabird restoration projects conducted or planned for target species and/or within the study area include the Anacapa Island Restoration Project, the Brown Pelican Roost Enhancement Project in the San Diego Bay Salt Ponds, the Brown Pelican Entanglement Outreach and Education Program for Southern California, the Common Murre Restoration Project, the Western and Clark's Grebe Restoration Project, and the Seabird Colony Protection Program. These and other projects are further described in the restoration plans associated with these NRD cases. Cumulative additive beneficial effects are expected from the combination of these projects and the MSRP seabird restoration actions. The other seabird restoration projects, when considered together with the MSRP bald eagle and peregrine falcon restoration actions, will have minor additive beneficial effects on bald eagles (which prey to a limited extent on seabirds) and will have somewhat greater additive beneficial effects on peregrine falcons (which prey on seabirds to a greater extent than bald eagles).

MSRP actions affecting the same or similar resources: bald eagle, peregrine falcon, and seabird restoration actions.

- **Ports of Los Angeles and Long Beach:** The Ports of Los Angeles and Long Beach are the largest ports on the west coast of the United States. Numerous construction and environmental mitigation projects are at various stages of planning, design, and implementation. Some of these projects include marine harbor and pier terminal redevelopments projects, construction of the Rainbow Harbor master plan, reconfiguration of

wharves and expansion of backlands, channel deepening projects, construction of a crude oil receiving facility at Port of Los Angeles Pier 400, expansion of Cabrillo Marine Aquarium, and construction of a fishing reef off of Point Fermin, near the San Pedro breakwater. The potential for cumulative impacts from MSRP actions and port projects cannot be adequately assessed until further details are developed on the MSRP fishing and fish habitat actions. The Trustees will consider the potential for cumulative impacts as the planning and design of these actions progress.

MSRP actions affecting the same or similar resources: “construct artificial reefs and fishing access improvements.”

- **Cooling Water Intake Entrainment and Impingement – New Requirements:** Coastal electric power generation stations and other large industrial facilities draw in millions of gallons per day from nearshore waters for cooling purposes. Marine life can be either entrained or impinged on the intake structures. Entrained organisms are those that are not strong enough to swim against the current of the intake system. Impinged organisms are those that are collected on traveling screens designed to remove large debris from the intake water. Cooling water intakes kill billions of fish larvae and hundreds of thousands of juveniles and adults each year (USEPA 2004a). In addition to fish losses, larval forms of invertebrates and adult zooplankton are lost to the ecosystem. Fourteen coastal power plants in Southern California use large quantities of cooling water. In July 2004, the EPA issued new regulations under Section 316(b) of the federal Clean Water Act that set requirements for large power plants (those utilizing over 50 million gallons of water per day) to reduce the impacts of cooling water intake on marine organisms. MSRP restoration actions will have beneficial counteracting effects to the ongoing adverse effects from the operation of major cooling water intake structures in the Southern California Bight. MSRP restoration actions will have beneficial additive effects to the beneficial effects from the reductions in entrainment and impingement that are expected as a result of the implementation of the new EPA regulatory requirements for cooling water intakes.

MSRP actions that affect the same or similar resources: fishing and fish habitat actions.

- **Desalination Facilities:** Currently, several seawater desalination facilities exist in the study area and about a dozen facilities are being considered. The existing coastal desalination facilities are relatively small, but the total output of all of the proposed coastal facilities, including some that would be among the largest in the country, could be far greater. Coastal desalination facilities may have adverse impacts on marine organisms due to the effects of the seawater intake and discharge on nearby marine life. The largest proposed desalination facilities would be located at coastal power plants that use ocean water for cooling, and these facilities would propose to use hundreds of millions of gallons of seawater per day. The existing desalination facilities in Southern California are located on Santa Catalina Island, San Nicolas Island, and various offshore oil and gas platforms. These facilities have a combined maximum capacity of about 200 acre-feet per year. New facilities in various stages of planning, design, and approval for construction include facilities in Long Beach, Los Angeles, Huntington Beach, San Onofre, Carlsbad, and San Diego. The potential combined maximum capacity of these new facilities is over 200,000 acre-feet per year.

MSRP actions that affect the same or similar resources: fishing and fish habitat restoration actions.

- **California Marine Life Protection Act (MLPA) Initiative:** The 1999 MLPA directed the state to design and manage a network of marine protected areas to, among other things, protect marine life and habitats, marine ecosystems, and marine natural heritage, as well as improve the recreational, educational, and study opportunities provided by marine ecosystems. The California Resources Agency and the California Department of Fish and Game are partnering with the Resources Legacy Fund Foundation, NOAA, and the MPA Science Institute of the National Marine Protected Areas Center in a new initiative to achieve the MLPA goals. This public-private partnership is being guided by the advice of scientists, resource managers, experts, stakeholders, and members of the public. The MLPA Initiative, which is governed by a blue-ribbon task force, will oversee the preparation of a statewide guide for developing a Marine Protected Area master plan, create a pilot project in an area along the central coast to identify potential networks of Marine Protected Areas, develop a strategy for long-term funding, and make recommendations for improved coordination of Marine Protected Areas with key federal agencies.

MSRP actions that affect the same or similar resources: “augment funding for MPAs in California.”

- **Liquefied Natural Gas Deepwater Port Import Terminals and Associated Facilities and Operations:** Several proposals have been made to construct and operate liquefied natural gas (LNG) import, storage, and transport facilities within the study area of this plan. Specific projects include three along the Southern California coast (a Port of Long Beach LNG terminal and the Cabrillo Port and Crystal Clearwater Port projects, which are proposed for 11 to 12 miles offshore of Ventura County) and three along the Pacific coast of Baja California (Energia Costa Azul, which is 14 miles north of Ensenada, GNL Mar Adentro [Chevron], which is near South Coronado Island, and the Moss Maritime facility, which is 5 miles offshore of Rosarito). Sempra Energy has commenced construction of the Energia Costa Azul facility, which is expected to be operational by 2008; the other facilities are in various stages of planning, design, and environmental review and legal dispute. These projects have several common components, including LNG carrier berths, storage facilities, regasification units, and pipelines. The Cabrillo Port and Crystal Clearwater Port projects are approximately 20 miles away from the nearest Channel Island, Anacapa, and for this analysis it is assumed that they are far enough away that normal operations would not be expected to seriously disrupt seabird colonies in the Channel Islands. In contrast, the potential GNL Mar Adentro facility, which is proposed for a location near South Coronado Island, would be located approximately 1 mile from that island, and thus disruption to seabirds would be expected to occur if this facility were built.

MSRP actions that affect the same or similar resources: seabird restoration projects near South Coronado Island.

- **SOCAL Range Complex and Point Mugu Sea Range Operations:** The U.S. Navy owns two of the Channel Islands, San Nicolas and San Clemente, and conducts military training and testing operations on them. The SOCAL Range Complex includes the following military training ranges: San Clemente Island, the Southern California Anti-Submarine Warfare Range, a live-fire exercise range, an aircraft emergency jettison area, the shallow water training range, and the shore bombardment range. Missile and aircraft overflights associated with ongoing operations on San Nicolas Island occur about eight times per year along the shore of the island. The Navy is also working with other partners to restore the endemic and

federally endangered San Clemente loggerhead shrike. Restoration of peregrine falcons to the Southern Channel Islands could have counteractive effects on efforts to increase the numbers of San Clemente loggerhead shrikes, as the peregrine falcons might prey on the shrikes.

MSRP actions that affect the same or similar resources: “restore seabirds to San Nicolas Island” and peregrine falcon restoration.

7.3.1 Alternative 1 (No Action)

7.3.2 Alternatives 2 and 3

As described in Section 7.2.1, under the No Action Alternative no cumulative impacts would occur. The beneficial effects of natural resource restoration actions would not be realized. The purpose and need for the Montrose Settlements Restoration Program (i.e., utilizing the funds from the Montrose settlements to restore injured resources and lost services) would not be met. Without active restoration projects, there would be no biological, physical, or human use beneficial or adverse impacts. However, natural resource injuries and lost services resulting from the DDTs and PCBs of the Montrose case would persist in the Southern California Bight for the foreseeable future. Also, no compensation for interim lost natural resource services from the date of the enactment of CERCLA until the time that the injuries cease would be realized.

This section presents an assessment of cumulative effects for the two action alternatives, Alternatives 2 and 3. Each of these two alternatives consists of a different combination of the 17 restoration actions described in Section 6 and evaluated in detail in Appendices A–D. Several of these individual actions are common to both alternatives, some are only in one alternative, and some are not included in either. The cumulative impacts of each of the 17 actions are presented here one by one (in the same order as the actions are listed in Appendices A–D); the headings indicate which of the alternatives each action is a part of.

A1. Construct Artificial Reefs and Fishing Access Improvements

Alternative 2 [✓] Alternative 3 [✓] Neither []

This action will require subsequent environmental analysis when the project details are more fully developed.

Cumulative Biological Effects

The soft-bottom marine habitats covered by artificial reefs under this action are the spatially predominant benthic habitat type in the coastal regions of the Southern California Bight. For example, in a U.S. Geological Survey (USGS) study of the seafloor of Short Bank in central Santa Monica Bay (Dartnell and Gardner 2004), less than 11 percent of the seafloor was classified as rock. Thus, on a regional scale the percentage of soft-bottom marine benthic habitat that may be covered by reefs constructed by the MSRP, even when considered along with other jurisdictions that have constructed or may construct artificial reefs (e.g., Port of Los Angeles or the San Onofre Nuclear Generating Station) would be insignificant.

The construction of new artificial reefs may increase fish production, though the amount of increase would depend on their design and location (see Appendix A1). When considered in association with the adverse effects on marine life from current and proposed desalination and

cooling water intake structures in the study area, the construction of artificial reefs may have countervailing (i.e., beneficial or mitigating) biological effects. Cumulative beneficial biological effects may also be realized by the combination of MSRP artificial reef construction with other similar fisheries enhancement actions in the study area (construction of the Point Fermin and other artificial reefs, reduction of entrainment and impingement brought about by the implementation of new EPA regulations on cooling water intakes, and increased productivity from the establishment of Marine Protected Areas).

Cumulative Physical Effects

At the regional level, when considering the cumulative size of the proposed MSRP and other artificial reef projects reasonably foreseeable for the Southern California Bight, the potential cumulative impacts of artificial reef construction on sediments, water resources, and oceanographic and coastal processes are not considered to be significant. Potential concerns over short-term water quality impacts from reef material placement and concerns about potential effects on sediment transport or other processes will be addressed in subsequent site-specific analysis as potential reef sites are identified. Individual reef construction projects will be spatially and temporally spread apart; thus, the physical impacts from MSRP reef construction are not expected to have additive cumulative impacts. The potential for additive impacts due to non-MSRP construction activities will be addressed in subsequent site-specific environmental analysis.

Cumulative Human Use Effects

Considered cumulatively, the effects of MSRP- and other-constructed reefs on recreation would be largely beneficial. The restoration of lost fishing services, one of the objectives of the MSRP, would entail actions to improve the ability of recreational and subsistence anglers to fish for fish that are not the subject of state consumption advisories. Unless care is taken during planning to consider the potential cumulative impacts associated with the locations and construction of multiple new reefs, these reefs have the potential to adversely affect other aquatic human uses such as surfing and boating. The locations and designs of reefs will be determined so as to avoid or minimize potential conflicts with other human uses and to consider the cumulative impacts associated with the combination of MSRP-sponsored work and other actions.

A2. Provide Public Information to Restore Lost Fishing Services

Alternative 2 [✓]

Alternative 3 [✓]

Neither []

Cumulative Biological and Physical Effects

This action would have no known direct or indirect effects on the biological or physical environment.

Cumulative Effects on Human Uses

The public information on fishing and fish contamination that is made available by the MSRP and others may potentially redistribute or increase or decrease the number of fishing trips that occur at different fishing sites along the Southern California coast. These effects will improve recreational enjoyment by making better information available on where and how to fish for cleaner fish. Several other regional and national public campaigns are aimed at educating the public and changing public fishing and fish consumption practices. For example, the EPA has created the local Fish Contamination Education Collaborative, and the EPA and the Food and

Drug Administration have implemented national campaigns on reducing exposures to mercury in certain fish species. In combination, these public information actions have beneficial additive cumulative effects on human uses.

A3. Restore Full Tidal Exchange Wetlands*Alternative 2* [✓]*Alternative 3* []*Neither* []

This action will require subsequent environmental analysis when the project details are more fully developed.

Cumulative Biological, Physical, and Human Use Effects

Coastal wetland habitat is scarce along the Southern California coast, and the large-scale projects that create or improve existing habitat of this type that the MSRP may contribute funding to are the subject of a major regional planning effort (Southern California Wetlands Recovery Project 2004). Although restorers of coastal wetlands in Southern California seek outcomes having highly beneficial cumulative effects on the environment, such projects involve numerous biological, physical, and human use trade-offs. The cumulative effects of coastal wetlands restoration in Southern California has been analyzed recently in several relevant environmental impact reports and statements (e.g., the 2001 Final EIS/EIR for the Bolsa Chica lowlands restoration project [USFWS 2001a]). Until more specific decisions are made, this MSRP action, which contributes toward wetlands restoration, is not yet specific enough for cumulative impacts analysis; these effects will be addressed in subsequent NEPA/CEQA analysis for the specific wetlands restoration project(s) to which the MSRP contributes a portion of funding. Alternatively, should the Trustees contribute toward a wetlands project for which NEPA/CEQA documentation has already been completed, the Trustees will evaluate and adopt that existing documentation.

A4. Augment Funds for Implementing Marine Protected Areas in California*Alternative 2* [✓]*Alternative 3* []*Neither* []**Cumulative Effects on the Biological Environment**

To the extent that MSRP funding improves the implementation of the Channel Islands MPAs, it may increase the biological productivity within the MPA boundaries. This increase may have beneficial (countervailing) cumulative effects on marine life in the study area when considered in combination with the potentially adverse impacts to marine life if new desalination plants are constructed in the region. This action may also have beneficial additive cumulative effects when considered in combination with the reductions in entrainment and impingement from coastal cooling water intakes as new EPA regulations are implemented.

Cumulative Effects on the Physical Environment

This action would have no known direct or indirect effects on the physical environment.

Cumulative Effects on Human Uses

Given the long-term goals of the California Marine Life Protection Act (see Appendix A4), it is possible that the MSRP enhancement to implementation and monitoring of the Channel Island MPAs may contribute information to the efforts at implementing the California Marine Life Protection Act, and this information will factor into subsequent decisions on whether to create

additional MPAs elsewhere along the California coast. The information from this action may potentially lead to both beneficial and adverse effects on fishing and other types of human uses of the ocean environment in and around the MPAs; however, insufficient information is available at this point to consider how such future actions will play out.

B. Complete the NCI Bald Eagle Feasibility Study Before Deciding on Further Restoration Actions

Alternative 2 [✓] *Alternative 3* [] *Neither* []

This is an interim action that will require subsequent environmental analysis.

Cumulative Biological Effects

This is an interim action in that it defers longer range decisions on bald eagle restoration until the NCI Bald Eagle Feasibility Study is concluded. Other actions affecting the same or similar resources are the Channel Islands National Park and Channel Islands National Marine Sanctuary management plans and the Catalina Island Conservancy annual operational plan. Because some, if not most, of the bald eagles currently on Santa Catalina Island are expected to remain during the interim period even if the suspension of MSRP funding leads to a discontinuation of that program, no cumulative adverse biological effects are expected from this bald eagle action. There is a potential that the separate past, present, and future bald eagle restoration actions on Santa Catalina Island, Santa Cruz Island, and on the California mainland will have additive or synergistic beneficial effects on bald eagles throughout the region. Further analysis of the potential cumulative effects will be a part of subsequent decision-making on bald eagle restoration in or around 2008.

Bald eagle restoration actions alone are not expected to result in significant impacts to seabirds, as seabirds are not a principal component of bald eagle diets in the Channel Islands. This potential impact was discussed in detail in the Feasibility Study for Reestablishment of Bald Eagles on the Northern Channel Islands (MSRP 2002). When bald eagle actions are considered cumulatively with the restoration of peregrine falcons, which prey almost exclusively on other birds, there is a greater potential for impacts on sensitive seabird and terrestrial bird species in the Channel Islands. Further discussion of this point is presented in the following section on peregrine falcon restoration.

Cumulative Physical Effects

This action would have no known direct or indirect effects on the physical environment.

Cumulative Effects on Human Uses

Cumulative effects on human uses are not expected from this action given the interim nature of this action and the likelihood that bald eagles will remain on Santa Catalina Island and continue to be sighted by residents and visitors.

B. Complete the NCI Bald Eagle Feasibility Study; Regardless of its Outcome, Continue Funding Santa Catalina Island Bald Eagle Program

Alternative 2 [] *Alternative 3* [✓] *Neither* []

Cumulative Effects on the Biological Environment

This action, along with implementation of other Channel Island management plans identified above, is expected to have additive beneficial effects on bald eagles and further the collective aims of these plans to restore the natural ecological attributes of these island environments. Bald eagle restoration actions alone are not expected to result in significant impacts to seabirds, as seabirds are not a principal component of bald eagle diets in the Channel Islands. This potential impact was discussed in detail in the Feasibility Study for the Reestablishment of Bald Eagles on the Northern Channel Islands (MSRP 2002). When bald eagle actions are considered cumulatively with the restoration of peregrine falcons, which prey almost exclusively on other birds, there is a greater potential for impacts on sensitive seabird and terrestrial bird species in the Channel Islands. Further discussion of this point is presented in the following section on peregrine falcon restoration.

Cumulative Effects on the Physical Environment

This action would have no known cumulative effects on the physical environment.

Cumulative Effects on Human Uses

This action would have no known cumulative effects on human uses.

C1. Restore Peregrine Falcons to the Channel Islands

Alternative 2 [] Alternative 3 [] Neither [✓]

C2. Monitor the Recovery of Peregrine Falcons on the Channel Islands

Alternative 2 [✓] Alternative 3 [✓] Neither []

C3. Restore Peregrine Falcons to the Baja California Pacific Islands

Alternative 2 [] Alternative 3 [] Neither [✓]

These three peregrine falcon restoration actions are analyzed collectively.

Cumulative Biological Effects

The Trustees have evaluated whether peregrine falcon restoration to the Channel Islands, together with other actions that could adversely affect sensitive seabird and terrestrial bird species in the Channel Islands, may have additive cumulative impacts. Increasing the overall numbers of predatory birds (bald eagles and peregrine falcons) inhabiting the Channel Islands may have countervailing impacts when considering other actions aimed at restoring rare, threatened, or endangered seabirds and terrestrial birds. Birds constitute only a small fraction of the diet of bald eagles; however, peregrine falcons prey almost exclusively on other birds. Given that other actions (by the MSRP and other entities) to restore other bird populations are proceeding at the same time and given that bald eagles and peregrine falcons have had a long historical presence on the Channel Islands prior to their extirpation and presumably coexisted with other bird populations there, the restoration of bald eagles and peregrine falcons at a carefully monitored, measured pace is not expected to have a significant adverse cumulative impact on recovery efforts for other bird populations (MSRP 2002).

In addition to the potential countervailing effects of the restoration of bald eagles and peregrine falcons on the restoration and recovery of seabirds and terrestrial birds, the potentially adverse impacts of the LNG facility to be constructed and operated near South Coronado Island should

be considered. The incremental degree of increase in losses of sensitive seabird species such as petrels and auklets to predation due to a rise in the numbers of peregrine falcons foraging in the Coronado Islands and the LNG development is uncertain. This uncertainty will be addressed through subsequent project monitoring and adaptive management.

The potential for interactive effects from MSRP bird restoration projects is one of the factors contributing to the Trustees' preference for Alternative 2, which provides a more balanced mix of funding for predatory bird and seabird restoration. In the absence of seabird restoration, predatory bird restoration has a greater potential to adversely affect sensitive seabird populations. Similarly, increases in seabird numbers likely benefit peregrine falcons and other predatory birds. Thus, the potential for cumulative adverse effects on other birds from peregrine falcon and bald eagle restoration are offset when seabird restoration proceeds at the same time.

Cumulative Physical Effects

This action would have no known cumulative effects to the physical environment.

Cumulative Human Use Effects

This action would have no known cumulative effects on human uses.

D1. Restore Seabirds to San Miguel Island

Alternative 2 [✓] *Alternative 3* [] *Neither* []

This action will require subsequent environmental analysis when the project details are more fully developed.

Cumulative Biological Effects

As described in Section 7.2.2, efforts to restore seabirds through the eradication of rats from San Miguel Island has the potential to adversely affect non-target species, particularly the native deer mouse, and to indirectly affect the ongoing recovery efforts for the endangered island fox. This action will proceed only if the risks to non-target species can be minimized to an acceptable level, which will be the subject of subsequent planning efforts.

Potential cumulative adverse effects to rats targeted for removal or eradication from San Miguel Island under this action are considered insignificant given the wide distribution and numbers in which such rats occur elsewhere, particularly on the U.S. mainland. Numerous efforts to remove non-native species (rabbits, cats, feral sheep, cattle, burros, and feral pigs) from the island environments along the California coast have occurred in the recent past, including the projects undertaken by the natural resource trustee councils for the Cape Mohican, M/T Command, and American Trader oil spill cases (NOAA 2005a) as well as the resource management projects undertaken by the Channel Islands National Park (NPS 2005). Together, these projects have resulted in substantial recoveries of endemic plants and animals on the islands (MSRP 2002) without adversely affecting the species targeted for eradication where they occur elsewhere.

Cumulative Physical Effects

This action would have no known cumulative effects to the physical environment.

Cumulative Human Use Effects

This action would have no known cumulative effects on human uses.

D2. Restore Alcids to Santa Barbara Island*Alternative 2* [✓]*Alternative 3* [✓]*Neither* []

This action will require subsequent environmental analysis when the project details are more fully developed.

Cumulative Biological Effects

This action would have no known cumulative effects on biological resources.

Cumulative Physical Effects

This action would have no known cumulative effects on the physical environment.

Cumulative Human Use Effects

This action would have no known cumulative impacts to human uses. Cultural resources would be avoided on the island during project implementation.

D3. Restore Seabirds to San Nicolas Island*Alternative 2* [✓]*Alternative 3* []*Neither* []

This action will require subsequent environmental analysis when the project details are more fully developed.

Cumulative Biological Effects

This action would complement the conservation actions that the U.S. Navy is taking on San Nicolas Island. The MSRP-funded feral cat eradication effort would expand ongoing control efforts with the goal of eradicating cats from the island over a 3-year time frame. Eradication of feral cats would benefit not only seabird populations but also island foxes and other endemic species on San Nicolas Island.

Potential cumulative adverse effects to non-native feral cats targeted for removal or eradication from San Nicolas Island under this action are considered insignificant given the wide distribution and numbers in which such cats occur elsewhere, particularly on the U.S. mainland. Numerous efforts to remove non-native species (rabbits, cats, feral sheep, cattle, burros, feral pigs, and invasive plants) from the island environments along the California coast have occurred in the recent past, including projects undertaken by natural resource trustee councils for the Cape Mohican, M/T Command, and American Trader oil spill cases (NOAA 2005a) as well as the resource management projects undertaken by the Channel Islands National Park (NPS 2005). These projects have resulted in substantial recoveries of endemic plants and animals on the islands (MSRP 2002) without adversely affecting the species targeted for eradication where they occur elsewhere.

Cumulative Physical Effects

This action would have no known cumulative effects on the physical environment.

Cumulative Human Use Effects

This action would have no known cumulative effects on human uses.

D4. Restore Seabirds to Scorpion and Orizaba Rocks*Alternative 2 [✓]**Alternative 3 [✓]**Neither []*

This action will require subsequent environmental analysis when the project details are more fully developed.

Cumulative Biological, Physical, and Human Use Effects

This action would have no known cumulative effects on the biological or physical environment or on human uses.

D5. Restore Seabirds to Baja California Pacific Islands*Alternative 2 [✓]**Alternative 3 [✓]**Neither []***Cumulative Biological Effects**

As described above in the analysis of cumulative effects for the peregrine falcon restoration actions, seabird restoration on the Coronados Islands and future LNG-related construction and operation near these islands may have countervailing effects. Specifically, the benefits of the MSRP actions aimed at restoring seabird populations around the Coronado Islands may be counteracted should the proposed GNL Mar Adentro (Chevron) LNG facility be constructed. The nature and degree of countervailing effects is unknown at this time. This uncertainty will be addressed through subsequent project monitoring and adaptive management.

Cumulative Physical Effects

These actions would have no known direct or indirect effects on the physical environment.

Cumulative Human Use Effects

These actions would have no known direct or indirect effects on human uses.

D6. Create/Enhance/Protect California Brown Pelican Roost Habitat*Alternative 2 []**Alternative 3 []**Neither [✓]*

This action will require subsequent environmental analysis when the project details are more fully developed.

Cumulative Biological, Physical, and Human Use Effects

Because no specific sites have been selected for this action, the nature and degree of cumulative effects are unknown at this time. This uncertainty will be addressed through subsequent environmental analysis.

D7. Implement an Entanglement Reduction and Outreach Program to Protect Seabird Populations*Alternative 2 []**Alternative 3 []**Neither [✓]***Cumulative Biological Effects**

This action would have no known cumulative effects on the biological environment.

Cumulative Physical Effects

This action would have no known cumulative effects on the physical environment.

Cumulative Human Use Effects

Although numerous other small- and larger-scale public outreach and education efforts aim at reducing adverse impacts to non-targeted resources from fishing and other coastal recreational activities, the cumulative effects on human uses of this and other such actions are not considered significant.

D8. Restore Ashy Storm-Petrels to Anacapa Island*Alternative 2 [✓]**Alternative 3 [✓]**Neither []*

This action will require subsequent environmental analysis when the project details are more fully developed.

Cumulative Biological Effects

This action will capitalize on the recently completed rat eradication efforts on Anacapa Island. The recent removal of the rat population provides an excellent opportunity for colonization on the island by ashy storm-petrels, as the amount of suitable nesting habitat for seabirds has increased substantially.

Cumulative Physical Effects

This action would have no known cumulative effects on the physical environment.

Cumulative Human Use Effects

This action would have no known cumulative effects on human uses.

7.4 OTHER NEPA- AND CEQA-MANDATED DISCUSSIONS

7.4.1 Irreversible and Irretrievable Commitment of Resources and Environmental Changes

The MSRP will require a relatively small but irretrievable commitment of energy and material resources to construct and monitor the preferred alternative. CEQA regulations require that an EIR consider significant irreversible environmental changes. Construction of artificial reefs will involve physical placement of material on the seafloor that will be for all practical purposes an irreversible action. Most of the MSRP actions, however, such as those aimed at restoring birds through removal of non-native fauna and flora from islands, the use of social attraction techniques, and the hacking of bald eagles and peregrine falcons, could theoretically be reversed at some point in the future. Depending on other future developments, the suspension of the Trustees' funding support for the bald eagle program on Santa Catalina Island could eventually lead to the disappearance of bald eagles from that island. This result could happen if no other funding sources are found to continue the intervention needed because the bald eagles cannot reproduce on their own and if the Trustees decide not to pursue further bald eagle restoration work on Santa Catalina Island after the NCI Bald Eagle Feasibility Study is complete. Such consequences could be reversed at some point in the future by hacking new bald eagles onto the island.

7.4.2 Relationship between Short-Term Uses of the Environment and the Maintenance and Enhancement of Long-Term Productivity

The short-term uses of the environment that will occur in conjunction with the proposed actions are expected to lead to substantially greater long-term productivity.

7.4.3 Growth-Inducing Impacts

CEQA regulations require that an EIR address the potential growth-inducing impacts of a proposed project. Implementation of the MSRP actions will not foster economic or population growth or the construction of additional housing, and therefore will not have a growth-inducing impact.

7.4.4 Significant and Unavoidable Adverse Impacts

To the extent known at this stage in the planning, no adverse impacts identified in this programmatic EIS/EIR are expected to be significant. Several individual projects require subsequent site-specific detail development and environmental analysis. Should any significant and unavoidable adverse environmental impacts be identified at a later stage in planning, they will be addressed in subsequent environmental documentation. The Trustees do not intend to pursue natural resource restoration projects that, on subsequent analysis, have significant and unavoidable adverse environmental impacts.

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8.1 OVERVIEW

The three major laws guiding the restoration of the injured resources and services for the Montrose Settlements Restoration Program (MSRP) are the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the National Environmental Policy Act (NEPA), and the California Environmental Quality Act (CEQA). These statutes set forth a specific process of impact analysis and public review. The Natural Resource Trustees for the Montrose case (Trustees) must also 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 study area. The Trustees must ensure that their 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 contaminant releases at issue in the Montrose case.

8.2 KEY STATUTES, REGULATIONS, AND POLICIES

8.2.1 Federal Statutes and Executive Orders

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (42 U.S.C. 9601 et seq.)

CERCLA, otherwise known as the Superfund law, provides the basic legal framework for the cleanup and restoration of the nation's hazardous substances sites. Under CERCLA, responsible parties are liable for damages, including reasonable assessment costs, for injuries to, or the loss of, natural resources. The term "natural resources" is broadly defined by CERCLA to 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, ... any state or local government, any foreign government, or any Indian tribe...." The state provides that parties responsible for contamination of sites and the current owners or operators of contaminated sites are liable for the cost of cleanup and for damages to natural resources. Compensation is used to restore, replace, rehabilitate, or acquire the equivalent of natural resources and services. The MSRP will operate in accordance with the requirements of CERCLA.

Federal and state agencies and Indian tribes may act as Trustees on behalf of the public to assess the injuries, scale restoration to compensate for those injuries, and implement restoration. This Restoration Plan/Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) has been prepared jointly by the six trustee agencies that form the Montrose Trustee Council: the National Oceanic and Atmospheric Administration (NOAA) (lead agency for the federal government), the U.S. Fish and Wildlife Service (USFWS), the National Park Service (NPS), the California Department of Fish and Game (CDFG) (lead agency for the State of California), the California Department of Parks and Recreation (CDPR), and the California State Lands Commission (CSLC). CERCLA and its implementing regulations for natural resource damage

assessment and restoration (Title 43 Code of Federal Regulations [CFR] Part 11) mandate that the designated Trustees shall develop and implement a plan for the restoration, rehabilitation, replacement, or acquisition of the equivalent of the injured natural resources and lost services.

National Environmental Policy Act, 42 U.S.C. 4321, et seq.; 40 C.F.R. Parts 1500–1508

NEPA sets forth a specific process of impact analysis and public review. NEPA is the basic national charter for the protection of the environment. Its purpose is to “encourage productive and enjoyable harmony between man and the environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; and to enrich the understanding of the ecological systems and natural resources important to the Nation.” The law requires the government to consider the consequences of major federal actions on human and natural aspects of the environment to minimize, where possible, adverse impacts. Equally important, NEPA established a process of environmental review and public notification for federal planning and decision making.

Generally, when it is uncertain whether an action will have a significant effect, federal agencies will begin the NEPA planning process by preparing an Environmental Assessment (EA). Alternatively, the federal agencies may proceed directly to the preparation of an EIS. The Trustees have chosen to bypass the EA step and proceed directly to the preparation of a programmatic EIS, due to the broad-reaching nature of the actions being proposed under the MSRP and the fact that some of the specific restoration actions and locations have yet to be determined at this time.

The Trustees have integrated CERCLA restoration planning with the NEPA process to comply, in part, with those requirements. This integrated approach allows the Trustees to meet the public involvement requirement of CERCLA and NEPA concurrently.

The Clean Water Act, 33 U.S.C. 1251, et seq.

The Clean Water Act (CWA) is the principal statute governing water quality. The goal of the CWA is to restore and maintain the chemical, physical, and biological integrity of the nation’s waters. The CWA regulates both the direct and indirect discharge of pollutants into the nation’s waters. Section 301 of the CWA prohibits the discharge into navigable waters of any pollutant by any person from a point source unless it is in compliance with a National Pollution Discharge Elimination System permit.

Section 311 of the CWA regulates the discharge of oil and other hazardous substances into navigable waters and waters of the contiguous zone, as well as onto adjoining shorelines, that may be harmful to the public or to natural resources. The CWA allows the federal government to remove the substance and assess the removal costs against the responsible party. Under the CWA, removal costs include those associated with the restoration or replacement of the natural resources damaged or destroyed as a result of a discharge of oil or a hazardous substance.

Section 404 of the act authorizes the U.S. Army Corps of Engineers to issue permits, after notice and opportunity for public hearings, for the disposal of dredged and fill material into navigable waters. Generally, projects that discharge dredged or fill material into waters including wetlands require Section 404 permits. Section 401 of the CWA provides that projects that involve discharge or fill to wetlands or navigable waters must obtain certification of compliance with

state water quality standards. The Trustees anticipate that artificial reef construction, fishing access improvements, wetlands restoration actions, and potentially other actions such as seabird roost creation or enhancement will require permits under the CWA; the implementing agency for each project will apply for these permits as appropriate after sufficient site-specific information is developed.

The Clean Air Act, 42 U.S.C. 7401, et seq.

The Clean Air Act (CAA) is the principal statute governing air quality. The primary goal of the CAA is to protect and enhance the quality of the nation's air resources so as to promote the public health and welfare and the productive capacity of its population. The CAA regulates both the direct and indirect discharge of airborne pollutants. Section 7471 of the CAA states that applicable implementation plans shall contain emission limitations and such other measures as may be necessary, as determined under regulations promulgated under this part, to prevent significant deterioration of air quality.

The Trustees anticipate that artificial reef construction, fishing access improvements, wetlands restoration actions, and potentially other actions such as seabird roost creation or enhancement will require discussion of general conformity requirements; the implementing agency for each project will address these requirements after sufficient site-specific information is developed.

Coastal Zone Management Act, 16 U.S.C. 1451, et seq.

The goal of the Coastal Zone Management Act (CZMA) is to encourage states to preserve, protect, develop, and, where possible, restore and enhance valuable natural coastal resources. Participation by states is voluntary. The State of California has enacted the federally approved California Coastal Act.

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 the MSRP will adversely affect the State of California's coastal zone. However, to comply with the CZMA, the Trustees intend to seek the concurrence of the State of California that the preferred restoration projects are consistent to the maximum extent practicable with the enforceable policies of the state coastal program.

Endangered Species Act, 16 U.S.C. 1531, et seq.

The purpose of the Endangered Species Act (ESA) is to conserve endangered and threatened species and the ecosystems on which they depend. The ESA directs all federal agencies to use their authorities to further these purposes. Pursuant to Section 7 of the ESA, each federal agency shall, in consultation with the secretary, ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat.

Under the ESA, NOAA and the USFWS publish lists of endangered and threatened species. Before initiating an action, the federal action agency, or its non-federal permit applicant, must ask the USFWS and/or NOAA to provide a list of threatened, endangered, proposed, and candidate species and designated critical habitats that may be present in the project area. If no species or critical habitats are present, the federal action agency has no further ESA obligation under Section 7. If a listed species is present and the federal action agency determines that the project may affect a listed species, consultation is required. The first phase of consultation is informal. For major construction activities, a biological assessment is required to assist in the determination of whether the proposed action is likely to adversely affect listed species and critical habitats. For actions that are not major construction activities, the federal action agency must provide the USFWS and/or NOAA with an account of the basis for evaluating the likely effects of the action.

If the federal action agency concludes that the project will not adversely affect listed species or critical habitats, the agency submits a “not likely to adversely affect” determination to the USFWS and/or NOAA for its concurrence. If the USFWS and/or NOAA concurs with the federal action agency that the project is not likely to adversely affect any listed species, then the consultation (informal to this point) is concluded and the decision is put in writing. Although not required, the federal action agency may request written concurrence from the USFWS and/or NOAA that the proposed action will have no effect on listed species or critical habitats.

If the federal action agency determines that a project may adversely affect a listed species or a designated critical habitat, formal consultation is required. There is a designated period of time in which to consult (90 days), and beyond that, another set period of time for the USFWS and/or NOAA to prepare a biological opinion (45 days). The determination of whether or not the proposed action would be likely to jeopardize the species or adversely modify its critical habitat is contained in the biological opinion. If a jeopardy or adverse modification determination is made, the biological opinion must identify any reasonable and prudent alternatives that could allow the project to move forward.

Multiple threatened and endangered species occur in the study area for this Restoration Plan (see Tables 3.4-4 and 3.4-5). Several of the preferred projects target restoration of federally listed species, including the endangered California brown pelican and the threatened bald eagle. Other listed species, such as the endangered island fox, may be affected by proposed projects. For each project that is selected as preferred in the final Restoration Plan, the Trustees will evaluate the potential effects of the project on listed species and critical habitat. Based on this analysis, the Trustees will perform the appropriate level of consultation with the USFWS and/or NOAA Fisheries pursuant to Section 7 of the ESA.

Magnuson-Stevens Fishery Conservation and Management Act, 16 U.S.C. 1801, et seq.

The federal Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens 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 an 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.

None of the projects for which this programmatic EIS/EIR represents final environmental review have the potential to affect an EFH. For other projects requiring subsequent analysis and having the potential to affect EFH, the Trustees will consult with appropriate NOAA officials after sufficient site-specific information is developed.

Fish and Wildlife Coordination Act, 16 U.S.C. 661, et seq.

The federal Fish and Wildlife Coordination Act requires that federal agencies consult with the USFWS, NOAA Fisheries, 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 CWA, NEPA, or other federal permit, license, or review requirements.

The Trustees will consult with the appropriate agencies as they pursue permitting for specific actions that may trigger such consultation.

Marine Mammal Protection Act, 16 U.S.C. 3371, et seq.

Under the Marine Mammal Protection Act (MMPA), the Secretary of Commerce is responsible for the conservation and management of pinnipeds (other than walruses) and cetaceans. The Secretary of the Interior is responsible for walruses, sea otters, polar bears, manatees, and dugongs. The Secretary of Commerce delegated MMPA authority to NOAA Fisheries. Title II of the act established an independent Marine Mammal Commission and its Committee of Scientific Advisors to oversee and recommend actions necessary to meet the intents and provisions of the act. The act provides that the Secretary shall allow the incidental, but not intentional, taking, by U.S. citizens engaged in activities other than commercial fishing of small numbers of depleted as well as non-depleted marine mammals if, after notice and opportunity for public comment, the secretary finds that the total of such taking will have a negligible impact on the affected species or stock, and prescribes regulations setting forth permissible methods of taking, and requirements for monitoring and reporting such taking.” However, the 1994 amendments provide that this regulation requirement may be waived provided that the proposed activity results in only harassment, and no serious injury or mortality is anticipated.

None of the projects for which this programmatic EIS/EIR represents final environmental review have the potential to affect marine mammals. For other projects requiring subsequent analysis and having the potential to affect marine mammals, the Trustees will consult with appropriate NOAA or USFWS officials after sufficient site-specific information is developed.

Migratory Bird Treaty Act of 1918, 16 U.S.C. 703, et seq.

The Migratory Bird Treaty Act (MBTA) implements four international treaties involving protection of migratory birds, including all marine birds, and is one of the earliest statutes (amended several times) to provide for avian protection by the federal government. Among its other provisions, it broadly prohibits actions to “pursue, hunt, take, capture, kill, attempt to take, kill, possess, offer for sale, sell, offer to purchase, deliver for shipment, ship, cause to be shipped,

deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird...or any part, nest, or egg of such bird.” Exceptions to these prohibitions are only allowed under regulations or permits issued by USFWS. Hunting of game birds, including waterfowl and certain shore birds, is annually regulated through a process in which the USFWS sets “framework regulations” based on the best current population data available, and states pass regulations that conform to those federal regulations. All other prohibited actions are only allowed under specific permits issued by the USFWS. Criminal violations of this act are enforced by USFWS, and it is also the primary statute under which USFWS and U.S. Department of Interior have responsibility to manage all migratory birds wherever they occur, including marine birds.

The MBTA is also the basis for USFWS oversight and permitting of collection and preservation or rehabilitation of birds oiled during spill response, which usually provides the primary data for determining extent of injury to marine birds and the need for restoration.

Projects identified in this Restoration Plan and programmatic EIS/EIR will be conducted in full compliance with the MBTA.

National Marine Sanctuaries Act, 16 U.S.C. 1431, et seq.

The National Marine Sanctuaries Act (NMSA) prohibits the destruction, loss of, or injury to any sanctuary resource and any violation of the act, any regulations, or permits issued pursuant to the NMSA. The Secretary of Commerce (Secretary) is required to conduct such enforcement activities as are necessary and reasonable to carry out the NMSA. The Secretary may issue special use permits that authorize specific activities in a sanctuary to establish conditions of access to and use of any sanctuary resource, or to promote public use and understanding of a sanctuary resource.

The NMSA also establishes liability for response costs and natural resource damages for injury to sanctuary natural resources. Under the NMSA, the Secretary may undertake or authorize all necessary actions to prevent or minimize the destruction or loss of, or injury to, sanctuary resources, or to minimize the imminent risk of such destruction, loss, or injury. Furthermore, the Secretary shall assess damage to sanctuary resources. The act defines natural resource damages to include (1) the cost of replacing, restoring, or acquiring the equivalent of a sanctuary resource, (2) the value of the lost use of the resource pending its restoration, (3) the cost of damage assessments, and (4) reasonable monitoring costs. The Secretary is required to use recovered response costs and damages to finance response actions and damage assessments to restore, replace, or acquire the equivalent of the injured sanctuary resource, and to manage and improve national marine sanctuaries.

The Channel Islands National Marine Sanctuary is located within the study area of the Restoration Plan. None of the projects for which this programmatic EIS/EIR represents final environmental review have the potential to affect this sanctuary. For other projects requiring subsequent analysis and having the potential to affect resources within the sanctuary, the Trustees will consult with and as appropriate apply for a permit from the Channel Islands National Marine Sanctuary office after sufficient site-specific information is developed.

Park System Resource Protection Act, 16 U.S.C. 19jj

Public Law 101-337, the Park System Resource Protections Act (PSRPA) (16 United States Code [U.S.C.] 19jj), requires the Secretary of the Interior (Secretary) to assess and monitor injuries to NPS resources. A “park system resource” is defined by the PSRPA as “any living or nonliving resource that is located within the boundaries of a unit of the National Park System....” The act specifically allows the Secretary to recover response costs and damages from the responsible party causing the destruction, loss of, or injury to park system resources. “Response costs” are defined by the act to include the costs of actions taken by the Secretary to prevent, abate, or minimize the destruction, loss, or injury or imminent risk of such destruction, loss, or injury. Response costs also include monitoring ongoing effects of incidents causing such destruction, loss, or injury.

The Channel Islands National Park is located within the study area of the Restoration Plan, and several projects will occur on NPS lands. However, none of the projects for which this programmatic EIS/EIR represents final environmental review have the potential to negatively affect NPS resources. For other projects requiring subsequent analysis and having the potential to affect NPS resources, the Trustees will consult with and, as appropriate, apply for a permit from the Channel Islands National Park office after sufficient site-specific information is developed.

Rivers and Harbors Act, 33 U.S.C. 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 U.S. Army Corps of Engineers with authority to regulate discharges of fill and other materials into such waters. Restoration actions that require Section 404 CWA 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.

The Trustees do not believe that any of the projects for which this programmatic EIS/EIR represents final environmental review have the potential to negatively affect navigable waters. For other projects requiring subsequent analysis and having the potential to affect navigable waterways (e.g. artificial reefs), the Trustees will consult with appropriate U.S. Army Corps of Engineers officials after sufficient site-specific information is developed.

Executive Order 11988: Construction in Flood Plains

This 1977 executive order (EO) directs federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of development in floodplains wherever there is a practicable alternative. Each agency is responsible for evaluating the potential effects of any action it may take in a floodplain. Before taking an action, the federal agency should determine whether the proposed action would occur in a floodplain. For any major federal action significantly affecting the quality of the human environment, the evaluation would be included in the agency’s NEPA compliance document(s). The agency should consider alternatives to avoid adverse effects and incompatible development in floodplains. If the only practicable alternative requires siting in a floodplain, the agency should: (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 floodplain.

None of the projects for which this programmatic EIS/EIR represents final environmental review will occur in a floodplain. For other projects requiring subsequent analysis and having the potential to occur in a floodplain (e.g., wetland restoration), the Trustees will consult with appropriate officials after sufficient site-specific information is developed.

Executive Order 13112: Invasive Species

EO 13112 applies to all federal agencies whose actions may affect the status of invasive species and requires agencies to identify such actions and to the extent practicable and permitted by law (1) take actions specified in the order to address the problem consistent with their authorities and budgetary resources; and (2) not authorize, fund, or carry out actions that they believe are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless, “pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions.”

The Trustees do not believe that any of the projects for which this programmatic EIS/EIR represents final environmental review have the potential to cause or promote the introduction or spread of invasive species. For other projects requiring subsequent analysis and having the potential to affect the status of invasive species, the Trustees will consult with appropriate officials after sufficient site-specific information is developed.

Executive Order 13186: Protection of Migratory Birds

EO 13186, titled the Responsibilities of Federal Agencies to Protect Migratory Birds, requires federal agencies to avoid or minimize the effects of their actions on migratory birds, and, in some cases, to evaluate the effects of actions and plans on migratory birds during environmental analyses. The EO further directs federal agencies taking actions that have, or are likely to have, a measurable negative effect on migratory bird populations to develop and implement, within two years, a Memorandum of Understanding with the USFWS that shall promote the conservation of migratory bird populations.

None of the projects for which this programmatic EIS/EIR represents final environmental review have the potential to affect migratory birds. For other projects requiring subsequent analysis and having the potential to affect migratory species, the Trustees will consult with appropriate USFWS officials after sufficient site-specific information is developed.

Executive Order 12898: Environmental Justice

On February 11, 1994, President Clinton issued EO 12898, titled 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. The U.S. Environmental Protection Agency (EPA) and the Council on Environmental Quality 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 MSRP. Rather, MSRP actions that would restore fishing services would benefit subsistence fishers and in concert with the EPA's institutional controls program, would reduce exposures to contaminated fish that may currently be disproportionately affecting minority and low-income populations.

Environmental Justice further requires federal agencies to provide opportunities for community input in the NEPA process. The Trustees will make every effort to involve the affected community by providing notice to members of the public and access to related documents.

Information Quality Law, Public Law 106-554, Section 515

Information disseminated by federal agencies to the public after October 1, 2002, is subject to information quality guidelines developed by each agency pursuant to Section 515 of Public Law 106-554. These guidelines are intended to ensure and maximize the quality of the objectivity, utility, and integrity of such information. This Restoration Plan/EIS/EIR is an information product covered by the information quality guidelines established by NOAA and the Department of the Interior for this purpose. The quality of the information contained herein is consistent with these guidelines, as applicable.

8.2.2 State Statutes

California Environmental Quality Act, Pub. Res. Code 21000–21178.1

CEQA was adopted in 1970, and its basic purposes are to inform California governmental agencies and the public about the potentially significant effects of proposed activities, identify ways that environmental damage can be avoided or significantly reduced, prevent significant avoidable damage to the environment through adoption of feasible alternatives or mitigation measures, and to disclose the reasons for agency approval of a project resulting in significant environmental effects.

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 a discretionary action that is carried out, funded or authorized by an agency, and that has the potential to impact 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.

If the lead agency determines that the project is not exempt, then an Initial Study is generally prepared to determine whether the project may have a potentially significant effect on the environment. Based on the results of the Initial Study, the lead agency determines whether to prepare a Negative Declaration (i.e., the project will not result in significant adverse effects to the environment) or an EIR. Alternatively, the agency may proceed directly to the preparation of an EIR. Although the restoration program is not likely to have significant adverse environmental impacts, the Trustees have chosen to prepare an EIR because the program covers a broad range in types and locations of actions, some of which are still conceptual and which will need

subsequent environmental analysis. Thus, the Trustees have prepared a programmatic EIR that covers several specific actions (Table 6-1) and the MSRP effort as a whole that may later be incorporated by reference in subsequent CEQA analysis. The Trustees have integrated both NEPA and CEQA requirements into this Restoration Plan and programmatic EIS/EIR.

The list of agencies expected to use the EIR in their decision-making include, but are not necessarily limited to, the CSLC, the California Coastal Commission, the C DPR, the CDFG, the State Water Resources Control Board, the Department of Water Resources, the U.S. Army Corps of Engineers, the USFWS, NOAA, the NPS, the EPA, and local planning departments, boards, or commissions.

California Coastal Act, California Public Resources Code Sections 30000, et seq.

The California Coastal Act was enacted by the California State Legislature in 1976 to provide long-term protection of California's 1,100-mile coastline for the benefit of current and future generations. The Coastal Act created a partnership between the state (acting through the California Coastal Commission [Commission]) and local government (15 coastal counties and 58 cities) to manage the conservation and development of coastal resources through a comprehensive planning and regulatory program. New development in the Coastal Zone may require a permit from the Commission or the appropriate local government agency. The Commission also reviews and approves Local Coastal Programs, which are the basic planning tools used by local governments to guide development in the Coastal Zone.

For all of the California coast, except San Francisco Bay, the Commission implements the federal Coastal Zone Management Act of 1972 (in the San Francisco Bay area, the implementing agency is the San Francisco Bay Conservation and Development Commission). The Commission is responsible for reviewing proposed federal and federally authorized activities to assess their consistency with the approved state coastal management program. The Commission developed the California Coastal Management Program pursuant to the requirements of the federal Coastal Zone Management Act of 1972. After NOAA approved the California Coastal Management Program in 1977, all federal activities affecting Coastal Zone resources became subject to the Commission's regulatory jurisdiction. A federal agency must conduct its activities (including federal development projects, permits and licenses, and assistance to state and local governments) in a manner consistent with the California Coastal Management Program. The process established to implement this requirement is called a consistency determination for federal activities and development projects and a consistency certification for federal permits and licenses and federal support to state and local agencies.

The Trustees do not believe that the projects implemented by the MSRP will adversely affect California's Coastal Zone resources. However, the Trustees intend to seek the Commission's concurrence that their preferred alternative is consistent with California's federally approved Coastal Management Program.

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

Pursuant to the California Endangered Species Act (CESA) (California Fish and Game Code Sections 2050 et seq.), it is the policy of the State of California that state agencies should not approve projects as proposed that 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. However, if reasonable alternatives are infeasible, individual projects may be approved if appropriate mitigation and enhancement measures are provided.

Pursuant to the CESA, the Fish and Game Commission has established a list of threatened and endangered species based on criteria recommended by the California Department of Fish and Game. Section 2080 of the California Fish and Game Code prohibits "take" of any species that the Commission determines to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The CESA allows for take incidental to otherwise lawful development projects. The CESA emphasizes early consultation to avoid potential impacts to rare, endangered, or threatened species and to develop appropriate mitigation planning to offset project-caused losses of populations of listed species and their essential habitats.

Multiple threatened and endangered species occur in the study area for this Restoration Plan (see Tables 3.4-4 and 3.4-5). Several of the preferred projects target restoration of state-listed species, including the endangered bald eagle, peregrine falcon, California brown pelican, and marbled murrelet as well as the threatened Xantus's murrelet. Other listed species may be affected by proposed projects, such as the state-threatened island fox. For each project that is selected as preferred in the final Restoration Plan, the Trustees will evaluate the potential effects of the project on listed species and critical habitats. Based on this analysis, the Trustees will perform the appropriate level of consultation with the California Department of Fish and Game.

Marine Life Protection Act

In 1999, the California State Legislature found that the marine habitat and biological diversity in the state's ocean waters were threatened by coastal development, water pollution, and other human activities, and passed the Marine Life Protection Act (MLPA). The MLPA mandates that the state design and manage an improved network of marine protected areas to, among other things, protect marine life and habitats, marine ecosystems, and marine natural heritage.

Under the MLPA, the state is required to develop a master plan for the integrated management of existing and new reserves for the entire state. The development of the MLPA master plan was placed on hold by the State of California in January of 2004 due to lack of funding, but the program was revitalized later in 2004 through a combination of public and private funding. At a future date should the MLPA master plan propose creation of new Marine Protected Areas (MPAs) within the MSRP study area, the Trustees would seek to participate in planning efforts to ensure coordination with MSRP restoration projects and to optimize the potential benefits to injured resources and lost services.

Public Resources Code, Division 6, Sections 6001, et seq.

The Public Resources Code, Division 6, gives the CSLC jurisdiction and management authority over all ungranted tidelands, submerged lands, and the beds of navigable rivers, sloughs, lakes, etc. The CSLC has certain residual and review authority for tide and submerged lands legislatively granted in trust to local jurisdictions (Public Resources Code §6301 and §6306). All tide and submerged lands, granted or ungranted, as well as navigable rivers, sloughs, etc., are impressed with the common law public trust. A lease may be required from the CSLC if a restoration project is located on such lands.

8.2.3 Other Potentially Applicable Statutes and Regulations

Additional statutes may be applicable to Natural Resource Damage Assessment (NRDA) restoration planning activities. The statutes listed below, or their implementing regulations, may require permits from federal or state permitting authorities.

- National Park Act of August 19, 1916 (Organic Act), 16 U.S.C. 1, et seq.
- Archaeological Resources Protection Act, 16 U.S.C. 460, et seq.
- National Historic Preservation Act of 1966 as amended (16 U.S.C. 470-470t, 110)
- Executive Order 11514 – Protection and Enhancement of Environmental Quality
- Executive Order 11990 – Protection of Wetlands
- Executive Order 11991 – Relating to the Protection and Enhancement of Environmental Quality
- Porter-Cologne Water Quality Control Act (Porter-Cologne)

8.2.4 List of Potential Permits or Other Approvals

Many of the restoration actions described in this Restoration Plan require further development and will be subject to further regulatory requirements prior to implementation. Table 8-1 summarizes the further permitting and/or other environmental consultation or review requirements that the Trustees currently anticipate may be required for implementation of the various restoration actions.

**Table 8-1
List of Permits, Consultations, or Other Approvals That May Be Required for MSRP
Restoration Actions**

Restoration Actions	Additional NEPA or CEQA Review	Section 404 and/or Section 10 of CWA	CAA	CZMA	ESA	CESA	EFH	MMPA	MBTA	State Lands Commission Lease	Channel Islands Nat. Park Permit	National Marine Sanctuary Permit	Other: Local	Other: Navy	Extraterritorial Env. Requirements*
Fishing and Fish Habitat															
Construct artificial reefs and fishing access improvements	X	X	X	X	X	X	X			X			X		
Provide public information to restore lost fishing services													X		
Restore full tidal exchange wetlands	X	X	X	X	X	X				X					
Augment funds for implementing Marine Protected Areas in California															

**Table 8-1
List of Permits, Consultations, or Other Approvals That May Be Required for MSRP
Restoration Actions**

Restoration Actions	Additional NEPA or CEQA Review	Section 404 and/or Section 10 of CWA	CAA	CZMA	ESA	CESA	EFH	MMPA	MBTA	State Lands Commission Lease	Channel Islands Nat. Park Permit	National Marine Sanctuary Permit	Other: Local	Other: Navy	Extraterritorial Env. Requirements*
Bald Eagles															
Complete the NCI Bald Eagle Feasibility Study before deciding on further restoration actions					X	X					X				
Complete the NCI Bald Eagle Feasibility Study; regardless of its outcome, continue funding Santa Catalina Island Bald Eagle Program					X	X									
Peregrine Falcons															
Restore peregrine falcons to the Channel Islands	X				X									X	
Monitor the recovery of peregrine falcons on the Channel Islands															
Restore peregrine falcons to the Baja California Pacific Islands															X
Seabirds															
Restore seabirds to San Miguel Island	X			X	X	X	X	X	X		X	X			
Restore alcids to Santa Barbara Island	X				X	X					X				
Restore seabirds to San Nicolas Island	X				X	X								X	
Restore seabirds to Scorpion and Orizaba Rocks	X				X	X					X				
Restore seabirds to Baja California Pacific Islands															X
Create/enhance/protect California brown pelican roost habitat	X	X	X	X	X	X							X		

**Table 8-1
List of Permits, Consultations, or Other Approvals That May Be Required for MSRP
Restoration Actions**

Restoration Actions	Additional NEPA or CEQA Review	Section 404 and/or Section 10 of CWA	CAA	CZMA	ESA	CESA	EFH	MMPA	MBTA	State Lands Commission Lease	Channel Islands Nat. Park Permit	National Marine Sanctuary Permit	Other: Local	Other: Navy	Extraterritorial Env. Requirements*
Implement an entanglement reduction and outreach program to protect seabird populations													X		
Restore ashy storm-petrels to Anacapa Island	X				X	X					X				

*These projects would be implemented outside of the United States of America under the jurisdiction of another sovereign state (Mexico) and as such may be subject to applicable Mexican environmental requirements.

CAA = Clean Air Act

CEQA = California Environmental Policy Act

CESA = California Endangered Species Act

CWA = Clean Water Act

CZMA = Coastal Zone Management Act

EFH = essential fish habitat

ESA = Endangered Species Act

MBTA = Migratory Bird Treaty Act

MMPA = Marine Mammal Protection Act

NEPA = National Environmental Policy Act

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This section of the Montrose Settlements Restoration Program (MSRP) Final Restoration Plan and Programmatic Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) provides a record of the public comments received on the draft Restoration Plan and programmatic EIS/EIR and the responses to these comments prepared by the Natural Resource Trustees for the Montrose case (Trustees). The draft document underwent a 45-day public comment period extending from Friday, April 8, to Monday, May 23, 2005. During this time, the Trustees received many written comments, and accepted additional input at various public meetings held throughout the affected area.

The Trustees received many comments that spanned all aspects of the draft Restoration Plan and programmatic EIS/EIR. These public comments served to enhance the final version of the plan. A full copy of the written comments as well as the transcripts of the public meetings and the transcripts of telephone comments have been included in the MSRP Administrative Record and are available online at www.montroserestoration.gov.

The Trustees' responses to public comments have been organized according to common themes, beginning with responses to general comments about restoration planning and the document itself and followed by the responses to the comments regarding the specific natural resource categories. The responses are presented below.

9.1 GENERAL COMMENTS

9.1.1 Identity of the Montrose Settlements Restoration Program

Comment: Many reviewers mistook the Montrose Settlements Restoration Program for the Montrose Chemical Corporation.

Source(s): Multiple public reviewers

The Montrose Settlements Restoration Program is managed by a Natural Resource Trustee Council that consists of three federal and three state agencies (the National Oceanic and Atmospheric Administration, the U.S. Fish and Wildlife Service, the National Park Service, the California Department of Fish and Game, the California State Lands Commission, and the California State Department of Parks and Recreation). These government agencies are responsible for using the funds recovered from Montrose Chemical Corporation (Montrose) and other liable parties in judicial settlements to restore the natural resources injured by the DDTs and PCBs released to the Southern California Bight by Montrose and the other defendants. The Trustee Council (referred to as the Trustees throughout this document) created the MSRP as a temporary inter-agency unit to develop a plan for the restoration of the injured resources and to administer the settlement funds for that purpose.

The MSRP acts under the direction of the Trustees. The six government agencies that constitute the Trustees are not in any way affiliated with the Montrose Chemical Corporation or any of the other defendants in the litigation. Neither the Trustees nor the MSRP are responsible for the releases of the contaminants into the ocean or for the impacts to natural resources that resulted from those releases.

9.1.2 Noise Impacts

Comment: Abalone Cove Beach Park, the Portuguese Bend Co-op Preschool, and the Long Point Resort Hotel (under construction) should be listed as sensitive receptors in Coastal Reach 3.

Source(s): City of Rancho Palos Verdes

The Trustees have added these locations to the list of sensitive noise receptors included in Table 3.9-1.

9.1.3 Use of Restoration Funds for Site Cleanup

Comment: Restoration funds should be used to address the DDTs and PCBs that remain in the sediments off the coast of California. Several ideas on specific methods for cleaning up sediments were proposed.

Source(s): Multiple public reviewers

In general, the law (i.e., the Comprehensive Environmental Response, Compensation, and Liability Act [CERCLA]) assigns the responsibility for cleaning up hazardous substances to the U.S. Environmental Protection Agency (EPA) and state cleanup agencies. The settlements for the Montrose case specifically provide funds to the EPA and under certain circumstances to the California Department of Toxic Substances Control (DTSC) for this purpose. Thus, the EPA will conduct the cleanup actions (if any) to address the continued DDT and PCB contamination of sediments and will do so using funds that the settlements provide for this purpose.

The \$140.2 million recovered in settlements from the defendants in the Montrose case was divided in the following manner:

- \$66.25 million was awarded to EPA for response (cleanup) actions, which may include reducing human health risks via public education and outreach (“institutional controls”) and addressing the contaminated sediments offshore (“in-situ response”) (see Section 4.2.2 for a more detailed description of these programs). An additional \$10 million (“swing money”) was set aside in a special account that EPA may use to conduct any in situ response actions. These monies may become available to the Trustees in certain limited circumstances (described in Section 9.1.6).
- \$63.95 million was awarded to the Trustees to reimburse past costs and to restore injured natural resources and lost services.

Comment: Restoration funds should be used to address onshore contaminated areas, such as the Consolidated Slip

Source(s): J. Marquez

Although large amounts of DDTs and PCBs made their way into the marine environment through the wastewater outfalls at White Point, off the Palos Verdes Shelf, contaminants also entered the environment through runoff from the Montrose plant itself. That runoff flowed through storm drains into the Dominguez Channel and down to the area known as the Consolidated Slip. However, the legal settlements reached in 2001 covered only the offshore

areas of contamination and prohibit the use of settlement funds for response actions in the onshore areas such as the Consolidated Slip.

9.1.4 Restoration Timing/Coordination with EPA

Comment: The Trustees should wait to implement many of the restoration actions until the completion of EPA's site remediation work.

Source(s): Coastal Resources Associates, Inc.; T. Coops; J. Morton

Although any successful site remediation by the EPA is likely to enhance the benefits provided by the Trustees' restoration actions, none of the restoration ideas that passed the Tier 1 and Tier 2 evaluations are dependent on the results of the EPA's site remediation work. Given the time it is likely to take to complete the complex and difficult remediation work, the Trustees believe it is important not to delay implementation of those restoration actions that, if taken sooner, can restore injured resources and/or provide the benefits of those resources to the public.

9.1.5 Overall Allocation of Restoration Funds

Comment: Several reviewers questioned the proposed distribution of funding across the different restoration categories and actions. Some expressed the opinion that insufficient funds were allocated for specific injured resources such as bald eagles or fish habitat. Others stated that too much funding was provided for categories such as seabirds and fishing. Still others stated the opinion that the distribution of funding should take into account the geographic distribution of the contamination.

Source(s): Multiple public reviewers

The consent decrees for the Montrose case provided funding for restoration, but did not specify how the restoration funds should be allocated among the different resource categories. After considering the ongoing uncertainties identified in Section 4, the Trustees proposed a phased approach to implementation that provides for adaptive management (i.e., adjusting management actions as new information is gained through the planning and implementing of the actions).

Several other considerations also went into the Trustees' decision to allocate the first phase of restoration funding approximately equally between fishing and fish habitat restoration actions and seabird restoration actions. These considerations included (1) the estimated costs for the actions that are relatively specific in scope at this stage; (2) the scalability of other actions that are still conceptual (e.g., actions such as reef construction and wetlands restoration for which the size, number, and locations may be tailored to available budgets); and (3) the practical limitations on managing implementation of multiple restoration actions simultaneously in the same region. In light of these considerations, the Trustees concluded that the proposed mix of actions reflected in the alternatives represents a reasonable distribution of restoration funds for a first phase of implementation and that the phasing provides for future adjustment and adaptation as more information is gained.

The injuries from DDTs and PCBs were not limited to the localized sediment deposits. Contaminants were distributed throughout the Southern California Bight by fish and marine mammals carrying them in their bodies. Therefore, when considering geographic distribution, the

Trustees did not factor in proximity of restoration actions to the contaminated sediments, but rather gave consideration to the locations where natural resource injuries and lost services occurred, and the proximity of the different restoration actions to those sites of injuries and lost services (among other factors). See also Section 9.1.11.

9.1.6 Swing Money

Comment: Certain statements in the draft Restoration Plan have incorrectly characterized the way that the final consent decree provides for \$10 million in contingent funding, or "swing money," to be disbursed depending on the EPA's decision on in situ remediation of sediments.

Source(s): EPA

Paragraph 11.C of the final Montrose Consent Decree provides as follows:

In the event EPA makes a response action selection determination to not select any "in-situ" response action... then all funds retained in the Court Registry Account... shall be paid from the Court Registry Account to the Trustees.

The Trustees have reworded those sections of the text to reflect the above-quoted text of the final consent decree.

9.1.7 Past Natural Resource Damage Assessment and Litigation Costs

Comment: The Trustees should provide a description of how the \$35 million in past damage assessment costs were spent, and to what purpose. The Trustees should not use settlement funds for reimbursement of past damage assessment costs.

Source(s): Heal the Bay; Santa Monica Baykeeper; Pacific Seabird Group

The final consent decree states that settlement funds are to be used to "(1) reimburse past and future damage assessment costs, and (2) restore, replace, or acquire the equivalent of the injured natural resources and/or the services provided by such resources."

The Trustees' natural resource damage assessment included numerous studies to:

- Determine injuries across a wide range of resources
- Quantify those injuries
- Establish a pathway from the Montrose facility to those resources and injuries
- Determine the value of natural resource injuries and services lost
- Characterize the affected area
- Evaluate potential response actions to address the remaining contamination (before the EPA joined the case in the mid 1990s)

Table 9-1 provides a summary of the approximate costs that the Trustees have incurred throughout the Montrose damage assessment and litigation, including the costs of specific studies and general management.

**Table 9-1
Summary of Damage Assessment Costs for the Montrose Case**

Study or Action	Description	Approximate Cost
Sediment	To determine if the sea floor sediments were contaminated at a level that causes injury to biological resources.	\$750,000
Fish Reproduction	To determine if a significant difference in reproductive success can be measured between control fish and fish from the Southern California Bight.	\$2,100,000
Birds	To determine whether injuries to bird species in the Southern California Bight had been caused by and were continuing because of exposure to DDTs and/or PCBs.	\$2,000,000
Marine Mammals	To determine if exposure to DDTs and PCBs was causing injury to marine mammals in the Southern California Bight.	\$1,750,000
Pathways	To determine the pathway between the contaminant releases and the injured resources to evaluate whether the releases actually caused the natural resource injuries found.	\$750,000
Direct Use Value Studies	To collect general information about the way people use the natural resources of the Southern California Bight and specific data on the uses of the resources that were available.	\$500,000
Contingent Valuation Study	To determine the interim lost value associated with the injured resources.	\$7,600,000
Palos Verdes Shelf Characterization	To collect comprehensive information about the distribution of the effluent-affected sediment layer.	\$3,500,000
Palos Verdes Shelf Natural Recovery Estimation	To estimate the time needed for natural recovery of the Palos Verdes Shelf if no restoration or associated activities were undertaken.	\$3,500,000
Physical Remediation	To evaluate the technical feasibility for a range of sediment restoration approaches to accelerate the biological recovery of the system by removing or isolating the DDT- and/or PCB-laden sediments.	\$900,000
Biological Restoration	To develop key components of a Restoration and Compensation Determination Plan for use in natural resource restoration planning	\$300,000
General Case Management	General management and coordination functions associated with the damage assessment	\$2,100,000
Peer Review	To conduct independent peer review for each part of the damage assessment	\$600,000
Quality Assurance	To ensure that Principal Investigators specified and achieved the quality of data needed to conduct damage assessment studies.	\$1,200,000
Other agency costs	Costs necessary for planning, management, and implementation of damage assessment and litigation.	\$8,000,000
Approximate Total		\$35,000,000

Generally, the costs for conducting many damage assessments do not come from Congressional appropriations. Given the magnitude, geographic extent, and persistence of the contaminants of this case and the duration and contentiousness of the legal case itself, the \$35 million expended for the damage assessment and litigation in the Montrose case was deemed reasonably necessary. This amount falls within the range of the costs incurred for other large and complex damage

assessments, including the Cantara Loop train derailment (\$15–17 million) and the *EXXON Valdez* oil spill (\$108.3 million). The Trustees decided to cap reimbursement of their past costs at \$35 million, even though documented costs came to approximately \$36.3 million.

9.1.8 Outreach and Education

Comment: Outreach and education should be evaluated as a separate resource category for funding consideration and as a component of specific restoration actions.

Source(s): Palos Verdes Peninsula Land Conservancy; multiple public reviewers

Planning and implementing natural resource restoration in accordance with applicable federal and state laws requires public participation; therefore, it is appropriate that a portion of funding be applied to public outreach and education activities aimed at fulfilling this requirement. However, the Trustees did not believe that restoration ideas eliciting funds for general outreach and education should be included with specific proposals to fund “on-the-ground” restoration work, such as seabird social attraction or the construction of artificial reefs. The one exception was a targeted campaign aimed at providing greater information to anglers about fish contamination (“provide public information to restore lost fishing services”; see Appendix A2). The outreach and education project described in Appendix A2 is a means of restoring lost fishing opportunities (a per se injury under CERCLA) to anglers and thus is, in effect, on-the-ground restoration.

Other outreach and education ideas submitted outlined general programs to promote environmental stewardship across various audiences. The Trustees recognize the importance of outreach and education as a means of engaging the public in restoration in general and in the Montrose case in particular. After reviewing the outreach and education proposals from Tier 1, the Trustees have chosen to incorporate some aspects of those ideas into the “provide public information to restore lost fishing services” action (see Appendix A2 for details).

Most of the restoration actions that MSRP will undertake will include an outreach and education element within the scope of implementation. An MSRP outreach and education coordinator will oversee these aspects of the actions as well as general outreach and education on the Montrose case as a whole.

Comment: Money should be spent to educate the public about the human health consequences of DDTs and PCBs.

Source(s): T. Laura; M. Padian

Alternative 2 (preferred) in the Restoration Plan includes a component for providing public information regarding DDT and PCB contamination in fish caught in the affected area. The Trustees will continue to work closely with the EPA’s institutional controls program, including the Fish Contamination and Education Collaborative (FCEC), whose goal is to provide information to help educate the public about the health risks of consuming fish contaminated with DDTs and PCBs. Together with FCEC, MSRP designs and produces outreach materials, which FCEC then disseminates to a host of community-based organizations and health educators in the Southern California region. In addition, several county, state, and federal public health and environmental agencies have broader responsibilities to protect and inform the public on environmental health issues, including the general risks of exposures to DDTs and PCBs.

9.1.9 Research and Monitoring

Comment: Some reviewers submitted proposals for additional research and/or indicated that further monitoring was needed before implementing certain restoration actions, and requested that their suggested research/monitoring components be included in the Restoration Plan.

Source(s): Multiple public reviewers

The Trustees' goal is to maximize the amount of actual natural resource restoration that can be achieved through the Montrose settlements. In pursuing this goal, the Trustees recognize that a certain amount of additional study and project monitoring is required to ensure that the actions being taken are appropriate and effective. As is the case for general outreach and education proposals, the ideas for additional study and monitoring that were submitted to the Trustees were not evaluated alongside actual restoration actions, but have been retained for further consideration as restoration proceeds and potential needs for further information arise. Most of the specific research proposals that have been suggested are addressed in the responses to seabird restoration comments (see Section 9.5).

Regarding project monitoring, each restoration action that the Trustees implement will include a monitoring component, which will serve to enhance adaptive management of those actions (i.e., will identify successes/failures and adapt techniques accordingly) and measure the effectiveness of the restoration efforts.

9.1.10 Methodology for Analyzing Alternatives

Comment: The U.S. Department of the Interior's Title 43 Code of Federal Regulations (CFR) Part 11.82(d) "factors to consider when selecting the [restoration] alternative to pursue" should be more fully integrated into the project analysis methodology or more information should be provided on how the criteria used in the Restoration Plan were selected.

Source(s): EPA

The ten selection factors that the EPA identifies and how they are integrated into the six evaluation criteria of the Restoration Plan are described in Section 5.1.1. To address the EPA's comment, the Trustees have added language in the Restoration Plan to further clarify how the Title 43 CFR Part 11.82(d) "factors to consider" were integrated and adapted into the MSRP evaluation criteria (see Section 5.1.1). These evaluation criteria were developed with public input at workshops held in 2002 and 2003. All relevant considerations were incorporated into the evaluation criteria that the Trustees used for the Montrose case. In some cases the Part 11.82(d) factors were combined or reorganized into the six criteria to facilitate and improve the clarity of analysis. For instance, the Trustees incorporated two factors listed separately in Part 11.82(d), "relationship of the expected costs to the expected benefits" and "cost-effectiveness," into three evaluation criteria: "Resource Benefits," "Ecosystem Benefits," and "Cost."

Comment: The key assumptions of the Restoration Plan, such as the preference to use restoration funds for actions that are sustainable in nature, should be identified.

Source(s): EPA

The preference to use restoration funds for actions that are sustainable in nature is an outgrowth of two of the MSRP evaluation criteria. The “Resource Benefits” criterion includes consideration of the duration of the benefits and gives preference to actions having greater duration. The “Feasibility” criterion includes consideration of the degree of ongoing operation and maintenance needed to ensure that the action continues to produce the intended results and gives preference to actions requiring less or no long-term operation and maintenance.

Comment: The Restoration Plan should include an explanation as to why the potential for additional injury was not deemed significant for inclusion in the evaluation criteria.

Source(s): EPA

The potential for additional injury is a relevant consideration for the Restoration Plan. This factor is more fully described in Section 11.82(d) as, “Potential for additional injury resulting from the proposed action, including long-term and indirect impacts to the injured resources or other resources.” This factor was incorporated into the Trustees’ fifth criterion, “Environmental Acceptability,” in which consideration was given to the potential beneficial and adverse environmental effects of the restoration actions.

Table 9-2 illustrates how this and other Section 11.82(d) factors were incorporated into the MSRP evaluation criteria.

**Table 9-2
Relationship between MSRP Evaluation Criteria and the Evaluation Factors Listed in the Federal Natural Resource Damage Assessment Regulations (43 CFR Part 11.82[d])**

MSRP Evaluation Criteria	Factors Listed under 43 CFR Part 11.82(d) Incorporated into Corresponding MSRP Criteria
Nexus <ul style="list-style-type: none"> • Nature of action • Location 	Not listed
Feasibility <ul style="list-style-type: none"> • Technical feasibility • Potential institutional or administrative barriers to an action’s implementation • Degree of ongoing operation and maintenance needed to ensure intended results 	<ul style="list-style-type: none"> • Technical feasibility • Consistency with relevant state, federal or tribal policies and laws
Resource Benefits <ul style="list-style-type: none"> • Degree to which injured natural resource values and services are improved by the action • Degree to which benefits are measurable • Duration of benefits • Conservation status of resource(s) 	<ul style="list-style-type: none"> • Relationship of the expected costs of the proposed actions to the expected benefits from the restoration • Results of any planned or actual response actions • Natural recovery period • Ability of the resources to recover with or without

Table 9-2
Relationship between MSRP Evaluation Criteria and the Evaluation Factors Listed in the Federal Natural Resource Damage Assessment Regulations (43 CFR Part 11.82[d])

MSRP Evaluation Criteria	Factors Listed under 43 CFR Part 11.82(d) Incorporated into Corresponding MSRP Criteria
	alternative actions
Ecosystem Benefits <ul style="list-style-type: none"> • Degree to which action leads to sustainable improvements in broader ecological functions 	<ul style="list-style-type: none"> • Relationship of the expected costs of the proposed actions to the expected benefits from the restoration • Results of any planned or actual response actions • Natural recovery period • Ability of the resources to recover with or without alternative actions
Environmental Acceptability <ul style="list-style-type: none"> • Potential beneficial and adverse environmental effects 	<ul style="list-style-type: none"> • Potential human health and safety effects • Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
Cost <ul style="list-style-type: none"> • Includes possible partnerships 	<ul style="list-style-type: none"> • Relationship of the expected costs of the proposed actions to the expected benefits from the restoration • Cost-effectiveness

9.1.11 Tier 1 and Tier 2 Action Criteria: Nexus (Physical Proximity)

Comment: It is unclear how proximity to the site of impact was employed as a criterion for evaluating actions. A higher priority for funding should go to actions nearest the contaminated sediment.

Source(s): Palos Verdes Peninsula Land Conservancy; Catalina Island Conservancy; multiple public reviewers

In reviewing action ideas in the Tier 1 and Tier 2 evaluations, the Trustees considered the location of potential actions in relation to the location of injuries and lost services. Actions providing benefits in locations where resource injuries and service losses have occurred or are occurring were given the highest consideration. Although the contaminants at issue in this case entered the marine environment at the outfalls near White Point, impacts to injured natural resources and losses to the services those resources provide were documented across the Southern California Bight (see relevant responses for specific resource injuries in Sections 9.2 through 9.5, particularly Section 9.2.3).

Under the MSRP criteria, the preferred locations for restoration actions do not always equate to the geographic locations where the greatest sediment contamination still exists or locations where injuries to natural resources are ongoing, because the continuing contaminant exposures may prevent attainment of the intended restoration objectives. However, after considering the limitations resulting from ongoing contamination, the Trustees placed greater value on actions that are as close as feasible to the sites of the original injury and lost services.

Comment: Certain reviewers were concerned that a sediment “plume” of DDT extends southward near Catalina Island and questioned why no sediment samples were taken past the continental drop-off as well as why fish were not sampled around Catalina Island.

Source(s): Catalina Island Conservancy; J. Barelli

Sediments containing high loads of DDTs and PCBs do not extend to Santa Catalina Island. Sediments and fish have been sampled off of Santa Catalina Island (see the short summary of fish sampling in Section 9.2.3). Although it may be tempting to conclude that Santa Catalina Island is directly in the impact zone of effluent from the Los Angeles County Sanitation Districts (LACSD) outfall pipes, several factors prevented the majority of the contaminants from reaching the island. The DDT- and PCB-contaminated effluent that passed through the wastewater outfalls located on the Palos Verdes Shelf was released into the water column and was attached to particles that were transported by the prevailing currents until they were either consumed by fish or other pelagic biota or settled to the bottom and became part of the sediments.

The concentrations of DDTs and PCBs in the wastewater effluent and, correspondingly, in the ocean water column had dropped to near zero by the 1980s (see Figure 2-2). The distribution of contamination occurring in sediments today is to a large extent a function of the direction and distance that the contaminants were transported while they were in the water column in the 1940s to the 1970s. The U.S. Geological Survey (USGS) summary of sediment data, which was based on the data collected by LACSD, shows that the concentrations of DDTs and PCBs decline rapidly in the offshore southeast direction (i.e., toward Santa Catalina Island), whereas they decline much more slowly toward the northwest, into Santa Monica Bay. The USGS data summary suggests that the major trajectory of contaminant transport was to the northwest, away from the island (Lee et al. 2002). The USGS data summary also shows that surface contamination levels were nearly at background levels only 3 to 4 miles offshore of White Point. It is therefore unlikely that significant levels of contaminants occur in the sediments adjacent to Santa Catalina Island, 17 miles away from the most contaminated sediments.

Comment: Restoration funds are most appropriately used on and around Catalina Island, the area “hardest hit” by the contaminants of the Montrose case.

Source(s): Catalina Island Conservancy; multiple public reviewers

Although the Trustees found that the bald eagles and peregrine falcons on Santa Catalina Island have been injured by the contaminants of the Montrose case, the Trustees also found injuries and losses of services caused by the Montrose contamination throughout the Southern California Bight. Bald eagles and peregrine falcons historically nested not only on Santa Catalina Island but throughout the Channel Islands and had been extirpated throughout the Channel Islands by the 1960s. Because injuries from the contaminants of the Montrose case were seen throughout the Southern California Bight, the Trustees have concluded that Santa Catalina Island is not the hardest hit location.

Although Santa Catalina Island is closer than the other Channel Islands to the primary source of the DDTs and PCBs from Montrose, studies of the fate and transport of the contamination issuing from the LACSD ocean outfalls, including studies of bottom currents and sediment transport, demonstrate a prevalent direction of physical transport of the contaminants to the north and west rather than to the south, in the direction of Santa Catalina Island (see also Section 2.2).

The biological injuries from the Montrose contaminants are largely a result of uptake, bio-magnification, and transport of the chemicals throughout the food web of the Southern California Bight. Thus, many of the injuries stemming from the DDTs and PCBs of this case occurred and continue to occur over a wide geographic range.

The consent decrees for the Montrose case did not specify that settlement monies were to be targeted at any specific location. Rather, the final consent decree stated that,

The Trustees will use the damages for restoration of injured natural resources, including bald eagles, peregrine falcons and other marine birds, fish and the habitats upon which they depend, as well as providing for implementation of restoration projects intended to compensate the public for lost use of natural resources.

To the extent that the Trustees have selected specific sites for restoration, the Trustees have selected the sites that they consider will have the greatest benefit to the injured natural resources and lost services. For example, in the case of lost fishing services, the Trustees will give priority to those mainland coastal locations that continue to be affected by fishing advisories caused by the contaminants of the Montrose case. The Trustees seek to restore bald eagles to their historical territories throughout the Channel Islands and believe that the best prospect for attaining this goal at present rests in establishing breeding bald eagles on the Northern Channel Islands (with the awareness of uncertainties that may require reconsideration of all bald eagle restoration options when the current Northern Channel Island bald eagle studies are concluded).

Comment: The Trustees gave preference to actions in the Northern Channel Islands (most of which are under National Park Service jurisdiction) because of ownership and/or jurisdictional considerations rather than on the basis of explicit evaluation criteria.

Source(s): Catalina Island Conservancy; multiple public reviewers

The overall evaluation of potential restoration actions considered feasibility, including any potential regulatory requirements or other institutional barriers to implementation. However, these factors did not ultimately determine which actions would or would not be implemented; the Trustees also considered biological reasons for pursuing restoration actions on the Northern Channel Islands. The National Park Service (NPS) is only one of the six Trustee agencies for the Montrose case; decisions regarding which actions will or will not be implemented are made unanimously by all of the Trustee agencies.

The bald eagle restoration work as outlined in this plan will focus on the Northern Channel Islands, at least until the results of the Northern Channel Island (NCI) Bald Eagle Feasibility Study are known. The Trustees believe, based on the data evaluated to date, that bald eagle reintroduction in the Northern Channel Islands has a higher likelihood of success for both technical and biological reasons. The ownership of the Northern Channel Islands is incidental to this conclusion. However, even though most of the Northern Channel Islands are under the jurisdiction of the NPS, the majority (76 percent) of Santa Cruz Island (where the NCI Bald Eagle Feasibility Study is actually being conducted) is managed by The Nature Conservancy. Further discussion of the bald eagle restoration evaluation is found in Section 9.3.

Also, many of the other fish and fish habitat, peregrine falcon, and seabird restoration actions will be implemented in areas other than the Northern Channel Islands. Reef construction, the provision of public information to restore lost fishing services, the restoration of full tidal

exchange wetlands, and two seabird actions that may be implemented in Phase 2 (depending on funding availability) will be implemented on Southern California mainland areas not managed by the NPS. In addition, peregrine falcon monitoring will address all of the Channel Islands.

9.1.12 Tier 1 and Tier 2 Action Criteria: Benefits (to the Public)

Comment: *Certain reviewers felt that the Trustees should give greater weight to human use benefits as a component of the evaluation, and cited the greater degree of human use benefits from bald eagles on Catalina Island, which is more heavily visited than other Channel Islands. Other reviewers expressed concerns that the benefits of some of the actions included in the Trustees' preferred alternative would not be realized in areas that could be appreciated by Californians.*

Source(s): *Catalina Island Conservancy; multiple public reviewers*

The human use services provided by natural resources, such as the viewing of bald eagles and the recreational and other public uses provided by fish, are important aspects to consider in evaluating the resource benefits of a restoration action. Non-use services are likewise a consideration in evaluating the benefits of actions. One example of non-use services is the value the public places on the awareness that natural resources such as bald eagles are thriving and being protected in places where they had been injured in the past, even if people do not view or otherwise use the resources. Although the "Resource Benefits" criterion in the Restoration Plan does not distinguish between public use and non-use benefits, the Trustees considered these benefits (in addition to biological and other benefits) in their evaluation of actions during the restoration planning process.

The public comments received on the draft Restoration Plan indicated that there is substantial public interest in and exceptional human use and non-use value ascribed to bald eagle restoration. The Trustees have modified the bald eagle restoration provisions in Alternative 2 (the preferred alternative) in response to these comments, reserving funds exclusively for bald eagle restoration and providing for future consideration of additional bald eagle restoration on Santa Catalina Island after the results of ongoing studies are known, as described in more detail in Section 9.3.

9.1.13 Tier 1 and Tier 2 Action Criteria: Environmental Acceptability (Cumulative Impacts)

Comment: *The cumulative impacts analysis should be expanded to include any known projects or other actions within the Southern California Bight and associated area that may adversely impact injured resources.*

Source(s): *EPA*

The cumulative impacts analysis in Section 7 has been revised and expanded to address this comment.

9.1.14 Impact Analyses, Including Impacts to Threatened and Endangered Species

Comment: The Restoration Plan should include information regarding the direct and indirect impacts of the project alternatives on key endangered species, as well as an expanded impact analysis of the projects and alternatives to make more explicit the cause-and-effect relationships among affected species.

Source(s): EPA

The analyses of the actions in Appendices A–D and the actions and alternatives in Sections 6 and 7 have been revised to more clearly describe the potential beneficial and adverse effects of the evaluated restoration actions in general and their effects on threatened and endangered species in particular. More detail has also been provided to explain how the MSRP evaluation criteria led to the selection of the preferred alternative.

9.1.15 Potential Impacts to the Ventura River Watershed

Comment: The project site lies in the Ventura River watershed. Please provide information on how it will change the loading of pollutants into the watershed.

Source(s): California Regional Water Quality Control Board, Los Angeles Region

None of the actions planned for the MSRP will occur in the Ventura River Watershed.

9.1.16 Implementation of Actions Not Passed to the Tier 2 Evaluation

Comment: The current preparation of a Natural Communities Conservation Plan and the concurrent acquisition of open space may indirectly implement two ideas from Tier 1.

Source(s): City of Rancho Palos Verdes; Palos Verdes Peninsula Land Conservancy

The two actions that may be indirectly implemented are (1) restore overgrazed seashore in Abalone Cove and (2) acquire and enhance peregrine falcon habitat on the Palos Verdes Peninsula. The first idea did not pass to Tier 2 evaluation in this Restoration Plan due to Trustee concerns about technical and regulatory feasibility of the idea. The second idea did not pass to Tier 2 mainly due to the successful recovery of peregrine falcons on the mainland. Although these two ideas will not be implemented as a part of this Restoration Plan, the Trustees support the implementation of these actions by other groups.

9.1.17 General Comments on Restoration Alternatives

Comment: The three alternatives presented in the Restoration Plan do not seem to be representative of all of the restoration options available.

Source(s): FCEC

Under the National Environmental Policy Act (NEPA), the California Environmental Quality Act (CEQA), and the federal Natural Resource Damage Assessment (NRDA) regulations, the Trustees must consider a range of possible courses of action to undertake restoration, but are not required to consider every possible option. In this Restoration Plan, the Trustees presented a No Action Alternative (a required natural recovery alternative with minimum management actions)

and two comprehensive restoration alternatives, one of which represented the Trustees' preferred course of action.

In the preparation of the draft Restoration Plan, the Trustees noted that the last two alternatives presented in the plan were structured to facilitate review of the plan and had been assembled to illustrate the trade-offs involved in emphasizing different restoration priorities. The alternatives were in no way meant to be inclusive of all of the restoration options available. The draft Restoration Plan explained that comments could be submitted either on the alternatives as assembled in the plan, on individual actions, on the allocation of funding, or on any other aspect of the plan. The public comment period provided an opportunity for the public to react to the alternatives as presented, give feedback on whether they support the Trustees' preferred alternative as presented, suggest modifications, support a different alternative, recommend an entirely new alternative, etc.

In response to the numerous and wide range of comments received from individuals and organizations, the Trustees have retained the basic framework presented in Alternatives 2 and 3, but have modified the preferred alternative (Alternative 2) (see the Executive Summary and Section 7).

Comment: The restoration alternatives would be better characterized as "two comprehensive restoration plan alternatives and a no action alternative," rather than the stated "three comprehensive restoration alternatives."

Source(s): EPA

The Trustees agree and have incorporated this characterization throughout the document.

9.1.18 Comments on Applicable Laws and Regulations

Comment: Section 8 should be amended to include information regarding the requirements of the Federal Clean Air act and obligations for general conformity determination, as well as details on Mexican laws and regulations, including applicable environmental review requirements.

Source(s): EPA

Section 8.2.1 has been modified to include the requested information regarding the federal Clean Air Act. Details on Mexican laws and regulations have not been included.

9.2 FISHING AND FISH HABITAT COMMENTS

9.2.1 Flexibility of Funding Within the Fishing and Fish Habitat Category

Comment: It is difficult to evaluate how funds should be allocated within the overall fishing and fish habitat category across different actions; the Trustees should keep funding flexible within this category.

Source(s): R. Ambrose

The Trustees intend to incorporate some flexibility in how funds are allocated among fishing and fish habitat actions. Further, the Trustees have specifically adopted a phased approach to the

restoration program to allow for adaptive management and to give the public a chance to revisit the work as implementation progresses.

9.2.2 Reconsideration of Tier 1 Idea

Comment: The Trustees should reconsider the White Croaker Commercial Market Certification Program idea previously submitted but which did not pass the Tier 1 evaluation.

Source(s): Heal the Bay; Santa Monica Baykeeper

The Trustees previously evaluated the idea of creating a white croaker certification program to allow certified uncontaminated white croaker to be marketed, but the idea did not pass the Tier 1 evaluation. The objective of this proposed idea was to restore commercial fishing operations impacted by loss of demand for this species due in part to public presumptions that this species is contaminated. The primary reasons that this idea was not further evaluated were the significant start-up and long-term commitments required, such as the extensive monitoring of white croaker contamination levels, and the question of which agencies could certify “clean” white croaker and under what authority. The full Tier 1 evaluation of this idea can be found in the Record of Initial Restoration Ideas and Tier 1 Evaluation, which is available as part of the MSRP Administrative Record.

The current MSRP/EPA fish contamination survey extended the geographic range of sampling for white croaker up to Ventura, where a previously existing white croaker commercial fishery has been shut down due to loss of demand. Part of the justification for expanding sampling was to determine if Ventura-caught white croaker were in fact “clean.” The Trustees will further explore the feasibility of certifying seafood as “clean” as part of the next phase of restoration if the results from the fish contamination survey indicate that there may be some promise in this idea.

9.2.3 New Fishing and Fish Habitat Restoration Ideas

Comment: Catalina Island, the island hardest hit by contaminants and most visited, should be funded for its fisheries and ecosystems consistent with similar activities on islands farther away.

Source(s): Catalina Island Conservancy; USC Wrigley Institute for Environmental Studies; multiple public reviewers

The Trustees have carefully examined evidence of DDT/PCB impacts on Santa Catalina Island’s fish and fishing resources and have concluded that these impacts are not only substantially lower on that island than in ocean waters near the Southern California mainland, but also not appreciably greater than the impacts in the waters surrounding the other Channel Islands. This conclusion is supported by several lines of evidence, including data from several surveys of a variety of components of the food web. The data are summarized below.

Mussels collected off of Santa Catalina Island and other Channel Islands are orders of magnitude lower in contamination than those collected off of Palos Verdes Shelf, Santa Monica Bay, and San Pedro Bay. Also, there is no difference in contamination levels between the north and the south sides of Santa Catalina Island and between Santa Catalina Island and locations in the

Northern Channel Islands (Figure 9-1). The Channel Island area with the most highly contaminated shellfish was San Miguel Island, which is part of the Northern Channel Islands.

Human health is not at risk for those fishing near Santa Catalina Island or any of the other Channel Islands. No fish consumption advisories exist for any species of fish on any of the Channel Islands, including Santa Catalina Island. Multiple fish contaminant surveys included Santa Catalina Island and targeted a variety of fishes, and none of these surveys resulted in evidence supporting the need for fish consumption advisories. Samples from kelp bass collected off of the coast of Santa Catalina Island in the late 1980s showed DDT concentrations that ranged from 2–14 parts per billion (ppb), and PCBs were not detected in these fish. The concentrations of PCBs and DDTs found in these fish were well below the state trigger level of 100 ppb and also well below the levels that the LACSD found in the kelp bass it collected in 1983 from the Northern Channel Islands. These samples contained DDT concentrations of 17–60 ppb (average of 34.2 ppb) and PCB concentration of 3–63 ppb (average of 15.9 ppb). To provide perspective, kelp bass collected off Palos Verdes in 2004 contained DDT concentrations ranging from 20–1,020 ppb (average of 203 ppb) and PCB concentrations ranging from 20–240 ppb (average of 88 ppb), still much higher than the concentrations found in fish collected 20 years earlier off the Channel Islands.

Further, a 1998 survey throughout the Southern California Bight (referred to as the Bight '98 data) (Southern California Coastal Water Research Project 2004) collected soft-bottom-dwelling flatfishes from all around Santa Monica Bay, Palos Verdes, San Pedro Bay, and Santa Catalina Island (Figure 9-2). This survey found that the contaminant concentrations in the fish collected from the shore-based areas were orders of magnitude higher than in the fish collected off the island. If direct transport of DDTs and PCBs had occurred from the LACSD outfalls at White Point toward Santa Catalina Island, the north side of the island would be characterized by more contaminated fish than the south side. However, the Bight '98 data do not support this conclusion; on the contrary, low levels of contamination exist in fish taken from both sides of Santa Catalina Island. When considered together, these data suggest that (1) Santa Catalina Island was much less impacted than mainland areas similarly distant from the outfall pipes (e.g., central Santa Monica Bay) and (2) Santa Catalina Island was impacted by DDTs and PCBs to the same degree as the Northern Channel Islands.

In addition to the LACSD outfalls, which were the principal source of DDT and PCB contamination in the Southern California marine region, barrels of acid sludge containing DDTs were dumped into the San Pedro Basin, which is closer to Santa Catalina Island than the LACSD outfalls, up until 1961 (see page 2-3 and Figure 2-3). The dumping occurred in much deeper water (a depth of approximately 2,500 feet) than the depth of the LACSD outfalls (about 200 feet). Despite this other potential source of DDT contamination, concentrations of DDTs in fish and mussels from samples taken in the 1980s and 1990s (see Figures 9-1 and 9-2) indicate that these receptors are still significantly less contaminated than those sampled along the Southern California mainland coast.

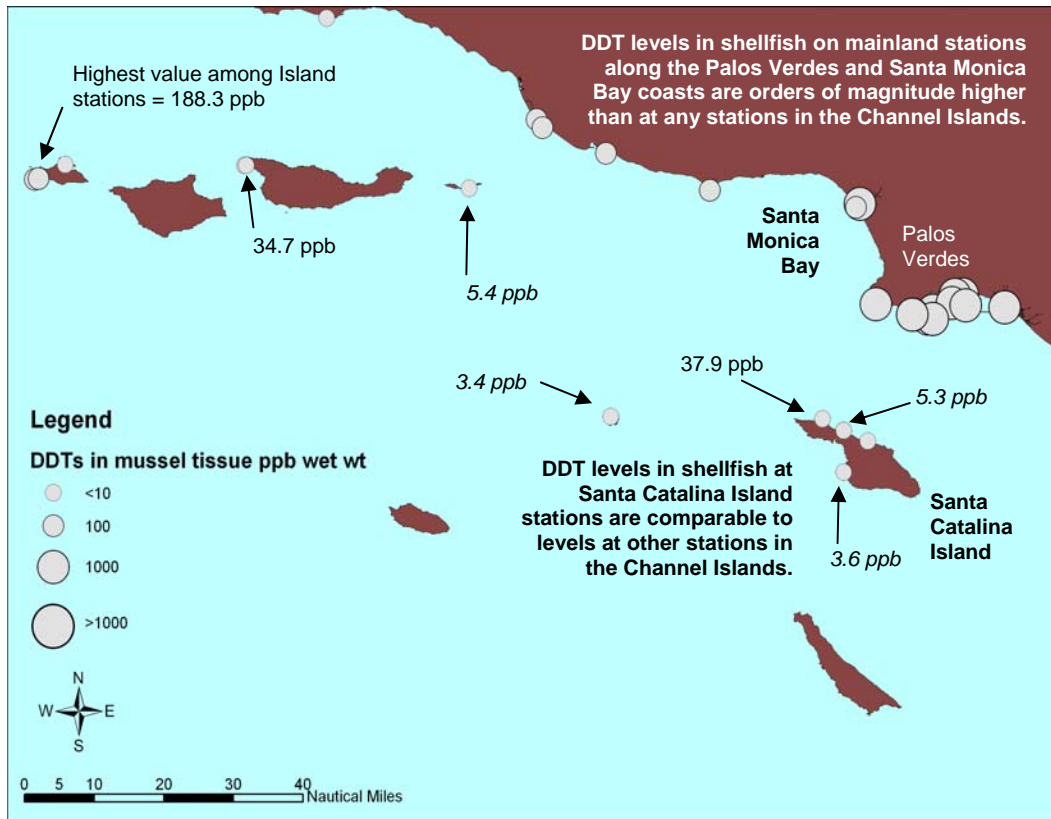
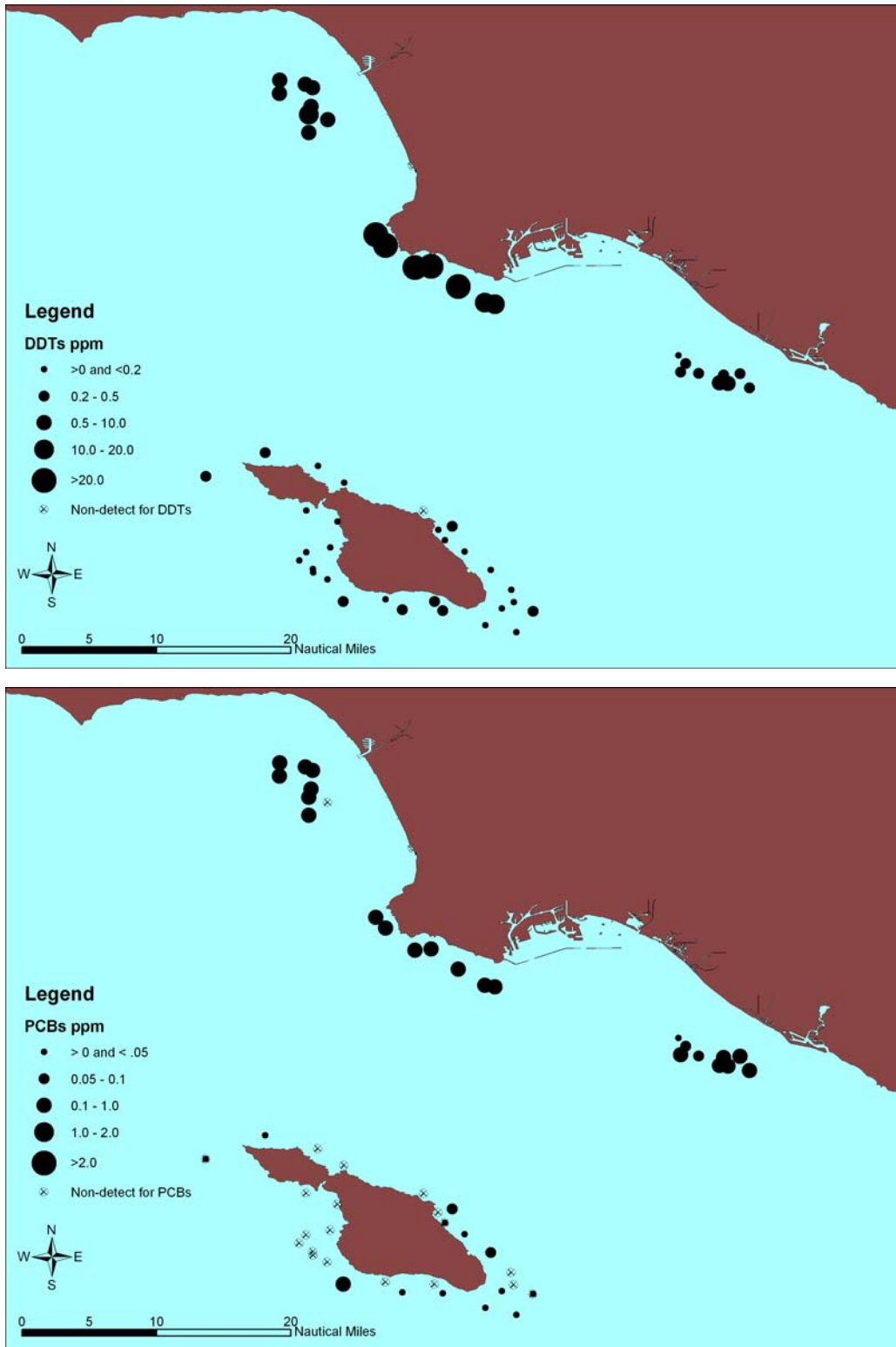


Figure 9-1. Results from the 1981 state mussel watch survey and the 1988 federal mussel watch survey, both of which examined relative contamination levels in shellfish in various locations along the Southern California coast and throughout the Channel Islands.



Source: SCCWRP 1998.

Figure 9-2. Concentrations of DDTs (top panel) and PCBs (bottom panel) in benthic soft-bottom fishes collected in Santa Monica Bay, Palos Verdes Shelf, San Pedro Bay, and Catalina Island.

Despite the fact that fish surrounding Santa Catalina Island are not highly contaminated, bald eagles on the island continue to experience reproductive impairment. In addition to eating fish, bald eagles also consume other birds and scavenge from the marine mammal carcasses that wash ashore. Observations and modeling of the dietary composition of the Santa Catalina Island bald eagles have shown that the vast majority of their exposure to DDTs and PCBs comes from the marine mammal carcasses and seabird component of their diet; the marine mammals and seabirds forage over a much broader marine region and accumulate high amounts of DDTs and PCBs in their tissues not from consumption of fish near the island, but from other more highly contaminated areas.

Comment: The Trustees should implement projects to reduce entrainment of fish in power plant cooling systems, either by relocating intakes from sensitive areas or by alternative cooling technologies that don't require once-through cooling.

Source(s): Heal the Bay; Santa Monica Baykeeper

This idea was not among those evaluated in the original evaluation process. Evaluating this idea would require an investigation of how local power plants and other major cooling water users intend to respond to the Clean Water Act Section 316(b) requirements recently released by the EPA. Any response would occur as permits come up for renewal, many of which are scheduled in the next 5 to 10 years. This idea will therefore be investigated during the first phase of restoration and considered for the second phase.

Power plants will be required to drastically reduce both entrainment and impingement to comply with the new Section 316(b) permit requirements. The Trustees would not fund projects that simply bring industrial facilities into compliance with the new Section 316(b) standards, as this is the responsibility of each permittee. However, the Trustees may examine opportunities for funding projects that significantly decrease impingement or entrainment beyond the level required by permit. This evaluation would only examine funding the portion of an action that is in excess of the cost of compliance.

Comment: The Trustees should create a Marine Protected Area on the Palos Verdes Shelf where fish contamination levels are high, perhaps in combination with one of the reef projects. Such an MPA would have greater nexus to the case than the Channel Islands MPAs. It makes little sense to leave onshore areas near the site of contamination open to fishing when "1) there are fish consumption advisories due to cancer risks, 2) the area is closed to commercial fishing for white croaker, and 3) artificial reefs are being created to restore lost fishing services."

Source(s): Heal the Bay; Santa Monica Baykeeper

Although creating a marine reserve on the Palos Verdes Shelf within the zone of highest fish contamination may be a method for protecting human health, it unfortunately does not serve the objective of restoring lost fishing services. Although a commercial catch ban is in effect for white croaker for the Palos Verdes Shelf, there is no indication that the contamination levels in other fish species warrant expanding the commercial catch ban or prohibiting fishing altogether. Many migratory, reef, and pelagic species are currently not limited by advisories even in the area of highest contamination.

Separate from the objective of restoring lost fishing services, the restoration of fish and the habitats on which they depend is another of the uses for settlement funds identified in the final consent decree. The Trustees have evaluated ways of increasing fish production in the Southern California Bight, but with a focus on increasing production in areas that are not contaminated, thereby increasing the proportion of “clean” fish in the bight. Marine Protected Areas (MPAs) have been shown to be an effective mechanism for increasing fish production within their boundaries and are a potential means for achieving the Trustees’ fish habitat restoration objective. However, a carefully planned network of MPAs is more likely to be effective at increasing the sustainability of fishing than an individual, isolated MPAs developed separately and for varying purposes. As a result, the Trustees have opted to contribute to the implementation of such a network of MPAs rather than proposing to establish independent MPAs that are not designed to complement the broader effort.

The California State Marine Life Protection Act is in the process of developing a unified and interconnected network of MPAs that will ultimately extend throughout the California coastline. Information obtained from each phase of implementation will be used to refine the design of and the justification for the MPAs established in subsequent phases. If successful, this network of MPAs will contribute to fish production in the Southern California Bight. However, the critical element for determining the location, shape, and size of an MPA, as well as justifying its implementation to the public, is sound evidence resulting from the monitoring of existing MPAs. The Trustees consider contributing critical funding to the evaluation and enforcement of the Channel Island MPAs to be both fish habitat restoration in the Channel Islands as well as a contribution to the evaluation of the effectiveness of MPAs throughout California.

Comment: The Trustees should establish a saltwater fishery to reintroduce fresh, clean saltwater fish back into the ocean near the proposed artificial reefs.

Source(s): J. Marquez

Several similar ideas for stock enhancement were put forward during the scoping process and evaluated during the Tier 1 Evaluation. These included ideas to supplement nearshore fisheries in contaminated areas with clean, hatchery-raised fish and ideas for spotted sand bass, giant sea bass, and white abalone hatchery programs. Such ideas, however, would offer limited sustainability due to their high and long-term operational and maintenance costs. Also, the effectiveness of actions using captivity-reared fish to increase the availability of popular sport fishes typically lower in contamination is uncertain for marine species. For these reasons, stock enhancement ideas were not carried forward to the Tier 2 evaluation.

9.2.4 Comments on “Construct Artificial Reefs and Fishing Access Improvements”

Comment: There is a lack of specificity pertaining to the number, size, material, design and location of proposed artificial reefs.

Source(s): Heal the Bay; Santa Monica Baykeeper

The Restoration Plan contains information pertaining to the number, material, and design of reefs proposed in the reef restoration action. The document specifically states the intent to construct two to three reefs during the first phase of restoration and that the materials used would comply with the standards established by the California Department of Fish and Game Artificial Reef

Program. Numerous details are also provided regarding the design elements that would be considered when implementing specific reef projects (see Appendix A1).

Appendix A1 indicates that the sizes and locations of reef projects will be determined through an iterative process that will begin with the results of the current MSRP/EPA fish contamination survey. However, specific reef sites will likely require follow-up environmental sampling prior to implementation. Each of these reef projects will include site-specific environmental review and public comment. For purposes of this Restoration Plan, the Trustees have provided a detailed overview of the reef approach to restoration. It would not be possible to evaluate specific locations fully, even if the current sampling data were available.

Comment: The Trustees should not finalize fishing and fish habitat restoration actions until the results of the MSRP/EPA fish contamination survey are known; if fish monitoring data find that reef fish are as contaminated as soft-bottom fish, the reef restoration measure would not be effective. The Trustees should incorporate the final fish contamination data into the Restoration Plan.

Source(s): EPA

The fish contamination data currently being generated are extremely unlikely to find that reef fish are as contaminated as soft-bottom fish. The Trustees have thoroughly reviewed the Palos Verdes shelf fish contamination monitoring data from the past decade. These data include both soft-bottom and reef species; the data have consistently shown reef species to be orders of magnitude lower in DDTs and PCBs than soft-bottom species. The value of the current monitoring data is not to confirm that the reef restoration action will be effective, but rather to refine the areas where it will be most effective. Thus, for purposes of describing the reef restoration concept, it is unnecessary to delay other restoration activities while the fish contaminant survey data are finalized, validated, and reviewed by the California Office of Environmental Health Hazard Assessment (OEHHA) to generate updated fish consumption advisories.

Comment: Constructed reefs would be an effective means of attracting less contaminated fish, although one reviewer felt that the amount of funding allotted is inadequate.

Source(s): Office of Environmental Health Hazard Assessment; R. Ambrose

The Trustees recognize that the current allocation of funds to reef restoration projects is limited. However, the Trustees believe that sufficient funds have been allocated to achieve the Phase 1 restoration goal of initiating two to three reef projects. Further allocations to reef restoration projects will be considered for the next phase of the restoration. Reef construction will be adaptive (i.e., the monitoring of the results of early work will help guide subsequent work). The degree of additional funding will depend on the observed effectiveness of the projects in Phase 1.

Comment: Placing reefs in contaminated areas would only expand the dispersal of the DDTs to new animal and plant species, and more fishermen and fish eaters.

Source(s): M. Padian

The goal of constructing artificial reefs and fishing access improvements is to restore lost fishing services by changing the species composition of fish in selected fishing areas. The premise of this restoration action is that the fish, particularly white croaker, that are associated with soft-

bottom habitats feed on benthic organisms from the contaminated sediments and are consequently the most highly contaminated species. In contrast, fish associated with hard-bottom or pelagic habitats feed on organisms that are either living in the water column or attached to hard substrate and are consequently less contaminated.

The construction of a reef is likely to change the types of fish in the area because soft-bottom species do not typically inhabit reef habitats (Allen 1999). The primary benefit of this action will be to displace these highly contaminated, soft-bottom fishes with water-column-feeding and hard-bottom species, which tend to be lower in contamination. Building reefs will also provide ecosystem benefits by increasing the production of fish whose tissues contain lower concentrations of contaminants (Dixon and Schroeter 1998).

Comment: Any future nearshore artificial reef or fishing access projects proposed along the base of the Palos Verdes coastal bluffs should be carefully designed to address the potential to trigger or exacerbate landslide movement.

Source(s): City of Rancho Palos Verdes

The Trustees intend to evaluate all potential adverse impacts of reef construction as development progresses. This evaluation will be applied on a site-specific basis and will be covered by separate environmental impact documents for each reef project that will be subject to public review and comment. The Trustees will include local authorities and the public in all aspects of reef location, design, and construction.

Comment: Any reef projects proposed near the Palos Verdes Shelf should address the potential of LA County Sanitation Department's current and proposed drainage pipes, which are still distributing DDTs and PCBs.

Source(s): J. Marquez

Monitoring of the current wastewater discharge from the LACSD White Point outfalls indicates that the levels of these contaminants are now almost undetectable. The Trustees will, however, coordinate all reef-building activities with LACSD to prevent any conflicts that may exist between proposed reef projects and the impact or function of existing or planned outfalls.

Comment: Fishing access improvements do not qualify as restoration for injuries to natural resources. Although pier improvements would enhance the public's fishing experience, they would not provide any restoration to the marine environment.

Source(s): Heal the Bay; Santa Monica Baykeeper

Fishing access improvements address the loss of natural resource services resulting from fish consumption advisories, which impact the public's use and enjoyment of the resource. In addition, fish consumption advisories in the target area are most limiting on species of fish commonly caught from piers, due to the predominance of soft-bottom habitats adjacent to the piers. Thus, pier anglers are disproportionately affected by fish consumption advisories as compared to boat-mode anglers.

Reef construction would restore lost fishing services (and, more broadly, restore fish and the habitat on which they depend) by displacing the more highly contaminated soft-bottom species of fish away from the piers and replacing them with less-contaminated reef species. Providing

for improvements to fishing amenities at fishing sites along with fish habitat manipulation in proximity to these fishing sites offers additional compensatory restoration for past losses of fishing services. We have modified the text in the detailed description of this action (Appendix A1) to include this clarification.

Comment: Support the concept of providing fishing access improvements.

Source(s): Office of Environmental Health Hazard Assessment (OEHHA)

Comment noted.

9.2.5 Comments on "Provide Public Information to Restore Lost Fishing Services"

Comment: Although public outreach is important, it is more appropriately addressed through the existing institutional controls program administered by EPA and its partners, and implementation of such a program by MSRP would lead to a redundancy in efforts. Another reviewer felt that the funds set aside for such outreach should instead be combined with the \$500,000 to implement MPAs.

Source(s): Heal the Bay; Santa Monica Baykeeper; C. Broussard

The Trustees agree that public outreach is a critical component of the Montrose settlements; however, these comments reflect a misunderstanding of the nature of the injury that MSRP outreach would be designed to restore (i.e., lost fishing opportunities/enjoyment). The institutional controls program administered by the EPA through the FCEC has brought together a network of community-based organizations (CBOs) and other partners. This network creates a forum for distributing a common message regarding contaminants in fish to those that are likely to be exposed to high body burdens of DDTs and PCBs as a result of consuming locally caught fish (e.g., local subsistence anglers).

The outreach objectives of the Trustees are different. The EPA has been an effective leader in bringing partners together and generating a common message that clearly identifies how anglers can avoid exposures to PCBs and DDTs in fish, but the emphasis has been on avoidance rather than on restoration of lost fishing services. To provide anglers with alternatives to lost fishing opportunities, MSRP must have knowledge of contaminant levels in fishes that are not included in fish consumption advisories, including knowledge of other contaminants (principally mercury) that are likely to limit consumption. (The EPA has determined that it cannot fund mercury analyses for this case.) MSRP must also consider the ecological and life-history differences between species of fish and how these differences influence contaminant levels in the fish. These ecological and life-history differences go beyond the general, and at times inaccurate, presumption that higher trophic levels and larger fish are more contaminated and include factors such as home range, migratory behavior, foraging mode, and habitat preferences. Because these considerations stem from the fact that fish are a living marine resource, messages related to the restoration of lost fish services are most appropriately generated by resource management agencies having such expertise.

The Trustees will work closely with the EPA and other FCEC partners to develop a cohesive set of outreach and education messages. Indeed, the Trustees have been active partners with the FCEC and have contributed expertise and support for the program from its beginning. The Trustees produced several pilot outreach projects to evaluate the viability of outreach as a

restoration action. These pilot-level projects include an educational comic book that provides a history of the Montrose case and information on reducing health risks while enjoying the benefits of fishing, a fish identification card, and contributions to other FCEC materials. MSRP receives constant requests for a revised and larger-scale comic book printing and more fish ID cards from FCEC partners (including Heal the Bay). In fact, it was the overwhelmingly positive response to these pilot projects that confirmed the value of the Trustees' role in developing a complete set of messages regarding "smart" fishing in the areas impacted by the Montrose contaminants.

The Trustees have edited Appendix A2 to clarify the distinctions between the EPA and the MSRP contributions to the overall messages presented to anglers and to clarify the Trustees' intent to implement a fishing outreach and education effort in collaboration with FCEC partners to integrate the critical components of the outreach messages that are not provided by the EPA.

Comment: Support is given to the MSRP for its new and continuing efforts to provide information to the public concerning fishing options and resource contamination.

Source(s): Office of Environmental Health Hazard Assessment

Comment noted.

9.2.6 Comments on "Restore Full Tidal Exchange Wetlands"

Comment: Wetlands restoration is the only "true mitigation" proposed in the Restoration Plan, and more funding should be allocated to such restoration. The wetland restoration should be focused on a specific area between Point Dume and Bolsa Chica.

Source(s): Heal the Bay; Santa Monica Baykeeper

The Trustees disagree that wetland restoration is the only "true" mitigation proposed in the Restoration Plan and believe that other restoration actions have many ecologically restorative aspects. The Trustees' preferred alternative, Alternative 2, proposes a broader set of fishing and fish habitat restoration actions than the non-preferred Alternative 3.

All other factors being the same, the Trustees would give preference to actions that are in closer proximity to the sites of the injuries associated with the Montrose case. However, the Trustees do not consider it advisable to restrict the boundaries for where wetlands restoration would be considered to such a narrow geographic range (Point Dume to Bolsa Chica). The impacts of DDTs and PCBs have been demonstrated to occur far beyond these boundaries, so conducting wetlands restoration beyond these boundaries to restore these impacts is justified. However, the Trustees will evaluate the proximity of potential sites to the Palos Verdes Shelf region, among other criteria, when evaluating wetlands restoration projects.

Comment: Wetlands can occasionally be sites of increased mercury methylation.

Source(s): Office of Environmental Health Hazards Assessment

The Trustees will investigate the issue of potential mercury methylation in considering the potential fisheries effects of wetlands restoration.

Comment: The concept of wetlands restoration is supported.

Source(s): Office of Environmental Health Hazards Assessment; Los Angeles Regional Water Quality Control Board

Comments noted.

Comment: The Trustees should contribute funding to implement the recommendations of the Southern California Wetlands Recovery Project (SCWRP) as those are formulated and released.

Source(s): Los Angeles Regional Water Quality Control Board

The Trustees' preferred alternative includes the restoration of full tidal exchange wetlands as one of the actions to restore fishing and fish habitat. The Trustees will work closely with SCWRP to identify the most appropriate wetlands restoration project(s) to meet the MSRP restoration objectives.

9.2.7 Comments on "Augment Funds for Implementing Marine Protected Areas in California"

Comment: The MPA concept is supported.

Source(s): Office of Environmental Health Hazard Assessment; Los Angeles Regional Water Quality Control Board

Comments noted.

9.3 BALD EAGLE RESTORATION COMMENTS

9.3.1 General Bald Eagle Comments

Comment: Man is responsible for DDT and should compensate the eagles and help them recover.

Source(s): Multiple public reviewers

Bald eagles are one of the priority resources for the MSRP. The Trustees are committed to pursuing the restoration of bald eagles on the Channel Islands and have allocated a total of \$6.2 million in Phase 1 to help them recover. The Trustees were formed to work on behalf of the public to restore those resources injured by the DDT contamination at issue in the Montrose case, and bald eagles are among the injured resources. The funding of the NCI Bald Eagle Feasibility Study as well as previous funding of the Santa Catalina Island Bald Eagle Program are both examples of efforts that the Trustees have funded to help bald eagles recover on the Channel Islands.

Comment: The bald eagle is a yardstick to measure DDT contamination in Southern California's coastal waters.

Source(s): R. Roe

The Trustees agree that bald eagles are an excellent indicator of the levels of DDTs and PCBs in the Southern California Bight, due to their position as a top predator in the food chain. However,

this fact is not a sufficient reason to maintain eagles on Santa Catalina Island. The levels of DDTs and PCBs can be measured in a variety of sources (such as sediments, fish, and marine mammals) that provide a picture of current contaminant levels in the marine environment and indicate whether levels are decreasing.

9.3.2 Funding Allocation for Bald Eagle Restoration

Comment: Funds should be spent on restoring bald eagles to Catalina, rather than on efforts to eradicate non-native species on islands which are more distant from the principal source of contamination than Catalina.

Source(s): Catalina Island Conservancy; multiple public reviewers

As stated previously, the Montrose consent decrees contain provisions that identify the appropriate uses of settlement funds. Funds paid to the Trustees are to be used to address injuries and lost services for a suite of natural resources and natural resource services. These resources and services include fishing and fish habitat, bald eagles, peregrine falcons, and seabirds. The Trustees' preferred alternative attempts to restore the diversity of natural resources injured and the natural resource services lost as a result of the contaminants of the Montrose case.

The utilization of restoration funds to restore seabirds on other Channel Islands and on Baja California Pacific Islands is entirely within the scope of the Montrose consent decrees. The contaminants of the Montrose case impacted seabirds in many areas of the Southern California Bight. Because many seabird species either migrate or range across a broad expanse of the marine environment, the most effective restoration may not necessarily correspond to the location where contamination is heaviest. The specific methodologies for restoring seabirds include habitat restoration, non-native animal eradication, and social attraction. These methods have been used in other natural resource damage cases where direct restoration has not always been possible.

The Trustees have modified the text to address the concern that greater funding be devoted to bald eagle restoration. Previously, the Trustees' preferred alternative provided for the potential use of a portion of the bald eagle restoration funds for additional seabird restoration. Now, the Trustees propose to devote the entire \$6.2 million allocated to bald eagles in Phase 1 of the restoration effort to bald eagle restoration.

Comment: Priority should be given to the reduction and elimination of non-native invasive animals and plants from island environments rather than the Catalina bald eagle egg manipulation and chick fostering program.

Source(s): Multiple public reviewers

The Trustees have included several actions in their preferred alternative that involve the elimination of exotic organisms from several islands as a means of aiding the restoration of seabirds. These actions include "restore seabirds to San Miguel Island" and "restore seabirds to San Nicolas Island" (see Appendices D1 and D3).

Comment: Support of the Santa Catalina Island bald eagle program is a small portion of the overall budget, and funding Catalina's recovery efforts is an investment in a comprehensive eagle recovery effort.

Source(s): Catalina Island Conservancy; multiple public reviewers

Although the annual budget of approximately \$250,000 for the Santa Catalina Island Bald Eagle Program may appear insignificant compared to the overall settlement amount of \$30 million for restoration, the Trustees must address a range of natural resources and services that were injured by the DDT contamination. In addition to bald eagles on Santa Catalina Island, the Restoration Plan addresses injuries to bald eagles elsewhere in the Channel Islands as well as injuries to fishing and fish habitat, peregrine falcons, and seabirds. To adequately address the diversity of injuries associated with the Montrose case, the Trustees had to decide how to best spend the limited restoration funds. In the case of bald eagle restoration on the Channel Islands, the Trustees have decided to suspend funding of the Santa Catalina Island Bald Eagle Program until the results of the NCI Bald Eagle Feasibility Study are known in order to conserve and wisely use limited restoration dollars.

Comment: Continuing human intervention at every stage of breeding would be a squandering of precious restoration dollars. Funding should be moved to places that more effectively benefit the environment and are more self-sustaining than the Santa Catalina Island program.

Source(s): Pacific Seabird Group; multiple public reviewers

A diverse set of opinions were expressed in public comments on the bald eagle restoration options, including some which supported the current focus on restoring self-sustaining bald eagles on the Northern Channel Islands. The preferred alternative consists of many actions that address a wide range of injured natural resources and locations.

9.3.3 Suggested Funding Scenarios for Bald Eagle Restoration

Comment: Funding of the Santa Catalina Island Bald Eagle Program should continue regardless of whether or not human intervention is always required.

Source(s): Multiple public reviewers

With the persistence of DDT in the food web, the successful reproduction of bald eagles on Santa Catalina Island will require continued human intervention for a long time. Although some recovery efforts require long-term human assistance, the Trustees must decide which actions are most cost-effective and provide the greatest long-term benefit within the scope of the limited restoration funds available for this case. Given the range of natural resources that the Trustees are addressing, they believe that the large proportion of settlement funds that would be necessary to continue the current Santa Catalina Island Bald Eagle Program as long as required for bald eagles to be able to reproduce on their own can be better spent to benefit other injured resources and services, including bald eagles on the Northern Channel Islands.

Comment: Funding should be set aside for future restoration work on Santa Catalina Island until such time that contamination levels decline.

Source(s): UCLA Environmental Science and Engineering Program; Island Conservation Northwest; Island Conservation; Multiple public reviewers

The Trustees consider this comment a logical approach to future bald eagle restoration efforts on Santa Catalina Island. This approach will be evaluated when deciding on the subsequent bald eagle restoration actions once the results of the NCI Bald Eagle Feasibility Study are known. However, if bald eagles can reproduce successfully on the Northern Channel Islands, it is likely that the Trustees will focus restoration funds on those islands, with the expectation that eagles will eventually disperse and successfully breed on all the Channel Islands (including Santa Catalina Island) once contamination levels subside.

Comment: Funding of the Santa Catalina Island Bald Eagle Program should continue at least until the results of the NCI Bald Eagle Feasibility Study are known.

Source(s): Avalon City Council; J. Morton

The Trustees have seriously considered multiple funding scenarios with respect to the Santa Catalina Island Bald Eagle Program, including continued funding until the results of the NCI Bald Eagle Feasibility Study are known. However, the Trustees have concluded that it is highly likely that eagles will still be present on Santa Catalina Island when the results of the study are known in or around 2008 (see the responses for Section 9.3.7) even without an egg manipulation and fostering program in the interim. Consequently, the Trustees have decided to conserve limited restoration dollars until the results of the study are known.

Comment: The Environmental Protection Agency should solve the contamination problem first before the Trustees bring eagles back to Santa Catalina Island.

Source(s): mymak@juno.com

Given the scope of the contamination at issue in the Montrose case and the limited money to remediate the site, it is unlikely that the EPA will be able to fully solve the contamination problem through active remediation. Thus, reductions to background contamination levels will likely be achieved over time through natural processes. The Trustees will consider the option of setting aside funds for future bald eagle restoration work on Santa Catalina Island once the results of the NCI Bald Eagle Feasibility Study are known.

Comment: Funding for the Santa Catalina Island Bald Eagle Program should be discontinued and the money used on projects that will benefit many species and island ecosystems as a whole.

Source(s): Multiple public reviewers

The Trustees will defer making longer-term decisions on bald eagle restoration until the results of the NCI Bald Eagle Feasibility Study are known, in or around 2008. However, until then, the Trustees will discontinue funding for the Santa Catalina Island Bald Eagle Program. When the results of the NCI Bald Eagle Feasibility Study are known the Trustees will re-evaluate all potential options for bald eagle restoration, including measures that may be taken even if bald eagles are not able to reproduce on their own anywhere in the Channel Islands. The remaining bald eagle restoration funds could then be used on any of the Channel Islands. This action

conserves limited restoration funds until sufficient information is known about the ability of the different Channel Island environments to support bald eagles.

Comment: Some reviewers suggested additional ideas for fundraising to support bald eagle work on Santa Catalina Island.

Source(s): T. Marsh; D. MacKenzie

The Trustees have forwarded all ideas for fundraising to support bald eagle work on Santa Catalina Island to the Institute for Wildlife Studies.

9.3.4 Reproductive Status of Bald Eagles on Santa Catalina Island

Comment: It is too soon to abandon restoration efforts on Santa Catalina Island. DDT levels are decreasing in the eggs of at least one pair of nesting eagles; this indicates that Santa Catalina Island bald eagles may soon be able to reproduce on their own.

Source(s): Catalina Island Conservancy; multiple public reviewers

The Trustees performed a comprehensive analysis of the levels of DDT in the Santa Catalina Island bald eagle eggs and did not find any statistically significant trends indicating a reduction of DDT levels (see Appendix B). Three of the five bald eagle territories on the island (Pinnacle Rock, West End, and Two Harbors) produce eggs that continue to greatly exceed the contaminant thresholds associated with reproductive success. Although the two remaining territories (Seal Rocks and Twin Rocks) produce less-contaminated eggs, these eggs continue to exhibit concentrations above the threshold required for reproductive success. The Trustees did not find statistically significant trends for any of the five territories indicating that contaminant levels are declining to the point where eagles could be self-sustaining in the foreseeable future.

Several reviewers believe that the Santa Catalina Island Bald Eagle Program simply needs more time. The Trustees understand the challenges associated with restoring bald eagles in the presence of ongoing contamination and agree that there is no quick fix to the problem. However, the Trustees have limited restoration funds and must decide on how best to allocate that funding among actions whose benefits can be realized over the long term. In light of the continued high levels of contamination in bald eagles and the fact that the contamination will remain available in the food web for some time, continued funding of the Santa Catalina Island program in the short-term is unlikely to achieve the overall goal of restoring bald eagles to the Channel Islands. The Trustees have chosen to focus their current restoration efforts on the Northern Channel Islands, with the goal of establishing a self-sustaining population there. The results of the NCI Bald Eagle Feasibility Study are expected to be known in or around 2008. The Trustees anticipate that if eagles can successfully reproduce on the Northern Channel Islands, then eagles will eventually repopulate the rest of the Channel Islands, including Santa Catalina Island.

9.3.5 Public Access to Bald Eagles

Comment: It is necessary to maintain high-profile conservation efforts such as the Santa Catalina Island Bald Eagle Program.

Source: Humboldt State University Department of Wildlife; J. Miller

The Trustees recognize that the Santa Catalina Island Bald Eagle Program presents a useful educational and public outreach opportunity. Although education and public outreach are important benefits of the program, the Trustees' overall goal is to restore bald eagles to all of the Channel Islands, not just Santa Catalina Island. The Trustees' bald eagle efforts on the Northern Channel Islands have also received significant interest from the public and the press. The Trustees consider their overall effort to restore bald eagles to the Channel Islands a high-profile restoration effort, and public outreach will continue to be an important component of the program.

Comment: Santa Catalina Island provides a significant number of people with the opportunity to enjoy bald eagles in a natural setting, and consequently should be a priority for restoration efforts.

Source(s): Catalina Island Conservancy; multiple public reviewers

The Trustees recognize that the Santa Catalina Island Bald Eagle Program provides a great opportunity for the public to experience and learn about bald eagles. Although public access to restoration actions is a consideration in evaluating these actions, it is one of multiple factors that the Trustees must address. At this time, the Trustees have chosen to focus on the restoration of bald eagles on the Northern Channel Islands. In addition, bald eagle experts indicate that the eagles will likely remain on Santa Catalina Island, at least until the NCI Bald Eagle Feasibility Study is expected to be completed. Although the Northern Channel Islands do not receive as many visitors as Santa Catalina Island, the public does have access to the islands, and visitation is encouraged by the National Park Service. The Trustees have modified the bald eagle restoration provisions in the Restoration Plan in response to this and other issues raised in public comments and will revisit bald eagle restoration options, including options on Santa Catalina Island, once the results of the NCI Bald Eagle Feasibility Study are known.

It should also be noted that Santa Catalina Island is not the only place where the public can observe wild bald eagles in Southern California. Every year, bald eagles migrate to Southern California for the winter. Among other places, wintering bald eagles can be enjoyed by the public at Big Bear Lake, Silverwood Lake, Lake Arrowhead, Lake Hemet, and Cachuma Lake.

Comment: Funding of the Santa Catalina Island Bald Eagle Program should be continued as an education tool for the benefit of our children and grandchildren.

Source(s): Multiple public reviewers

The Trustees appreciate the fact that people, both young and old, cherish the opportunity to view bald eagles in the wild. The Trustees have placed a high priority on those actions that will have long-term benefits to both the injured natural resource (i.e., the bald eagle) and the public. In the present circumstances, given finite funds, the Santa Catalina Island Bald Eagle Program will not result in long-term benefits to bald eagles or the public unless bald eagles are able to reproduce successfully on their own. The Trustees are hopeful that the restoration of eagles to the Northern Channel Islands will be self-sustaining and will not require the same human intervention that

characterizes the Santa Catalina Island Bald Eagle Program. Only the establishment of self-sustaining bald eagle pairs on the Channel Islands will truly provide long-term benefits for generations to come.

Comment: You have to decide whether the money that you are going to be saving by not having that bald eagle reintroduction program is going to be worth the public relations problem you are going to have.

Source(s): S. Pillman

The Trustees recognize that the public places a high value on the presence of bald eagles on the Channel Islands, whether or not the eagles are reproducing on their own. The Trustees have modified the bald eagle restoration provisions in the Restoration Plan in response to this and other issues raised in public comments and will revisit the bald eagle restoration options, including options on Santa Catalina Island, once the results of the NCI Bald Eagle Feasibility Study are known. The Trustees will then release a subsequent NEPA/CEQA document for public review and input; that document will outline the next steps for bald eagle restoration on the Channel Islands.

9.3.6 Potential Benefits of Funding the Santa Catalina Island Bald Eagle Program

Comment: The Santa Catalina Island Bald Eagle Program may be able to provide important strategies for long-term chemical impacts and recovery efforts.

Source(s): M. Gaede

The fact that bald eagles on Santa Catalina Island continue to experience reproductive problems illustrates the persistence of chemicals (specifically, DDTs and PCBs) in the marine environment. The methods used to maintain bald eagles on Santa Catalina Island (artificial incubation of eggs and hacking of additional birds) are well established and have been successfully used in several recovery efforts. However, the Santa Catalina Island program is unique in that the contaminant levels in the bald eagle eggs are substantially higher than the levels seen elsewhere. Therefore, the challenges of artificial incubation of bald eagle eggs on Santa Catalina Island are much greater than for most incubation efforts. Although the use of novel techniques in the incubation of bald eagle eggs on Santa Catalina Island might advance the science of such recovery efforts in other species, it is unlikely that other bird eggs will demonstrate similar contaminant levels in their eggs.

Comment: The bald eagles produced on Santa Catalina Island are a potential source population for the recovery of bald eagles on the Northern Channel Islands and the adjacent mainland.

Source(s): Catalina Island Conservancy; multiple public reviewers

The Trustees are aware that eagles from Santa Catalina Island have dispersed to the mainland and that several individuals have recently been observed on the Northern Channel Islands. However, because the Santa Catalina Island eagles continue to lay highly contaminated eggs, the majority of the chicks that have been fostered on Santa Catalina Island have come from a captive breeding program at the San Francisco Zoo, not from the Santa Catalina Island birds themselves. Even with human intervention, the hatching success of Santa Catalina Island eggs remains low. The Trustees believe that hacking birds directly onto Santa Cruz Island is a more effective

strategy for restoring eagles to the Channel Islands than continuing the fostering program on Santa Catalina Island.

The California mainland population of bald eagles has steadily increased to approximately 200 nesting pairs in recent years (Jurek, pers. comm., 2005). The mainland eagle population trend is the result of natural population growth with no captive breeding or augmentation of wild nests. Although the mainland population is being slightly augmented by the released birds from Santa Catalina Island, the recovery of the bald eagle on the mainland is occurring regardless of this contribution.

9.3.7 Potential Impacts of Not Funding the Santa Catalina Island Bald Eagle Program

Comment: It cannot be assumed that Santa Catalina Island's current population of eagles would stay on the island if they couldn't reproduce over the next few years. The reallocation of funds could mean the disappearance once again of bald eagles from Santa Catalina Island.

Source: Catalina Island Conservancy; multiple public reviewers

Even without continued Trustee funding of the current Santa Catalina Island Bald Eagle Program, it is highly likely that bald eagles will remain on Santa Catalina Island for several years despite their inability to hatch offspring naturally. Bald eagles in the wild typically live for 25 to 30 years, and Santa Catalina Island currently supports 15 to 20 birds of a wide range of ages. Currently, five active bald eagle nesting territories are present on the island, and the Institute for Wildlife Studies reports that two birds are currently establishing a new territory near Avalon. Even if the Santa Catalina Island bald eagles fail to hatch new chicks in the coming years, bald eagle experts do not expect that they will immediately break their pair bonds and abandon their Santa Catalina Island territories. Rather, it is likely that bald eagles will remain on the island, with their numbers diminishing gradually over a period of as many as 10 years or longer as some of the birds die and are not replaced by others and as certain bald eagle pairs break their pair bonds and leave after several years of failing to produce chicks.

Thus, the Trustees anticipate that bald eagles will still be present on several of the Channel Islands, including Santa Catalina Island, when the results of the NCI Bald Eagle Feasibility Study are known in or around 2008. In response to comments from the public, the Trustees have modified provisions for bald eagle restoration in the revised Restoration Plan. As a result, the Trustees will re-evaluate all bald eagle restoration options when the results of the NCI Bald Eagle Feasibility Study are known. If the results indicate that bald eagles throughout the Channel Islands still experience reproductive impairment due to the persistence of DDTs and PCBs in their diets, the Trustees would explore various options for further bald eagle restoration in the Channel Islands, including Santa Catalina Island. Some options may not be as costly as the current egg manipulation and chick fostering work on Santa Catalina Island. For instance, the Trustees might devote funds at a later date to monitor bald eagle numbers and periodically place young bald eagles on the Channel Islands (a process known as "hacking"). This option would continue a non-breeding bald eagle presence on the Channel Islands, providing human use and ecological services, until such time that contaminant levels diminish to a level that would support naturally reproducing eagles or so long as funding remains.

Comment: Stopping the Santa Catalina Island Bald Eagle Program could negatively impact the endangered Catalina Island fox.

Source(s): Catalina Island Conservancy; several public reviewers

The Trustees have carefully considered this issue and determined that, based on several factors, it is unlikely that golden eagles will establish residency on Santa Catalina Island even though they are resident on the Northern Channel Islands. An important factor in this determination is that Santa Catalina Island likely does not have a sufficient terrestrial vertebrate prey base adequate to sustain golden eagles and to support golden eagle breeding on the island. The presence of feral pigs is one of the primary reasons golden eagles were able to establish themselves on Santa Cruz Island. Efforts initiated in the 1990s eliminated several introduced terrestrial mammals (i.e., goats and pigs) from Santa Catalina Island that could have served as prey for golden eagles. Without a similar prey base, it is unlikely that Santa Catalina Island could support resident golden eagles.

A second factor making it unlikely that golden eagles would establish themselves on Santa Catalina Island is that, unlike on the Northern Channel Islands, there is no nearby mainland source for golden eagles. Golden eagles are considered an occasional visitor to Santa Catalina Island and have never been documented to breed on the island (Collins, pers. comm. 2005). This was true even when bald eagles were absent from the island (and feral pigs were present). Given the extensive development of Los Angeles County, it is unlikely that golden eagles will disperse out to Santa Catalina Island from the nearby mainland. A more likely scenario would be that golden eagles would disperse to Santa Catalina Island from the Northern Channel Islands. However, an extensive program has been in place since 1999 on the Northern Channel Islands to remove golden eagles. Through this effort, a total of 41 golden eagles have been relocated and approximately 5 to 7 golden eagles are estimated to remain on the islands (Sharpe, pers. comm., 2005). Efforts are ongoing to relocate the remaining golden eagles. With the substantial reduction in golden eagles, it is unlikely that the Northern Channel Islands would serve as a source of golden eagles to Santa Catalina Island.

The National Park Service is also currently eradicating feral pigs on Santa Cruz Island. Although this effort may take several years to complete, this non-native prey source will no longer be available to golden eagles. Without an adequate food base, golden eagles will likely resume their historical status on the Channel Islands as an occasional visitor.

The Trustees do not anticipate that bald eagles will disappear from Santa Catalina Island before the completion of the NCI Bald Eagle Feasibility Study. At that time, the Trustees will consider any new information regarding the status of golden eagles and bald eagles on the Channel Islands and will re-examine any potential impacts to the Santa Catalina Island fox. However, for the purposes of this interim decision to suspend funding of the Santa Catalina Island Bald Eagle Program until the results of the NCI Bald Eagle Feasibility Study are known, the Trustees have determined that this action will not likely adversely affect the Santa Catalina Island fox. This determination has been reviewed by the U.S. Fish and Wildlife Service and has received its concurrence (see Appendix B).

9.3.8 Humane Treatment of Bald Eagles

Comment: Abandoning eagles on Santa Catalina Island is inhumane.

Source: K. McKay

Comment: Keeping eagles on Santa Catalina Island, where they continue to be injured, is wrong.

Source(s): M. Padian; J. Steinberg

These two contrasting comments address the challenges of restoring bald eagles in an environment where they continue to be exposed to contamination. Over the past 25 years, the parties working to restore bald eagles, including the Trustees, have found that the long-term restoration of bald eagles on the Channel Islands requires different measures. Some of these measures may entail risks that the birds continue to be exposed to contamination and its adverse effects.

Adult bald eagles that accumulate high levels of DDTs and PCBs into their system can experience a range of neurological problems that can sometimes lead to death. In fact, a 12-year old female adult bald eagle died from suspected DDT poisoning on Santa Catalina Island in the 1990s. Because of the ongoing contamination of birds and their subsequent reproductive problems on Santa Catalina Island, the Trustees initiated the NCI Bald Eagle Feasibility Study in the hopes that birds on these islands would be less exposed to contaminants than those on Santa Catalina Island.

9.3.9 Bald Eagles and the Santa Catalina Island Economy

Comment: If bald eagles disappear from Santa Catalina Island, the island's economy may be affected.

Source: S. Dewey

The Trustees do not anticipate that suspending the funding of the Santa Catalina Island Bald Eagle Program will result in the disappearance of the bald eagles in the near future (see Section 9.3.7). The high likelihood that eagle pairs will remain on the island over the next several years (even without human intervention) provides the opportunity for private or other public fundraising to continue the current Santa Catalina Island Bald Eagle Program. The Trustees are only making an interim decision at this point; the completion of the NCI Bald Eagle Feasibility Study and the Trustees' release of an additional NEPA/CEQA document will provide a further opportunity for public input on bald eagle restoration.

9.3.10 New Bald Eagle Restoration Ideas

Comment: Was there any discussion about providing some funding to monitor what is going on over a period of years, what will happen to that population on Santa Catalina Island if funding for the egg replacement ceases after 2005?

Source(s): Catalina Island Conservancy

During the interim period until the NCI Bald Eagle Feasibility Study is completed, the Trustees have chosen to focus their restoration efforts on the Northern Channel Islands, which continue to

hold the potential for the long-term restoration of bald eagles, and suspend funding of the Santa Catalina Island Bald Eagle Program. The Trustees considered but decided against funding to monitor Santa Catalina Island during this time to conserve limited restoration funds for future bald eagle restoration actions. However, the Trustees will revisit all aspects of bald eagle restoration once the results of the NCI Bald Eagle Feasibility Study are known, likely in 2008.

Even without continued Trustee funding of the current Santa Catalina Island Bald Eagle Program, it is highly likely that bald eagles will remain on Santa Catalina Island for several years despite their inability to hatch offspring naturally. Bald eagles in the wild typically live for 25 to 30 years, and Santa Catalina Island currently supports 15 to 20 birds of a wide range of ages. Currently, five active bald eagle nesting territories are present on the island, and the Institute for Wildlife Studies reports that two birds are currently establishing a new territory near Avalon. Even assuming that the Santa Catalina Island bald eagles fail to hatch new chicks in the coming years, bald eagle experts do not expect that they will immediately break their pair bonds and abandon their Santa Catalina Island territories. Rather, it is likely that bald eagles will remain on Santa Catalina Island, with their numbers diminishing gradually over a period of as many as 10 years or longer as some of the birds die and are not replaced by others and as certain bald eagle pairs break their pair bonds and leave after several years of failing to produce chicks.

Thus, the Trustees anticipate that bald eagles will still be on several of the Channel Islands, including Santa Catalina Island, when the results of the NCI Bald Eagle Feasibility Study are known (in or around 2008). If the results of the NCI Bald Eagle Feasibility Study indicate that bald eagles throughout the Channel Islands are still experiencing reproductive impairment due to the persistence of DDTs and PCBs in their diets, the Trustees would explore various options for further bald eagle restoration on one or more of the Channel Islands, including Santa Catalina Island.

Comment: Certain reviewers suggested that the Trustees relocate Santa Catalina Island bald eagle eggs to non-contaminated areas far from the Palos Verdes Shelf. Another suggested that the Santa Catalina Island birds be moved to the Northern Channel Islands until the DDTs and PCBs near the outfall are naturally capped.

Source(s): J. Martin; S. Zelman; D. Weisman

Relocating Santa Catalina Island bald eagle eggs away from the Palos Verdes Shelf raises several technical issues and would not address the MSRP goal of restoring bald eagles to the Southern California Bight. If the Santa Catalina Island bald eagles were to be relocated to the Northern Channel Islands, there would be no guarantee that the birds would remain there; they might return to their original Santa Catalina island territories.

Comment: The Trustees should consider commercially farming fish off of Santa Catalina Island for bald eagles and sport fishermen.

Source(s): T. Marsh

Although fish constitute a large percentage of the diet of bald eagles on Santa Catalina Island, bald eagles are exposed to DDTs and PCBs mostly through their consumption of contaminated marine mammal carcasses and seabirds. Compared to marine mammals and seabirds, fish around Santa Catalina Island are relatively clean and are not contributing significantly to bald eagle

exposure. Therefore, a program for the commercial farming of fish off of the island would not be an effective way to reduce the exposure of bald eagles to contaminants.

Comment: Bald eagle eggs and adults should be tested for methyl mercury due to the biological damage it causes.

Source(s): J. Lara

Mercury has been linked to reproductive problems in several species of birds. Currently, bald eagle eggs on Santa Catalina Island are analyzed for DDTs and PCBs. The Trustees are analyzing mercury as part of the fish sampling program along the coast of Ventura, Los Angeles, and Orange Counties to provide important information to fish consumers. The Trustees may consider analyzing the mercury concentrations in bald eagle eggs in the future.

9.3.11 NEPA Documentation

Comment: The Trustees should consider preparing subsequent NEPA documentation to allow for more meaningful public involvement once the ramifications of decisions regarding the fate of the bald eagle are clearer.

Source(s): EPA

Based on public comments, the Trustees now plan to prepare a subsequent NEPA/CEQA document once the outcome of the NCI Bald Eagle Feasibility Study is known. This document will discuss the Trustees' preferred next steps for bald eagle restoration on the Channel Islands. The public will have an opportunity to review and provide formal comment on this document.

9.3.12 Ecosystem-Level Restoration

Comment: Restoration is not limited to establishing self-sustaining populations, rather it means restoring functioning ecosystems.

Source(s): D.H. Van Vuren

All other evaluation criteria being equal, the Trustees gave preference to actions with greater potential for long-term and/or permanent benefits and without intensive ongoing human intervention and attendant costs. Thus, the Trustees preferred actions likely to produce results that extend beyond the time during which funding is available. Whether or not this objective is achievable for bald eagles in light of the ongoing contamination remains to be seen.

The Trustees acknowledge the important role that bald eagles play in the ecosystem of the Channel Islands. Due to their ecological role and in response to the public support for the eagles, the Trustees will now allocate the entire \$6.2 million for bald eagle restoration on the Channel Islands and will consider actions that are not self-sustaining if eagles on the Northern Channel Islands cannot reproduce on their own.

9.4 PEREGRINE FALCON RESTORATION COMMENTS

9.4.1 Use of the Term “Natural Recovery” for Peregrine Falcons

Comment: Referring to the recovery of peregrine falcons on the Channel Islands as “natural” is incorrect due to past and continuing active release efforts conducted by the Santa Cruz Predatory Bird Research Group and funded by donations and other non-Montrose support.

Source(s): Santa Cruz Predatory Bird Research Group

In the Restoration Plan, the Trustees discuss that the recovery of the peregrine falcon was largely due to an active release program. Peregrine falcon recovery on the Channel Islands has clearly benefited from the ongoing release program conducted by the Santa Cruz Predatory Bird Research Group on the proximate mainland. However, it is known that peregrine falcon pairs on the Northern Channel Islands are reproducing successfully and that natural recruitment is occurring. Therefore, it is likely that the continued recovery of the peregrine falcon on the Channel Islands is due to a combination of natural recovery and the active release program on the mainland. The Trustees agree that the use of the term “natural recovery” does not portray the overall situation on the Channel Islands and have consequently modified the text of the Restoration Plan.

9.4.2 Allocation of Funds to Peregrine Falcon Restoration

Comment: No additional funds should be allocated towards the peregrine falcon due to their current status on the Channel Islands. One commenter questioned why monitoring would occur if the Trustees were not going to implement active restoration.

Source(s): J. Adams; R. Ambrose

Peregrine falcons are one of the MSRP priority bird species due to the DDT-related eggshell thinning injuries that this species has suffered. Although these birds are once again breeding successfully on the Northern Channel Islands, the extent of their recovery throughout the Channel Islands is not clearly known. Also unknown is whether pairs are still experiencing reduced productivity due to the ongoing effects of DDT contamination. It is important to monitor the current status of and the potential ongoing threats to this species before considering future active restoration efforts (such as releasing additional birds on the islands). Several peregrine falcon surveys will occur within Phase 1 of restoration implementation. After considering the results of these surveys, the Trustees may decide to proceed with active restoration efforts in Phase 2 of the restoration program.

9.4.3 Active Restoration of Peregrine Falcons on Santa Catalina Island

Comment: The Trustees should pursue active restoration of peregrine falcons on Santa Catalina Island. One commenter urged the Trustees to consider the need for active restoration on the Channel Islands after the survey results are known.

Source(s): Catalina Island Conservancy; USC Wrigley Institute for Environmental Studies; multiple public reviewers

The Trustees evaluated active restoration of peregrine falcons on the Channel Islands (see Appendix C1). As part of this action, the Trustees evaluated releasing additional peregrine falcons on Santa Catalina Island to facilitate the recovery of this species to the Southern Channel Islands. However, the Trustees concluded that active restoration was not necessary at this time on the Channel Islands (including Santa Catalina Island) for the following reasons: (1) the current status of peregrine falcons on the Channel Islands, (2) the results of the 2004 Santa Catalina Island peregrine falcon survey funded by the Trustees, and (3) the potential impacts to sensitive bird species. These factors are described and evaluated in greater detail in Appendix C1. Over the next 5 years, the Trustees will fund several peregrine falcon surveys on the Channel Islands that will provide updated information on the status of these birds. Based on the results of these surveys, the Trustees may decide to proceed with active restoration activities on the Channel Islands in Phase 2 of the restoration program. A subsequent NEPA/CEQA document will be released to the public to address future restoration actions in Phase 2.

9.4.4 Budget and Time Frame for Peregrine Falcon Restoration

Comment: The draft restoration plan departs from the spirit of the outcome of the court case when it comes to addressing the actual damages for which Montrose is accountable. The Judge in that case calculated the damages done to the resources and came up with a figure of \$7 million for peregrine falcon restoration.

Source(s): Santa Cruz Predatory Bird Research Group

Contrary to this comment, the court did not determine a distinct dollar value for the peregrine falcon injuries or for any of the injured resources in this case. The Trustees provided estimates to the court during litigation concerning the potential costs of restoration. The final consent decree does not specify how funding should be allocated among the different injured resources and lost services. See Section 9.4.3 for a discussion of the Trustees' decisions regarding active peregrine falcon restoration.

Comment: The proposed monitoring budget is not adequate to address recruitment, dispersal, and foraging behavior of peregrine falcons on the Channel Islands. Monitoring should also be expanded to include the coastal mainland and the Baja California Pacific Islands.

Source(s): Santa Cruz Predatory Bird Research Group

The Restoration Plan outlines a number of parameters (such as productivity, recruitment, dispersal) that would be considered in the peregrine falcon monitoring program. The importance and scope of these parameters will be prioritized during the development of the monitoring plan.

The scope and extent of the monitoring program will determine the ultimate budget for this action. At this point, the proposed budget is an estimate based on consultation with several peregrine falcon experts. The budget may be adjusted once the objectives and scope of the monitoring program are more clearly defined.

The Trustees considered implementing a monitoring program in the Baja California Pacific Islands, as discussed in Appendix C3. The Trustees also previously considered several mainland peregrine falcon actions during the Tier 1 analysis. However, based on the injury information for the case and the increasing number of peregrine falcons on the mainland, the Trustees decided that restoration and/or monitoring activities on the Channel Islands would receive priority over monitoring at other locations.

9.4.5 Threat of Peregrine Falcon Restoration to Seabird Populations

Comment: Restoration activities for peregrine falcons may pose significant threats towards depleted and rare seabirds.

Source(s): J. Adams

In Appendix C1, the Trustees addressed the potential impacts to depleted and rare birds (including seabirds) from active peregrine falcon restoration activities on the Channel Islands. These potential impacts were one of the reasons for not selecting active restoration of peregrine falcons at this time. Rather, the Trustees have chosen to monitor the status of peregrine falcons on the Channel Islands during Phase 1 of restoration implementation. These monitoring activities will be undertaken in such manner as to avoid impacts to seabird colonies. Should surveys indicate that active restoration of peregrine falcons is warranted on the Channel Islands, the Trustees will fully evaluate the potential impacts to rare seabirds in the Phase 2 NEPA/CEQA document.

9.5 SEABIRD RESTORATION COMMENTS

The Trustees received many letters in support of Alternative 2 with respect to seabird restoration actions. Those in support felt that Alternative 2 provides a more appropriate level of funding to restore seabird populations impacted by Montrose DDT releases. Supporters of Alternative 2 stated that the proposed seabird actions will promote long-term significant benefits to seabird populations. Specific comments received on the seabird actions are addressed below.

9.5.1 Seabird Nexus

Comment: Several reviewers objected to the level of funding for seabird restoration actions, questioning the nexus of seabird injuries to the Montrose case.

Source(s): UCLA Environmental Science and Engineering Program; Heal the Bay; Santa Monica Baykeeper; multiple public reviewers

The final consent decree for the Montrose case included seabirds as a target for restoration funds due to the injuries associated with DDT-related eggshell thinning. The Trustees closely evaluated the nexus for seabirds and targeted restoration actions for those seabirds that demonstrated severe or significant eggshell thinning and/or for which DDT egg residues were significantly elevated in the colonies of the Southern California Bight. A complete description of the seabird

nexus can be found in Section 5.1. Although seabirds may not be experiencing continued injury that is similar to that of the bald eagles on Santa Catalina Island, their populations were clearly impacted by DDT contamination in the Southern California Bight.

Seabirds are also consumed by both bald eagles and peregrine falcons, two high-priority bird species for this restoration program. Actions that increase seabird populations in the Southern California Bight will also provide indirect benefits to the recovery of bald eagles and peregrine falcons on the Channel Islands. For these reasons, it is appropriate to allocate substantial funding to the seabird category.

Comment: Other reviewers supported the use of funds for seabird restoration as part of the preferred alternative (Alternative 2).

Source(s): Pacific Seabird Group; multiple public reviewers

Comment noted.

9.5.2 Seabird Restoration on Baja California, Mexico

Comment: Funds should not be spent on seabird restoration in Baja California because it is far from the contamination source and not related to the Montrose case.

Source(s): Heal the Bay; Santa Monica Baykeeper; Catalina Island Conservancy; USC Wrigley Institute for Environmental Studies; multiple public reviewers

As discussed in Appendix D5, many of the seabird species that breed on the Baja California Pacific Islands also breed on the Channel Islands. Several of the Baja California Pacific Islands are oceanographically part of the Southern California Bight and most of the seabird colonies in Mexico and California form part of a larger metapopulation of seabirds that breed, forage, and disperse into the Southern California Bight. The Trustees are targeting seabird restoration actions on both the Baja California Pacific Islands and the Channel Islands because seabird populations in both locations demonstrated injury from eggshell thinning as a result of DDT contamination. For example, the California brown pelican sustained almost complete reproductive failure due to DDT-related eggshell thinning in the late 1960s and early 1970s on both the Coronado Islands in Mexico and Anacapa Island in the Channel Islands. Restoration actions in both of these areas will directly benefit seabird populations that were impacted by the contamination addressed in the Montrose case.

9.5.3 Additional Seabird Data Gap Studies

Comment: Additional studies should be conducted to determine the extent of the seabird injuries due to DDT contamination. Specifically, the Trustees should monitor the levels of DDT and PCB contamination in sooty shearwater, black-vented and pink-footed shearwaters in addition to the other nesting birds of the SCB

Source(s): J. Adams; H. Nevins

During the damage assessment for the Montrose case, the Trustees funded several data gap studies for seabirds to determine potential injuries from DDT contamination. At that time, the Trustees focused on injuries to nesting seabirds in the Southern California Bight. Although additional data gap studies could have been conducted to determine potential injuries to

migratory species, the Trustees decided to focus on breeding seabirds of the Southern California Bight for the case. Even with this more narrow focus, there are still more seabird restoration actions for these species than available funding. Because of the limited funding for seabird restoration, the Trustees prefer to spend funds on actual on-the-ground restoration activities rather than conduct further data gap studies to determine additional seabird injuries. The Trustees believe that the proposed seabird restoration actions will provide long-term benefits to a suite of seabirds that nest within the Southern California Bight.

9.5.4 Additional Long-Term Seabird Monitoring in the Southern California Bight

Comment: The Trustees should fund long-term seabird monitoring to better understand the biology of seabirds in the Southern California Bight, as well as long-term monitoring efforts to assess seabird species and their prey fishes within the Channel Islands Marine Protected Area. One reviewer specifically mentioned that the Trustees should also monitor seabirds on Anacapa following the recent black rat removal.

Source(s): J. Adams; multiple public reviewers

The Trustees have allocated a total of \$6.5 million to fund five seabird restoration actions in their preferred alternative. These actions include habitat restoration, eradication of exotics, and social attraction. The decision to fund habitat-based restoration rather than monitoring efforts for seabirds reflects the Trustees' desire to fund direct restoration actions for seabirds. These types of restoration actions have proven to provide significant benefits to seabird populations throughout the world. Although important, monitoring programs for seabirds do not achieve the Trustees' goal of restoring seabirds within the Southern California Bight. The Trustees are also aware of other efforts to implement monitoring programs for seabirds, such as the Seabird Conservation Plan recently developed by the U.S. Fish and Wildlife Service. The Trustees' preferred alternative also calls for augmenting funds to support implementation, including monitoring, of the Channel Islands MPAs.

9.5.5 Restoration of Additional Seabird Species and Locations

Comment: The Restoration Plan only targets a few seabird species and ignores the vast majority of marine birds that forage in the Southern California Bight but breed elsewhere.

Source(s): H. Nevins; J. Adams

The Trustees recognize that migratory seabird species were likely exposed to DDT and PCB contamination while foraging in the Southern California Bight. However, based on the injury information collected for the case and the limited funds available for seabird restoration, the Trustees prioritized nine breeding seabird species of the Southern California Bight for restoration.

In general, the Trustees support trans-boundary restoration efforts, as demonstrated by their support for seabird actions in Mexico. Actions in New Zealand and Chile were not included in the preferred alternative because of their weaker nexus to the case. Also, the Trustee Council for the Command oil spill case is already pursuing seabird restoration in New Zealand. Given the

limited restoration funds available, the Montrose Trustees have chosen to prioritize their seabird restoration efforts in the Southern California Bight and Baja California, Mexico.

9.5.6 Impacts to Humans Who Consume Seabirds

Comment: The Restoration Plan fails to recognize the human reliance on migratory species likely affected by DDTs. The Trustees should further investigate the extent of contaminant exposure affecting cultural harvest and human consumptions of sooty shearwaters in New Zealand.

Source(s): H. Nevins

Based on the limited restoration funds available for seabird actions, the Trustees have chosen to focus on on-the-ground restoration actions rather than further explore the potential injuries of the case. The potential effect to humans in New Zealand was not addressed at the time of the damage assessment, and the Trustees consider these potential impacts to be outside the scope of the restoration program.

9.5.7 Impacts to Seabirds from Other Restoration Actions

Comment: Restoring bald eagles would likely undermine several of the seabird restoration actions because eagles will eat or harass seabirds.

Source(s): Pacific Seabird Group

The potential impact of bald eagles on seabirds is addressed in both the Restoration Plan (Appendix B) and the Environmental Assessment for the Feasibility Study for the Reestablishment of Bald Eagles on the Channel Islands (MSRP 2002). Please refer to these two sources for more information. Although the Trustees acknowledge that bald eagles consume seabirds, they are a small percentage of an eagle's diet compared to fish. The Trustees do not believe that the presence of bald eagles will compromise the success of the proposed seabird restoration actions, though they anticipate that eagles will occasionally prey on seabirds. The success of the seabird restoration actions should increase seabird numbers on the Channel Islands, and as a result, sensitive species would be better able to withstand any predation pressure from bald eagles.

9.5.8 Comments on "Restore Alcids to Santa Barbara Island"

Comment: The Trustees should investigate the ecological linkages between introduced grasslands, mouse populations and barn owls [which could impact alcid populations] before investing in this action.

Source(s): J. Adams

The Trustees recognize the importance of understanding the ecological links between introduced grasslands, mouse populations, and barn owls. The National Park Service is currently conducting studies on the mouse population and its potential impacts on seabirds. Studies on the barn owl population are also under consideration. The Trustees will evaluate the impacts of deer mice on the success of this action during the monitoring phase of the action. In addition, it is likely that Cassin's auklets are not as vulnerable to mouse depredation as Xantus's murrelets, since egg

neglect is negligible in Cassin's auklets. Auklets begin incubating their eggs immediately after laying, unlike murrelets, which leave their first egg unattended before laying their second, a practice that makes murrelet eggs more susceptible to predation.

Comment: The capacity for auklets to breed successfully at Santa Barbara Island will depend on the distribution and availability of suitable prey resources in the area. The Trustees should also assess the prey resources off Santa Barbara Island before pursuing this action to ensure that adequate prey resources are available to support auklets.

Source(s): J. Adams

The Trustees believe that the presence of nesting birds on the other nearby Channel Islands indicate that adequate prey is available to support auklets on Santa Barbara Island. Cassin's auklets are currently nesting successfully on Prince Island, San Miguel Island, Scorpion Rock, and Santa Cruz Island. In addition, Santa Barbara Island historically supported a population of over 5,000 pairs of auklets. Conducting a food availability study prior to implementing this action would be too costly given limited restoration funds as well as the Trustees' preference to spend funds on actual on-the-ground restoration activities rather than additional research. The Trustees believe that the proposed seabird restoration actions will provide long-term benefits to Cassin's auklets and Xantus's murrelets in the Southern California Bight.

Comment: Social Attraction of birds to artificial nest sites does not imply restoration. For auklets, the Trustees are urged to pursue and evaluate additional criteria for interpreting/demonstrating restoration success including, comparisons of reproductive parameters and chick growth with auklets nesting at Scorpion Rock and Prince Island, adult survival rates, and nest site fidelity. It is also recommended that this action include an evaluation of the potential for this action to increase (or in the event of poor reproductive success due to food limitation or predation, decrease) the overall abundance of auklets. How do anticipated restoration actions and outcomes to the populations compare with "baseline conditions" had dumping not occurred?

Source(s): J. Adams

The Trustees do not agree with the contention that this action does not constitute restoration. Compensatory restoration in the form of reestablishing a population that was originally extirpated from its historical habitat is a method commonly used in other CERCLA and oil spill cases where direct restoration is not always possible. The specifics of the monitoring plan for this action will be determined during project development and will include the parameters mentioned above. Accurate baseline population information does not exist for auklets on Santa Barbara Island; however, reproductive success and parameters from the restored colony on Santa Barbara Island will be compared with the results documented on other colonies within the Southern California Bight.

Comment: Xantus's Murrelets are not presently limited by the availability of suitable nest sites. Xantus's Murrelets are currently recolonizing Anacapa Island following the removal of rats. The number of active nest sites, however, has shown a

long-term decline. Whereas there is available natural nest habitat, having murrelets occupy artificial nest sites does not constitute restoration.

Source(s): J. Adams

The Trustees do not agree with the contention that this action does not constitute restoration. One possible theory concerning the cause of the recent decline in active nests is that the drought in the late 1980s and early 1990s affected nest site availability for Xantus's murrelets in the bush site sub-colonies. This action will restore bush nest sites on the upper bluffs of the islands and will maintain a portion of these sites during low-rain years in order to continue to provide healthy vegetative cover. The hope is that this action will provide suitable habitat in a new area, and thus draw birds away from lower-quality habitat (e.g., under plywood boards and across ladders). Higher-quality nest sites should result in increased productivity. Also, these nest sites will provide safer access to the nests by researchers, which in turn will result in more consistent and higher-quality monitoring for a larger percentage of birds. The Trustees believe that an increase in the number of murrelets nesting on Santa Barbara Island as well as their productivity does constitute restoration and will provide long-term benefits to Xantus's murrelets in the Southern California Bight.

Comment: Plan should outline quantitative measures that can be used to demonstrate successful vegetation restoration.

Source(s): J. Adams

The monitoring plan for this action will outline measures to document successful vegetation restoration. The evaluation of the action (Appendix D2) has been modified to reflect this.

Comment: It is not clear what the benefits to the two species will be after the estimated five year action. Trustees should outline whether the artificial nest sites will be maintained or phased out after the project is determined successful.

Source(s): J. Adams

This action will have an adaptive management plan. The status of the action and the artificial nest sites will be decided after reviewing the results and the status of the population on the island.

9.5.9 Comments on "Restore Seabirds to Scorpion Rock"

Comment: An important first step for the project is to reduce human disturbance at colony through signage and effective educational outreach actions.

Source(s): J. Adams

Disturbance reduction and educational outreach are major components of this action.

Comment: Erosion problems on island need to be stabilized.

Source(s): J. Adams

Erosion control is a major component of this action.

Comment: It should be recognized that at present Scorpion Rock is a somewhat ephemeral nesting colony for auklets. Auklets nested there during the cool

and productive years of 1999-2003. Reproductive success is likely to be lower and more variable than at principal colonies off San Miguel Island. None of the sites on the rock were occupied in 2004 and anomalous conditions may prevent auklets from nesting there this season. The trustees need to establish a restoration criterion that evaluates the success of this colony in the context of oceanographic conditions and availability of suitable prey resources.

Source(s): J. Adams

Cassin's auklets were nesting on Scorpion Rock when the first nest boxes were established and have made some effort every year following that. Cassin's auklets suffered poor reproductive success in 2004, not just on Scorpion Rock but throughout the Southern California Bight. As a result, the Trustees do not feel that the Scorpion Rock colony is ephemeral, but do agree that the restoration success criteria (which will be identified when the monitoring plan is developed) should take into consideration the potential impacts oceanographic conditions and prey availability.

Comment: Plan should outline quantitative measures that can be used to demonstrate successful vegetation restoration and erosion control.

Source(s): J. Adams

The monitoring plan for this action will outline measures to document successful vegetation restoration and erosion control. The evaluation of the action (Appendix D4) has been modified to reflect this.

Comment: Adding additional nest sites and then determining that the sites are used by seabirds does not necessarily constitute restoration.

Source(s): J. Adams

The Trustees do not agree with the contention that this action does not constitute restoration. Increasing the number of birds nesting on the rock and their productivity will have significant impacts on the population.

Comment: The Trustees should consider supporting longer term monitoring (> 5-yrs) of auklets at Scorpion Rock and Prince Island within the context of oceanographic assessments, to better understand and interpret restoration success.

Source(s): J. Adams

The specifics of the monitoring plan will be determined during the development of the action-specific plan. The Trustees will take into consideration the potential impacts of oceanographic conditions. Auklet monitoring on Prince Island will be considered as part of the action "restore seabirds to San Miguel Island" (see Appendix D1).

9.5.10 Comments on “Restore Seabirds to Baja California Pacific Islands”

Comment: Projects on Guadalupe Island should be funded regardless of the outcome of the NCI Feasibility Study.

Source(s): J. Adams

All of the seabird restoration actions on the Baja California Pacific islands have a strong nexus to the Montrose case and would benefit seabirds injured by the contaminants of the case. However, because the Trustees have chosen to modify the preferred alternative to reserve \$6.2 million exclusively for bald eagle restoration, the balance of that money will no longer be available for seabird restoration, pending the results of the NCI Bald Eagle Feasibility Study. For this reason, two seabird actions, “restore seabirds to Baja California Pacific islands” (Guadalupe Island) and “restore ash storm-petrels to Anacapa Island,” may not be funded during this phase of restoration. However, the Trustees believe that the possibility of cost-sharing and the eventual allocation of a second round of funds in Phase 2 of restoration may result in the eventual implementation of these actions.

9.5.11 Comments on “Restore Ashy Storm-Petrels to Anacapa Island”

Comment: The Trustees should reconsider the project to eradicate the introduced House Mouse from the Farallon Islands to effectively restore this species injured by chemical pollution in the SCB.

Source(s): J. Adams

This idea did not rate as high as other seabird ideas primarily due to its location outside of the Southern California Bight. Other projects targeting ash storm-petrels received higher ratings in respect to nexus. Also, Luckenbach Trustee Council is considering the Farallon Islands project for funding.

Comment: The Plan in its current form suggests that social attraction has been used successfully on this species; it is important to point out that this technique has only been used successfully to capture birds, but social attraction to nest sites has never been demonstrated. Social attraction with this species has never been demonstrated. Efforts to attract petrels to nest sites on the Farallon Islands have failed. Researchers have also found that only boxes that were installed within pre-existing nest sites were used by breeding individuals. Boxes installed in suitable nesting habitat failed. The Trustees are urged to consider support for ongoing petrel studies throughout the Channel Islands that are designed to evaluate efficacy and limitations at vocalization broadcasts, catch-per-unit effort, inter-island exchange, adult survival and population size.

Source(s): J. Adams

The Trustees did not mean to indicate that social attraction has been used successfully to establish a nesting colony of ash storm-petrels, but instead that playbacks have been used successfully to capture ash storm-petrels in mist nets. The appendix has been modified to make this point clearer. However, social attraction has been used successfully to establish nesting

colonies of other species of petrels on islands in the Galapagos and off the coast of Maine. The Trustees will take the information learned from the Farallon Islands project into consideration when implementing the Anacapa Island action. Details of the monitoring plan for this action will be developed prior to implementation.

Comment: The Trustees should examine disturbance issues impacting reproductive success of petrels in sea caves that are open to public.

Source(s): J. Adams

The dry caves on Anacapa Island where petrels nest are already closed to public access. Disturbance issues in the caves of the Channel Islands National Park are the responsibility of the National Park Service.

Comment: At present suitable nesting habitat for this species does not appear to be limiting. Furthermore, from a demographic perspective, increasing reproductive output for such a long-lived, late-maturing seabird with low lifetime reproductive output is not likely to enhance the population. More information is required to assess what limits sub-adult and adult survival (i.e., predation, attraction to artificial light, pollution, plastic ingestion, etc.).

Source(s): J. Adams

Now that the introduced black rat has been removed from Anacapa Island, there is a great opportunity for the ashy storm-petrel population to increase and expand into parts of the island that the species did not previously use due to the presence of rats. The birds may be reluctant to do so without the social cues provided by social attraction. Spreading the population to more than one or two islands greatly reduces the risk of catastrophic events (such as an oil spill or the unintended reintroduction of rats to the island) eliminating this rare and endemic population.

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