

The Natural Resource Trustees for the Montrose case (Trustees) first began to envision possible approaches for natural resource restoration during the damage assessment and litigation period in the 1990s. As specific evidence of the injuries caused by the DDTs and PCBs was collected, it became important to begin identifying potential actions that could restore the natural resources to their baseline conditions (that is, the conditions the natural resources would be in were it not for the contamination at issue), and to compensate for the loss of services resulting from injuries to natural resources. Using several potential restoration actions as examples, the Trustees estimated damages in terms of the cost of the potential restoration actions that could make the resources whole again and compensate for interim losses. Potential restoration actions considered for this purpose included replacing contaminated fish stocks using constructed reefs and re-establishing bald eagles and peregrine falcons in the Channel Islands using methods that have been successful elsewhere.

Although examining potential restoration actions and their estimated costs was a crucial step in settling the Montrose case, the final consent decree neither prescribes specific restoration projects that must be implemented nor dictates the distribution of funding among the different injured resources or between primary and compensatory restoration actions.¹ Thus, within the framework of an overarching goal to restore injured resources to their baseline conditions and compensate for interim lost services, the settlements provide latitude to develop explicit restoration objectives and strategies for achieving the goals. This section explains the restoration goals that the Trustees seek, discusses the specific objectives and strategies that the Trustees propose for attaining the restoration goals, and describes the process the Trustees are following to plan the work of the Montrose Settlements Restoration Program.

4.1 GOALS, OBJECTIVES, AND STRATEGIES OF THE MONTROSE SETTLEMENTS RESTORATION PROGRAM

For this plan, a *goal* is a broad statement about a long-term desired outcome that may or may not be completely attainable. An *objective* is a measurable outcome to be achieved in a specific time frame to help accomplish a desired goal. *Strategies* address the process rather than the endpoint, and are approaches for accomplishing the goals and objectives.

¹ Restoration actions may be categorized as either primary or compensatory.

Primary restoration actions are taken to return injured natural resources and lost services to their respective baselines. For instance, if a contamination release has impaired the ability of biological organisms to reproduce, actions that restore the injured organisms' reproductive function to the level that would exist were it not for the release are considered primary restoration. An example of a primary restoration action is the removal of the injurious contamination from the organisms' environment.

Compensatory restoration actions are taken to compensate for interim losses of natural resource services pending recovery. Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) regulatory framework, compensatory restoration claims are recovered as "compensable damages." The regulations describe these damages as, "The compensable value of all or a portion of the services lost to the public for the time period from the discharge or release until the attainment of the restoration, rehabilitation, replacement, and/or acquisition of the equivalent of the resources and their services to baseline" (Title 43 Code of Federal Regulations [CFR] Part 11.80).

4.1.1 Restoration Goals

The overarching goals of the Montrose Settlements Restoration Program (MSRP) have been constant throughout the damage assessment and restoration effort, and appear in the final consent decree for the case. The overall goals of the MSRP are to:

- Restore, replace, rehabilitate, or acquire the equivalent of the injured natural resources and the services those resources provide to their respective baselines (the conditions they would be in were it not for the injuries from the contaminants of the case); and
- Provide compensatory restoration for the interim lost services of the injured natural resources.

The Trustees give highest priority to the first goal, the primary restoration of resources that still show evidence of injury or lost services; nevertheless, it is not the Trustees' intent to forgo compensatory restoration actions until all injured resources have fully recovered to their respective baselines. In fact, the Montrose settlements made no distinction between settlement funds for primary restoration and settlement funds for compensatory restoration. Many of the potential approaches being considered to address the injuries and lost services of the Montrose case may serve as either primary or compensatory restoration, or as both (depending on the scale of the actions and whether they simply bring an injured resource back to baseline or go beyond it to make up for past losses).

The Trustees used this planning process to develop an appropriate mix of primary and compensatory restoration actions to be conducted using the settlement funds. For restoration actions that are compensatory in nature, the Trustees sought restoration approaches that benefit the same or similar natural resources as those that sustained injury as a result of the DDTs and PCBs released in the Montrose case. This approach was applied, for instance, in the evaluation criteria presented in Section 5 for seabird restoration, in which higher priority was given to projects that benefit seabird species for which there have been documented effects from the Montrose contaminants (i.e., DDT-induced eggshell thinning).

4.1.2 Restoration Objectives

The final consent decree for the Montrose case states: "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." The restoration objectives for the MSRP (i.e., the specific targets or milestones that help accomplish the overall goals) have been formulated with this consent decree provision in mind and with consideration of the input from the public during the restoration planning workshops. The MSRP restoration objectives are:

- Restore fishing services within the Southern California Bight (SCB)
- Restore fish and the habitats on which they depend within the SCB
- Restore bald eagles within the SCB
- Restore peregrine falcons within the SCB
- Restore seabirds within the SCB

Of the two fish-related objectives, one addresses human use (restoring anglers' ability to catch fish that are low in contamination), and the other aims for ecological results. When the Trustees initially sorted and categorized the many restoration ideas they had compiled, there was often little practical distinction between projects benefiting fish and fish habitat and projects benefiting fishing as a human use. Therefore, for the purpose of evaluating restoration ideas in categories, these two fish-related objectives have been combined into a single broad category labeled "fishing and fish habitat." Thus, the evaluation of restoration ideas (described in Section 5) is organized into four categories (fishing and fish habitat, bald eagles, peregrine falcons, and seabirds) (described in Section 6) that encompass the five restoration objectives listed above.

4.1.3 Restoration Strategies

In addition to restoration goals and objectives, the Trustees have identified three strategies that embody their approach for optimizing the results of the MSRP. These strategies are:

- Follow an adaptive approach to restoration through iterative planning, implementation, and monitoring to optimize restoration results
- Promote public involvement in restoration planning and implementation
- Coordinate with other regional resource management and restoration programs and take advantage of regional partnerships to gain efficiency and avoid duplication of effort

Restoration planning is only one step in achieving the most effective natural resource restoration possible within the limits of available funding. The MSRP operates as an adaptive restoration program. This plan provides an overall framework for selecting and implementing restoration actions over the life of the MSRP, and establishes a significant initial phase of restoration actions to be undertaken during the first five years following its adoption (see Section 6). This plan will be followed by design, implementation, and monitoring of several restoration projects, leading to subsequent review and evaluation of results and other new information, and revision of the Restoration Plan as restoration progresses.

Throughout this iterative planning and implementation process, the Trustees will continually seek to involve the public, including interested groups and the expert scientific community. The Trustees will also coordinate MSRP efforts with other organizations that are conducting work of a similar nature and seek opportunities to collaborate.

4.2 DEVELOPING THE RESTORATION PLAN

The approach and assumptions used in developing this Restoration Plan have been derived from a number of sources: current conditions, including the ongoing injuries and the continued presence of contamination, the CERCLA regulatory framework, the Trustees' experience with past natural resource damage assessment (NRDA) restoration plans, certain provisions in the Montrose settlements, and close coordination with the U.S. Environmental Protection Agency (EPA) on the progress of its feasibility study on sediment remediation.

The CERCLA regulations (43 CFR Part 11) provide guidance on the restoration planning process, including the evaluation and selection of restoration alternatives. Under 43 CFR Part 11.82, these provisions require the authorized official (in this case the Trustees) to develop a reasonable number of possible restoration alternatives linked to the injured natural resources and

the services those resources provide and then select the alternative determined to be the most appropriate based on all relevant considerations, including several suggested factors (further described at the beginning of Section 5). As has been done in previous restoration planning efforts, the Trustees are using the CERCLA regulatory framework as a guide and adapting the criteria and the evaluation approach to the specific circumstances of the case.

Preparation of the Restoration Plan has been conducted using the following approach:

- Develop restoration goals, objectives, and strategies
- Compile injury benchmark information
- Project future trends in contaminant levels and distribution
- Solicit and formulate a wide range of restoration ideas
- Complete a Tier 1 (screening) evaluation of preliminary restoration ideas that leads to a synthesized set of potential restoration actions/approaches for detailed evaluation
- Complete a Tier 2 (detailed) evaluation of potential restoration actions/approaches from Tier 1, including a National Environmental Policy Act (NEPA)/California Environmental Quality Act (CEQA) analysis
- Develop the restoration alternatives and identify the preferred alternative

The soundness of this approach was discussed at the restoration planning workshops and received support from the interested public and the technical community.

The first of these seven elements is addressed above in Section 4.1. The remaining six are addressed below.

4.2.1 Compiling Injury Benchmark Information

An important early aspect of planning was the gathering and compiling of background information for all resource categories useful to restoration planning. This element included a review of the historical and recent literature and data (including studies specifically conducted as part of the damage assessment) and the performance of studies to fill critical data gaps. This information has been synthesized to develop environmental benchmark information against which the performance of different restoration project actions will be assessed. This benchmark information (both existing and future) will also be used to assess the environmental impacts of the restoration project alternatives. The efforts associated with this element are described in more detail below.

Historical and Recent Literature and Data

Several sources of information were reviewed to prepare the benchmark information, including reports, journal articles, environmental impact reports (EIRs) and environmental impact statements (EISs), recent monitoring reports, environmental databases, resource management plans, and restoration plans. Some of the key information sources included:

- California Department of Fish and Game (CDFG) environmental sensitivity index maps for oil spill response

- The CDFG database on locations of artificial reefs and kelp beds
- Information on watersheds and wetlands compiled by the State Coastal Wetlands Recovery Project
- Seabird and marine mammal monitoring information from the National Oceanic and Atmospheric Administration (NOAA), the U.S. Fish and Wildlife Service (USFWS), the National Park Service (NPS), and the U.S. Geological Survey (USGS)
- Resource management and restoration plans for the Channel Islands
- USGS seafloor mapping and information on seismic hazards
- Marine Recreational Fishing Statistical Survey
- Information from wastewater outfall monitoring programs
- The technical studies and reports associated with the damage assessment

Data Gap Studies in Progress or Completed

The Trustees have conducted or are in the process of conducting five data gap studies to provide information to enhance their ability to make sound restoration planning decisions. These five studies are briefly described below.

Santa Catalina Island Bald Eagle Reintroduction Study

In 1980 the USFWS and the Institute of Wildlife Studies (IWS), with the cooperation of the CDFG and the Santa Catalina Island Conservancy, initiated efforts to reintroduce bald eagles to Santa Catalina Island. These efforts are ongoing, as the bald eagles inhabiting Santa Catalina Island continue to experience reproductive problems (see Appendix B). Because of their role in the legal case, the Trustees began contributing funding toward this program during the natural resource damage assessment and litigation phase in the 1990s, and have continued to support the program since the final legal settlement to maintain current conditions until this Restoration Plan is completed.

The purpose of this data gap study is to learn from the ongoing efforts to maintain breeding bald eagles on Santa Catalina Island. Information for the study is gained from monitoring the status of the bald eagle population on Santa Catalina Island, including contaminant levels, reproductive behavior, reproductive success, and feeding behavior. This information is critical for understanding the nature of the continuing injury to bald eagles on the island and will be used to guide restoration planning for this species. Annual reports on the Santa Catalina Island bald eagle program are available from the MSRP Administrative Record.

Northern Channel Island Bald Eagle Feasibility Study

This approximate five-year study was initiated in summer 2002 to determine the feasibility of recolonizing the Northern Channel Islands with bald eagles. A separate Feasibility Study/Environmental Assessment was completed for this study (MSRP 2002). The study consists of the following actions:

- Releasing 12 captive-bred or translocated wild nestlings each year for five years on Santa Cruz Island (using techniques developed on Santa Catalina Island)
- Monitoring contaminant levels in released birds, their eggs, and their food to determine whether the concentrations of DDTs and PCBs present may be affecting the ability of the eagles to reproduce successfully

The information from this data gap study will be used to evaluate whether a bald eagle reintroduction program should be implemented on the Northern Channel Islands.

Peregrine Falcon Survey of Santa Catalina Island

A survey conducted in 1992 found nine pairs of peregrine falcons nesting on several of the Northern Channel Islands; however, the extent to which peregrine falcons have become re-established on the Southern Channel Islands has until recently been uncertain. The Trustees undertook a formal survey of Santa Catalina Island in 2004 to determine whether peregrine falcons are nesting and reproducing there. The survey results indicated that two pairs of peregrine falcons have established territories and are nesting on Santa Catalina Island; however, no successful hatching or fledging of chicks was observed on the island (PBRG 2004).

Fish Contamination Study

A comprehensive fish collection and analysis study was initiated in 2002 to examine existing contaminant concentrations in fish from Ventura to Dana Point in the waters off of Ventura, Los Angeles, and Orange Counties. Fish collection has been conducted in several phases from 2002 to 2004. During the first phase, concentrations of DDTs, PCBs, dieldrin, chlordanes, and mercury were measured in 24 species of fish collected from 29 locations. Data from individual fish were generated for organochlorines, and data from composite samples within species and by location were obtained for mercury. A second phase of analysis will involve filling the data gaps identified by the results from the first phase, and evaluating the need for conducting follow-up individual-level analyses for mercury. This study is a joint project with the EPA, and funding is provided by both MSRP and the EPA.

The purpose of the study is to provide more complete information on the existing geographic patterns of contaminant concentrations in a variety of fish that are caught by both recreational and subsistence anglers in the SCB. The study data will be used for a variety of restoration planning purposes, including the identification of possible restoration projects. The data also will also be made available to the public to enable people to make more informed decisions about where to fish and the types of fish they consume.

Angler Study

Together, MSRP and the EPA also designed and implemented a survey and gathered qualitative information on fishing and fish consumption practices and preferences from people who fish, whether for recreation or subsistence, in the coastal waters from Point Dume to Dana Point. The angler study was conducted at fishing piers, beaches, jetties, and boat docks. The information collected by the study addresses angler demographics, fishing preferences, fish preparation techniques, and fish consumption rates and patterns. The purpose of this study was three-fold:

- To gain a better understanding of which recreational and subsistence anglers are being impacted by the contamination associated with the Montrose case, as well as how they get their information on fish and fishing
- To collect information on how many meals of fish per month are consumed by recreational and subsistence anglers, and how they prepare their fish for consumption
- To gain insights on the fishing preferences of these anglers (i.e., the types of fish they seek and their typical fishing locations)

The Trustees will use the information from the angler study to plan restoration projects that increase opportunities to fish for cleaner fish and to help guide the development of more effective public outreach and education programs that reduce public exposure to DDTs and PCBs from fish.

4.2.2 Projecting Future Trends in Contaminant Levels and Distribution

An important part of the restoration planning process is consideration of what the future conditions of contamination will be within the study area. It is challenging to project future changes in the concentrations and geographic distribution of DDTs and PCBs in the environment of the SCB. The Trustees have considered evidence that natural factors (e.g., the gradual burial of the more highly contaminated sediments over time) are altering levels of biological exposures to these contaminants over time. The Trustees have also coordinated closely with the EPA in their efforts to study the feasibility of taking remediation actions to reduce the availability of these contaminants.

In addition to the ongoing data gap studies described above, the Trustees have consulted with scientific experts within and outside their agencies to obtain the best estimates and projections into the future of the likely trends in continued contaminant exposures. The Trustees convened a workshop in May 2004 to review recent monitoring data and observations on levels of DDTs and PCBs in sediment, marine mammals, bald eagles, and other receptors. The purpose of the workshop was to evaluate trends in exposures, particularly related to ongoing observations of bald eagle reproductive impairment on Santa Catalina Island. One major variable to be considered is whether the potential remediation of the sediment contamination by the EPA is likely to significantly alter biological exposures to DDTs and PCBs and if so, within what time frame. The EPA efforts are described below.

Coordination with the EPA

The Trustees and the EPA were co-plaintiffs in the Montrose case, and have continued their coordination since the final settlements, collaborating on and co-funding the studies described above. In addition, MSRP staff work closely with the EPA to ensure consistency in their respective programs, and to avoid duplication of effort.

The EPA has a two-pronged approach to its Superfund responsibilities for the offshore areas of DDTs and PCBs stemming from the Montrose releases. The first is an “institutional controls” program that uses non-engineering measures to address the human health risks associated with consumption of contaminated fish from the Palos Verdes Shelf. Non-engineering measures include public outreach and education. The second is an “in situ” response program that is

currently at the remedial investigation/feasibility study stage. The remedial investigation report will describe the conditions of the site, and the feasibility study will examine the technically feasible solutions to containing the DDT- and PCB-contaminated sediments over portions of the Palos Verdes Shelf. Only the second of these programs addresses “source control” of contamination, but both programs are briefly described below.

Institutional Controls

In a 2001 EPA Superfund Action Memorandum, the EPA established a program of institutional controls (ICs) as initial actions to address the immediate human health risks associated with the consumption of contaminated fish from the Palos Verdes Shelf. These ICs involve information and enforcement measures designed to affect human activities in such a way as to reduce exposure to the contaminants related to or at a site, and are usually applied in concert with other methods aimed at physical site remediation. The ICs consist of three primary components: (1) public outreach, (2) monitoring, and (3) enforcement. These three components complement each other to maximize the effectiveness of the EPA’s goal of protecting human health. Currently, the ICs program is envisioned to be a ten-year program with a budget of \$7.8 million.

The objectives of the public outreach IC component are to reduce the health risks associated with eating contaminated fish by (1) increasing public awareness and understanding of fish consumption advisories and restrictions and (2) building local capacity to address fish contamination issues. The EPA also convened a Seafood Contamination Task Force, now known as the Fish Contamination Education Collaborative (FCEC), which is a consortium of federal, state, and local government agencies; local institutions; and community-based organizations. The FCEC is a means of coordinating the development and implementation of a public outreach program with direct involvement at all levels. FCEC also serves as a decision-making body for the public outreach and education component of the ICs program and advises the EPA on other Palos Verdes Shelf IC activities. The EPA started the full implementation of the public outreach and education program in January 2003.

The IC monitoring component consists of the EPA’s co-funding of the two fish-related data gap studies previously described and two additional fish-related contamination studies: a study of white croaker contamination levels in the ocean to assess the need for changes in the current commercial catch ban designation, and a study of the white croaker being sold in local ethnic fish markets to assess whether contaminated white croakers are reaching these markets. The sampling of white croaker from the ocean for the commercial catch ban study and the additional sampling from local fish markets were completed in 2004. The results from the laboratory analysis of all of these fish are expected in late 2005 or early 2006.

The EPA has designed an enforcement program to meet two goals: (1) to prevent to the extent practical the commercial catch and sale of contaminated fish from the catch ban area on the Palos Verdes Shelf and (2) to ensure that white croaker are not caught at or near the Palos Verdes Shelf in violation of CDFG regulations that establish a daily bag limit for these fish for sport fishers.

Once the monitoring results become available, the EPA will work closely with appropriate state agencies and interested stakeholders to interpret the results and identify specific enforcement needs that address the problems, if necessary.

Sediment Remediation

The EPA conducted the Palos Verdes Shelf Pilot Capping Project in 2000 to assess the feasibility of capping DDT-contaminated sediment on the Palos Verdes Shelf with cleaner material. The goal would be to reduce the ongoing inputs of DDTs and PCBs into the food web. The pilot cap placement project was completed in September 2000. Sediment was deposited at three 45-acre areas (capping cells) at depths of 150 to over 200 feet, for a total area of 135 acres northwest of



Figure 4-1. Sites where EPA conducted a pilot capping study in 2000. (Dashed line indicates region designated as the “area of highly contaminated sediments” by USGS [Lee et al. 2002]. Further analyses by the EPA have shown that contaminated sediments exist beyond this area.)

the Los Angeles County Sanitation Districts' outfall system (Figure 4-1) (USEPA 2003). An environmental monitoring program collected data before, during, and after cap placement to address key questions about the feasibility of capping on the Palos Verdes Shelf. The results of the Palos Verdes Shelf Pilot Capping Project will be used to evaluate the short-term results of capping DDT-contaminated sediment with clean sediment. The project will also determine how these results are affected by variables such as cap material, placement method, and water depth. In 2006, the EPA will use the results from the pilot project, along with other relevant information, to decide whether or not to propose full-scale capping as a cleanup action for the site.

Assumptions Regarding Future Contamination Distributions and Exposures

In light of the data and consultations identified above, the Trustees have made certain assumptions for the purposes of developing this Restoration Plan. At this time, the EPA has not determined the feasibility of a full-scale cap for sediment remediation. The EPA's overall goal is to reduce most if not all DDT/PCB levels in fish tissues to below health-based levels of concern as well as to levels that are protective of ecological receptors (Schauffler, pers. comm., 2003). The EPA anticipates that a remedy will be selected in 2006. Changes in contaminant concentrations throughout the food web would be realized gradually as the sediment source is controlled.

In light of the uncertainties associated with the remedial actions on the Palos Verdes Shelf and environs, several technical assumptions were formulated relative to future contaminant distributions and concentrations. Restoration planning must have a reasonable understanding of both current and future conditions so that effective decisions can be made regarding where and what type of actions should be implemented to achieve the desired restoration goals and objectives. Furthermore, an evaluation of the benefits and the likelihood of success of potential restoration projects will require a comparison of the existing conditions with the expected future conditions.

Several assumptions are listed below regarding future contaminant distributions and concentrations. These assumptions will be updated and/or revised in the future based on the results of the current data gap studies, upcoming regional monitoring, and the ultimate decisions made by the EPA. As discussed earlier, the Trustees will adaptively manage this restoration program based on updated information about and assumptions on contaminant concentrations.

The assumptions made for this Restoration Plan regarding future conditions were as follows:

- **Substantial reductions in the levels of DDTs and PCBs in marine sediments will not occur for many decades without human intervention.** Three key processes affect the contaminant concentrations in the surface layer of sediment at any given time: the recent history of sediment deposition or erosion, bed mixing through bioturbation, and loss of sediment through resuspension and desorption during storm events. According to recent mathematical modeling, it is predicted that most of the p,p'-DDE (the most abundant isomer of DDE and a persistent component of DDT) immediately northeast of the White Point outfall will remain buried and that surface concentrations will gradually decrease as DDE degrades to its decay products (Sherwood et al. 2002). However, the modeling also predicts that erosion will occur along the southeast edge of the existing effluent deposit, which, in addition to causing bio-diffusion, will reintroduce DDE to the sediment surface.

- **Sediment remediation on the Palos Verdes Shelf will reduce, but not eliminate, DDT and PCB contamination within the SCB.** If capping is selected as the remediation alternative, the cap would only be implemented on the parts of the Palos Verdes Shelf that are of the greatest concern. Other areas of contamination would remain uncovered and bioavailable.
- **Only limited sediment remediation is planned for other areas with DDT and PCB contamination.** With the exception of sediment remediation within the Consolidated Slip of the Inner Los Angeles Harbor and possibly upstream in Dominguez Channel, no other sediment remediation is planned within Los Angeles or Long Beach Harbors. However, maintenance dredging within the harbors may continue to result in reduced sediment contaminant concentrations relative to historical concentrations. No capping and/or other sediment remediation is planned within Santa Monica Bay, at the two historical sites where DDTs and PCBs were disposed of by dumping off of Santa Catalina Island, or within or offshore of coastal wetlands within the SCB.
- **Sediment remediation will take more than a decade to implement.** No capping or other sediment remediation would be implemented before 2006 on the Palos Verdes Shelf, and remediation could take up to 15 years to complete.
- **Maintenance may be required to ensure the benefits of sediment remediation.** Areas to the north of White Point on the Palos Verdes Shelf, particularly at Portuguese Bend and Royal Palms Park, have known geologic hazards such as landslides. These processes, together with earthquakes, have the potential to disrupt a sediment cap and potentially liberate higher concentrations of DDTs and PCBs. Severe storms also have the potential to erode a sediment cap.
- **Substantial reductions in DDT and PCB contamination in the food web would take more than a decade to achieve after the implementation of sediment remediation.** Concentrations of p,p'-DDE and PCB in bottom-feeding fish such as the white croaker will decrease after sediment remediation on the Palos Verdes Shelf and in the Consolidated Slip in Los Angeles Harbor. However, elevated concentrations in fish will persist for several years after sediment remediation, due to the life span of fish contaminated prior to remediation. Also, p,p'-DDE and PCB concentrations in surface sediments will be lower, but still above background concentrations off the Palos Verdes Shelf and extending north into Santa Monica Bay. In addition, elevated concentrations of DDTs and PCBs would be expected to persist for longer than a decade in some marine mammals, bald eagles, and seabirds due to their longer life spans and their foraging preferences.
- **Seafood consumption advisories are likely to remain in effect for many years.** Advisories warning against consumption of white croaker and other fish will likely continue for many years even after sediment remediation.
- **Reproductive impairment of bald eagles on Santa Catalina Island will likely continue for the foreseeable future.** Contaminant concentrations in carcasses of marine mammals and in many species of seabirds that are fed upon by bald eagles will continue to impact the species for the foreseeable future, even in the event that the EPA undertakes a sediment source control effort. In part, this continuing impairment will result from the relatively long life spans of marine mammals. Levels of DDE in bald eagle eggs laid on Catalina Island

from the 1980s to 2004 have fluctuated, but have not fallen below the thresholds associated with reproductive injuries.

- **Seabirds in general and peregrine falcons in particular have been and will likely continue to recover from contaminant injuries over time.** Most seabirds feed upon pelagic fish, which have experienced substantial reduction in DDTs and PCBs tissue concentrations since the ban on the discharge of these contaminants through the LACSD ocean outfall near White Point. Peregrine falcons, which feed almost exclusively on birds, will experience reductions in contaminant concentrations and impairments with the passage of time due to cleaner food resources. Contaminant concentrations in scavenging seabirds, such as gulls, may persist for more than a decade due to their habit of foraging on marine mammal carcasses, which are expected to remain high in contaminants for decades or longer (see above).

4.2.3 Soliciting and Formulating a Wide Range of Restoration Ideas

Active involvement of the interested public and the scientific community has been an integral part of the restoration planning process. This involvement has included the public review and comment periods associated with the NEPA/CEQA process (described later), outreach and education activities, and restoration planning workshops. These latter two activities are described below. Public outreach and involvement will continue throughout the restoration planning cycle and during the implementation of specific restoration actions.

A number of potential restoration concepts were originally explored during the damage assessment phase of the Montrose case. On settlement of the case, the Trustees initiated an effort to gather as broad a range of additional potential ideas as possible from the public, including members of the scientific community and various public interest groups. Some of the ideas were put forward in brief conceptual terms, and others were submitted in the form of concrete proposals. At this planning stage, the solicitation was an effort to gather “ideas” rather than formal proposals for funding, so all submittals were treated as ideas without concern regarding who would implement them or how they would be implemented. Specific decisions about who will ultimately implement projects and how the funding will be administered will not be made until after the completion of the Restoration Plan.

Four roundtable workshops were held in January 2003 with various stakeholders, including representatives from governmental and non-governmental agencies, academicians, scientists, and local residents. Over 80 individuals attended the January 2003 workshops. The purpose of the workshops was to:

- Review and obtain feedback on draft program goals and objectives
- Review and obtain feedback on the draft screening and evaluation criteria for restoration concepts
- Brainstorm on preliminary restoration concepts and ideas

Two workshops were held with technical experts, including academic researchers, resource agencies, and public entities involved with monitoring. The technical workshops covered all three purposes noted above and included additional discussion on restoration concepts for injured

resources. One of the technical workshops focused on restoration ideas for injured bird resources, and the other focused on ideas for restoring fishing and fish habitats.

Two additional general public workshops were held to cover both bird and fishing injuries. These workshops were attended by representatives from governmental and non-governmental agencies, homeowner associations, environmental groups, environmental consultants, and residents. The public workshops were announced in local newspapers and were advertised on the MSRP web site.

The comments received from both the technical and the public workshops were considered in the preparation of this document. Notes from these workshops can be found in the MSRP Administrative Record (MSRP 2004).

4.2.4 Completing a Tier 1 Evaluation of Preliminary Restoration Ideas

The breadth and number of potential restoration ideas gathered was so large that the Trustees developed a two-tier evaluation process. The first screening level of evaluation, referred to as Tier 1, is described in detail in Section 5 of this Restoration Plan. Section 5 presents the criteria developed to evaluate the restoration ideas and summarizes the results of the evaluations. The complete record of all of the initial restoration ideas and the Tier 1 evaluation is not contained in this document, but has been placed separately in the Administrative Record for the case (MSRP 2004).

4.2.5 Tier 2 Evaluation of Restoration Ideas

The result of the Tier 1 screening evaluation was a set of 17 potential restoration actions, some specific and some still conceptual. These actions were then put through a more rigorous evaluation process, the Tier 2 evaluation. The Tier 2 evaluation is described in detail in Section 5, and the full evaluations for each action are in Appendices A–D of this Restoration Plan.

4.2.6 Developing the Restoration Alternatives and Identifying the Preferred Alternative

To facilitate public review and analysis of the alternatives for the comprehensive restoration program, the restoration ideas carried into Tier 2 were assembled into three comprehensive alternatives spanning all the restoration categories: fishing and fish habitat, bald eagles, peregrine falcons, and seabirds. The alternatives analysis, including the presentation of the Trustees' preferred comprehensive restoration alternative, is presented in Section 6.

4.2.7 Public Participation

Public participation in the Trustees' decision-making efforts is not only a requirement of the federal regulations for natural resource damage assessment and restoration (43 CFR Part 11) but is also an important aspect of the NEPA and CEQA requirements. Because this document is both a Restoration Plan and a programmatic EIS/EIR, the evaluations of the efficacy of the potential restoration actions and approaches include evaluations of the potential environmental consequences, as mandated by NEPA and CEQA. These are presented in Section 7.

Compliance with NEPA and CEQA procedural requirements occurred as follows. A Notice of Intent to conduct restoration planning and to prepare an EIS was published on October 9, 2001

(Federal Register, Vol. 66, No. 195). Three public meetings were held (on October 13, October 21, and November 1, 2001) to gather public comments on the scope of the Restoration Plan and programmatic EIS/EIR and restoration ideas. The NEPA public scoping comment period ended on November 24, 2001. A CEQA Notice of Preparation for the Restoration Plan and programmatic EIS/EIR was published in the California State Clearinghouse on March 15, 2002, and the public comment period ended 30 days later on April 15, 2002.

Public comments were sought on the draft version of this Restoration Plan and programmatic EIS/EIR during a 45-day review period from April 8 to May 23, 2005. A Notice of Availability was published in the Federal Register and in the California State Clearinghouse on April 8, 2005. The Trustees conducted public meetings on the draft Restoration Plan and programmatic EIS/EIR on April 23, April 24, April 28, and May 9, 2005. After the close of the public comment period, the Trustees considered and responded to public comments, made changes to the plan to address the comments received, and released this Restoration Plan and programmatic EIS/EIR as a final document in October 2005.

4.3 FUTURE FUNDING CONSIDERATIONS

The amount of funding ultimately available for natural resource restoration in this case is subject to certain variables. As described in Section 2.4, the final consent decree for the Montrose case contains a provision at Paragraph 11.C whereby the United States and the State of California have agreed that, under certain conditions, \$10 million of the \$43 million provided for response actions by the EPA and the California Department of Toxic Substances Control (DTSC) may be used either (1) by the EPA or DTSC for response actions or (2) by the Trustees for natural resource restoration. This \$10 million and the interest it is accruing is being held in a court registry account until such time that the EPA makes a decision on the in situ response action for this case (that is, the response action that addresses the contamination remaining in situ in the sediments on the Palos Verdes Shelf). This provision of the consent decree states:

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.

In other words, should the EPA ultimately make a decision not to pursue any cleanup action for the contaminated sediments, then \$10 million plus interest of the \$43 million in settlement funds earmarked for response actions would instead go to the Trustees for additional natural resource restoration. The EPA currently estimates that it will reach its decision in 2006.

As explained in Section 4.1.3 and Section 6.2, this Restoration Plan provides a guide for commencing natural resource restoration actions and adapting to new information as it becomes available. Since it is too early to know whether the \$10 million of “swing money” will be made available for natural resource restoration, the Trustees have developed alternative sets of restoration actions based upon a commitment of approximately \$25 million over the first several years of implementation. Subsequent revisions of this plan will consider how accrued interest from the settlements and the swing money (if made available) may be utilized for additional natural resource restoration in the future.