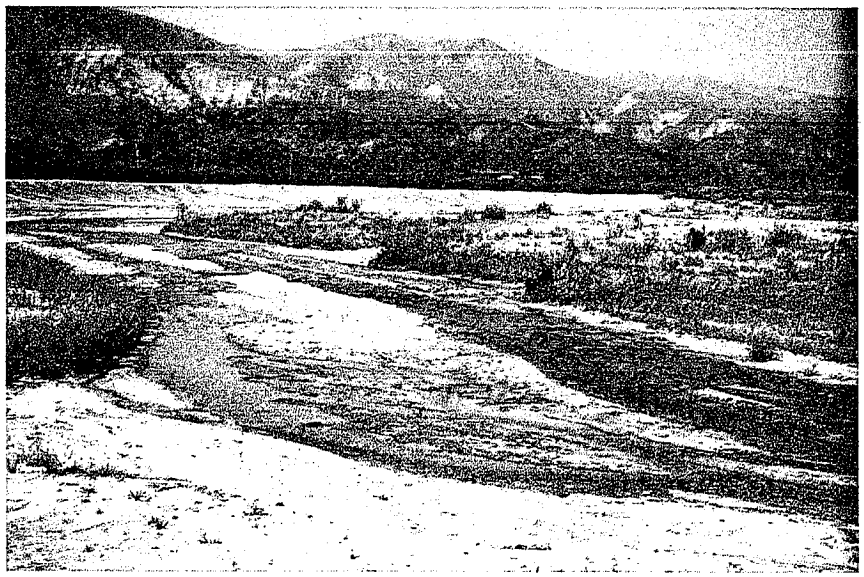
FINAL RESTORATION PLAN

and

ENVIRONMENTAL ASSESSMENT

for the

SANTA CLARA RIVER ARCO OIL SPILL



Prepared by:

The Santa Clara River Trustee Council

United States Fish and Wildlife Service

California Department of Fish and Game
Office of Spill Prevention and Response

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When we see land as a community to which we belong, we may begin to use it with love and respect. That land is a community is the basic concept of ecology, but that land is to be loved and respected is an extension of ethics. The land ethic simply enlarges the boundaries of the community to include soils, waters, plants and animals, or collectively, the land. A land ethic changes the role of Homo sapiens from conqueror of the land-community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such.

Aldo Leopold

Table of Contents

EXECUTIVE SUMMARY

On January 17, 1994, an oil pipeline owned by ARCO Pipe Line Company, ruptured during and following the Northridge earthquake. The largest oil spill occurred near the city of Santa Clarita, in Los Angeles County. Approximately 190,000 gallons, or 4600 barrels, of crude oil flowed from the pipeline break along a roadway, entered a storm drain, then an open drainage ditch, and on into the Santa Clara River. The oil flowed downstream for approximately 16 miles, where a dam was constructed to prevent further spread of the oil. Cleanup of the river included removing oiled vegetation, excavating soil and sediment, backfilling, and grading of the river bed.

As required under the federal Oil Pollution Act of 1990 (33 U.S.C. 2701 et seq.) and the California Lempert-Keene-Seastrand Oil Spill Prevention and Response Act (Government Code 8670.1 et seq.), a Natural Resource Damage Assessment was performed to determine the injuries from the spill to the natural resources of the Santa Clara River, and to develop and implement the appropriate actions to restore, rehabilitate, replace, or acquire the equivalent of the injured natural resources. The natural resources injured as a result of the spill and resultant cleanup activities included approximately 100 acres of woody and herbaceous vegetation and approximately 150 acres of sediment, fish including the arroyo chub and the federally endangered unarmored three-spine stickleback, a number of bird and other wildlife species, and riparian vegetation including critical habitat for the federally-listed endangered least Bell's vireo.

A Consent Decree was signed by federal, state, and county agencies, along with ARCO, and lodged by the court on January 17, 1997, for a settlement of 7.1 million dollars for natural resource damages resulting from the oil spill. After the settlement, a Trustee Council was formed composed of federal and state agencies, whose responsibility is to develop a Restoration Plan for the trust resources in and along the Santa Clara River and to allocate settlement funds associated with that effort. The Trustee Council also has the responsibility for implementation, oversight and monitoring to ensure that the restoration efforts are successful.

The purpose of the final Restoration Plan/Environmental Assessment is to outline the restoration alternatives that have been selected as compensation for injuries to natural resources caused by the spill. The Restoration Plan outlines the restoration activities that, once implemented, will restore, rehabilitate, replace or acquire the equivalent of the injured natural resources. The restoration alternatives that are outlined in this Restoration Plan include land acquisition/conservation easements, invasive non-native plant species control, restoration project grants program, information and education, and watershed evaluation and monitoring. Of the settlement dollars, 60% will be allocated for land acquisition/conservation easements, 20% for invasive non-native plant species control, 10% for a restoration project grants program, 5% for information and education, and 5% for watershed evaluation and planning. These percentages include any necessary oversight and monitoring costs for the respective restoration activities. The Trustee Council has the responsibility for the implementation and successful completion of the restoration projects.

1.0 Introduction

1.1 Purpose

The purpose of this final Restoration Plan/Environmental Assessment is to outline and provide a framework for the restoration alternatives that will restore, rehabilitate, replace or acquire the equivalent of the injured natural resources resulting from the ARCO oil spill along the Santa Clara River. The purpose of the Plan is also to inform the public on the overall approach of the restoration.

The restoration serves as compensation for natural resource injuries in order to make the environment and the public whole. The restoration planning, development, and implementation are being conducted under the authority of the federal Oil Pollution Act of 1990 (OPA) (33 U.S.C. 2701 et seq.) and the California Lempert-Keene-Seastrand Oil Spill Prevention and Response Act (Government Code 8670.1 et seq.). Restoration activities must comply with all applicable laws and regulations including the federal and state Endangered Species Act, the federal Clean Water Act, the federal Migratory Bird Treaty Act, the National Environmental Policy Act, the National Historic Preservation Act and the California Environmental Quality Act.

1.2 Oil Spill and Natural Resource Injuries

On January 17, 1994, an oil pipeline owned by ARCO Pipe Line Company ruptured during and following the Northridge earthquake (magnitude 6.8) in the Los Angeles area. The largest oil spill occurred near the city of Santa Clarita in Los Angeles County (Figure 1). Approximately 190,000 gallons, or 4600 barrels, of crude oil flowed from the pipeline break along a roadway, entered a storm drain, then an open drainage ditch, and from there flowed into the Santa Clara River. The oil flowed downstream for approximately 16 miles, where a dam was constructed to prevent further spread of the oil. Cleanup of the river included removing oiled vegetation, excavating soil and sediment, backfilling, and grading of the river bed (Figure 2).

As required under the OPA and the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act, a Natural Resource Damage Assessment (NRDA) was performed to determine the injuries from the spill, and the resultant cleanup activities, to the natural resources of the area. The injured natural resources of the Santa Clara River included approximately 100 acres of woody and herbaceous vegetation, 150 acres of river sediment, an undetermined number of fish including the arroyo chub and the federally endangered unarmored three-spine stickleback, a number of bird and other wildlife species, and riparian vegetation including critical habitat for the federally endangered least Bell's vireo. In the NRDA process, the injuries are then translated to a damage figure which is the monetary sum of what it will cost to restore the equivalent of the injured natural resources. A damage settlement was agreed to by both ARCO and the trustee agencies that compensates for the injuries to natural resources, to make the environment and the public whole again.

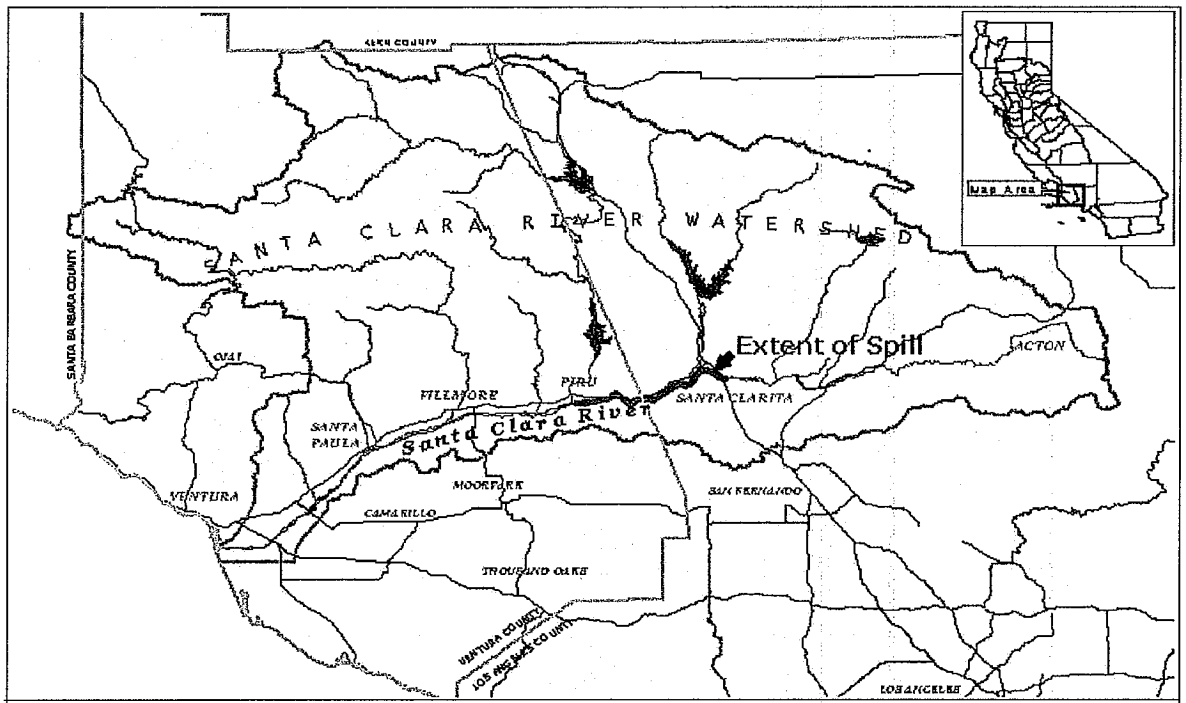

FIGURE 1. Extent of oil spill in the Santa Clara River watershed.

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Ventura Fish & Wildlife Office
October 2001

Figure 2. Cleanup of the oil in the Santa Clara River.

1.3 Consent Decree

A Consent Decree was signed in December of 1996 and January 1997 by federal, state, and county agencies, along with ARCO, and was lodged by the court on January 17, 1997, for a settlement of 7.1 million dollars for natural resource damages resulting from the 1994 oil spill. It is stated in the Consent Decree that the "Natural Resource Trustees plan to use said funds for habitat rehabilitation, revegetation, and or protection of areas within the Santa Clara River watershed, and wildlife projects which will benefit the least Bell's vireo (Figure 3) and other threatened or endangered species or species of special concern in and along the Santa Clara River." Subsequent to the settlement, a Trustee Council was formed. The Council is comprised of federal and state agencies, the U.S. Fish and Wildlife Service and the California Department of Fish and Game, respectively. Initially, there were two trustees and two alternates from each agency on the Trustee Council, for a total of four trustees and four alternates. Currently, there are two trustees and two alternates on the Council, one trustee and alternate from each respective agency. It is also stated in the Consent Decree that the "Natural Resource Trustees, as co-equal joint trustees, commit to the expenditure of funds for the design, implementation, permitting as necessary, monitoring and oversight of restoration projects in and along the Santa Clara River."

The Trustee Council is responsible for the development and implementation of the Restoration Plan/Environmental Assessment for the Santa Clara River, and the allocation of settlement funds associated with that effort. The Trustee Council is also responsible for oversight and monitoring to ensure successful completion of the restoration projects.

Figure 3. Adult least Bell's vireo with nestlings.

1.4 Mission, Goals and Objectives

The trustees developed the following mission and goal statement for the Santa Clara River Trustee Council. This statement provides the framework for the Restoration Plan and outlines the overall responsibilities of the Trustee Council.

"The mission of the Santa Clara River Trustee Council is to restore natural resources in the Santa Clara River watershed, in accordance with the Consent Decree, with the goals of contributing to permanent protection of the river's natural ecosystem and of providing lasting value to the public."

The trustees also developed objectives that were formulated to support the Council's goals. The implementation of the Restoration Plan will facilitate the meeting of these objectives.

* Promote a land ethic which includes stewardship and responsibility for the natural resources.

* Promote watershed management that is consistent with the river's natural dynamic processes.

* Target the entire watershed, including tributaries and upland systems, with an emphasis on contiguous wildlife corridors.

* Enhance and maintain the natural biological diversity of the watershed.

* Maximize benefits to sensitive species, including listed threatened and endangered species and species of special concern.

* Incorporate local government along with public participation in the restoration plan development and implementation.

* Include community outreach by way of education projects and through other restoration activities such that the biological, economic, and aesthetic importance of the river is conveyed.

* Promote restoration projects with long-lasting benefits.

* Promote partnerships and collaborative efforts to maximize funding, efficiency, and expertise.

2.0 Affected Environment and Natural Resources of Concern

The Santa Clara River is a wonderfully dynamic and exciting river. It is also one of the last of the more natural rivers in the southern California region. It flows from east to west, fed by a number of streams flowing south out of the San Rafael and Santa Ynez Mountains, and streams flowing north out of the San Gabriel and Santa Susana Mountains in the Transverse Range in Ventura and Los Angeles Counties. The Santa Clara River surface flows and channel width vary over the course of the year dependent on agricultural and domestic water use, wastewater discharges, rainfall and subsurface flows. It may be a raging river during the wet season and an intermittent stream during the dry months. It braids and winds its way for approximately 100 miles from the headwaters in the San Gabriel Mountains to the Pacific Ocean, with a watershed covering 1600 square miles.

In pre-Columbian times, the indigenous Chumash and Tataviam people lived along the Santa Clara River. The culture of these Native Americans was closely tied to the land, using sustainable land management practices for food production, shelter, basketry and medicine. In 1782, Spanish priests established the San Buenaventura Mission with the development of land along the river for crops and livestock. During the first half of the 1800s, the raising of livestock on large ranchos became the dominant occupation along the river. Over the later half of the 1800s, land use along the river shifted from ranching to agriculture. Oil enterprises also became established during this time. The 1900s brought the railroad, road and bridge construction, sand and gravel mining, increasing population, urban development and commercial growth. These historical changes have resulted in habitat destruction and fragmentation, decreased water quality, diversion of surface and groundwater, channelization, encroachment into the floodplain of the river, and the introduction of non-native plant and animal species.

Although the riparian resources of the Santa Clara River were compromised by activities that have occurred over the last two centuries, significant areas of native riparian habitat still exist along the river. These include beach, alkali marsh, southern foredune, active channel, mule fat scrub, southern willow scrub, southern willow riparian woodland, southern cottonwood-willow riparian forest, arrow weed scrub, alluvial scrub, big sagebrush scrub, and valley freshwater marsh and ponds. The upland riparian habitats that exist along the Santa Clara River include coastal sage scrub, chamise chaparral, coast live oak woodland, and juniper woodland.

A diverse variety of wildlife and plant species is associated with these habitat areas, some of which are sensitive species. Sensitive species are those that are either federally or state listed as endangered or threatened, candidates for listing as endangered or threatened, and those species considered rare or species of special concern by other local public and private resource agencies. There are seven plant, one insect, five fish, eighteen bird, two amphibian, six reptile, and three mammal species considered to be sensitive in the watershed. The sensitive plants include Peirson's morning-glory, Nevin's barberry, slender-horned spineflower, short-joint beavertail cactus, Ventura marsh milkvetch, Ojai fritillary and salt marsh bird's beak. The sensitive fish include the unarmored threespine stickleback, arroyo chub, Santa Ana sucker, southern steelhead trout and tidewater goby. The sandy beach tiger beetle is the sensitive insect found in the Santa Clara River watershed. The sensitive birds are the western least bittern, western snowy plover,

California least tern, elegant tern, long-billed curlew, white-faced ibis, bank swallow, Belding's savannah sparrow, least Bell's vireo, southwestern willow flycatcher, yellow warbler, yellow-breasted chat, loggerhead shrike, western yellow-billed cuckoo, white-tailed kite, Cooper's hawk, northern harrier and sharp-shinned hawk. The sensitive reptiles and amphibians are the San Diego horned lizard, two-striped garter snake, south coast garter snake, southwestern pond turtle, silvery legless lizard, coast patch-nosed snake, arroyo toad and California red-legged frog. Finally, the sensitive mammals of the Santa Clara River watershed include the mountain lion, Townsend's big-eared bat and western mastiff bat.

In 1769, Father Juan Crespi recorded his observations of the Santa Clara River. He wrote about "tall and thick cottonwoods and oaks," and an "arroyo with a great deal of water which runs in a moderately wide valley, well grown with willows and cottonwoods." The biological diversity of habitats and associated wildlife can be promoted through restoration efforts. The restoration efforts that will be implemented through this Restoration Plan will compensate for the injured natural resources from the oil spill while at the same time enhancing and maintaining more of the historical and natural biological diversity of the Santa Clara River watershed.

3.0 Description of Restoration Alternatives

3.1 Development of Restoration Alternatives

The Consent Decree provides guidance for restoration projects along the Santa Clara River. It is stated in the Consent Decree that restoration funds shall be used "for habitat rehabilitation, revegetation, and/or protection of areas within the Santa Clara River watershed, and wildlife projects which will benefit the least Bell's vireo and other threatened or endangered species or species of special concern in and along the Santa Clara River." Since the signing of the Consent Decree, the Trustee Council has held numerous meetings regarding the restoration planning for the Santa Clara River. These meetings have included sessions with biological experts, planners, and managers from both public and private agencies and groups, to assist the Trustee Council in the development of goals, objectives, evaluation criteria, and restoration projects.

In order to involve the public earlier on in the restoration planning process, a public informational/scoping meeting was held in October 1998 to receive ideas and suggestions from the public on restoration alternatives. The public provided general recommendations and some specific suggestions for restoration projects to be considered in the Restoration Plan. Some of the more general recommendations include the use of matching funds, partnering with other groups, coordinating efforts with existing community plans, consideration of the natural hydrological regime of the river, establishing endowments, developing long-term and watershed-wide improvements, and recognizing wildlife corridors and public access in our restoration efforts. The more specific suggestions for restoration projects include an invasive non-native species control program, research for natural methods of Arundo control, bank stabilization measures to reduce erosion, an educational guidebook about the river and its natural resources, fund the completion of the Santa Clara River Enhancement and Management Plan (SCREMP), incentive programs to subsidize private landowners efforts, an oil spill prevention program, research studies of the river, and the acquisition and protection of lands throughout the watershed including the tributaries, the lower reaches, wetlands near Santa Paula and lands along the spill area.

All of the more general recommendations and the specific suggestions for restoration projects that were submitted during and subsequent to the scoping meeting were considered by the Trustee Council in developing the proposed restoration alternatives. Those suggested restoration projects resulting from the scoping meeting that were not selected for further consideration and inclusion as proposed restoration alternatives are as follows:

* Funding the completion of SCREMP - The Trustee Council has the obligation to allocate restoration funds into actual restoration projects. The Council does recognize that there may be the opportunity in the future to fund restoration projects resulting from SCREMP. Such opportunities could be included under one of the proposed restoration alternatives in this plan, e.g., Watershed Evaluation and Monitoring.

* Oil spill prevention program - An oil spill prevention program could include such activities as monitoring and maintenance of pipelines and wells. The Trustee Council cannot approve

funding for any project or effort that would be required or authorized under any other applicable laws or regulations. However, there could be an opportunity under the proposed Information and Education restoration alternative for promoting oil spill awareness and prevention, but not under the auspices of an established program such as currently funded by California's Office of Spill Prevention and Response.

Since the oil spill in 1994, avian studies have been performed along the Santa Clara River. Initially, the purpose of the studies was to assist the trustees in determining the injuries that occurred to the natural resources as a result of the oil spill. Since the settlement, the focus of the avian studies has shifted to restoration planning. The information that has been gathered is assisting the Council in prioritizing areas for acquisition, protection and restoration.

The Bren School of Environmental Science and Management, University of California, Santa Barbara, has assisted the Council in providing a method for selecting sites for land acquisition and restoration. In a report submitted to the Council, the Bren School recommended sites for acquisition and restoration. The Council is considering these recommendations as the restoration planning and implementation progresses.

The Council has met with the State Coastal Conservancy, The Nature Conservancy, the Trust for Public Land, and the Center for Natural Lands Management to exchange ideas and receive input on restoration projects and land acquisition opportunities. The Council has had discussions and toured the Santa Clara River area with Newhall Land and Farming, Friends of the Santa Clara River, City of Santa Clarita and private landowners in order to better understand different perspectives and interests, and pursue potential partnerships that can be folded into restoration efforts.

The Trustee Council has considered all the ideas and suggestions submitted by others and has developed their own ideas for the restoration of the injured natural resources of the river. These ideas have been defined in terms of the restoration alternatives included in this Restoration Plan.

3.2 Restoration Alternative Evaluation Criteria

The Trustee Council developed evaluation criteria by which to evaluate, prioritize, and select restoration alternatives. The criteria is to be used in a more qualitative sense as opposed to a numerical ranking. The following evaluation criteria are not listed in any order of priority.

* Consistency with the trustees' restoration goals

The restoration alternative must meet the trustees' intent to restore natural resources in the Santa Clara River watershed, in accordance with the Consent Decree, with the goals of contributing to permanent protection of the river's natural ecosystem and of providing lasting value to the public. The more consistent the restoration projects are to the restoration goals, the higher the priority given to the proposed alternative under this criterion.

* Feasibility

This criterion is used to examine the technical, biological, regulatory, and political feasibility of a proposed restoration project. Trustees shall evaluate the soundness of the restoration technique, level of risk or uncertainty in implementing the project, the likelihood of success, and various other factors that influence feasibility of the alternative. Higher priority is given to a more feasible restoration alternative.

* Compliance with laws

The proposed restoration alternative must comply with all applicable laws including those that protect the health and safety of the public. In addition, the restoration alternative cannot serve as required mitigation for another project. Those restoration alternatives that do not comply will be eliminated from consideration.

* Duration of benefits

The mission of the Santa Clara River Trustee Council and the intent of the Consent Decree is to restore and protect the natural resources of the Santa Clara River watershed in perpetuity. Such restored resources would have to be again restored if future events damaged these resources. Those restoration alternatives that do not contribute to restoration and permanent protection of the natural resources will not be considered further.

* Avoidance of future or collateral injuries

The proposed restoration alternative shall avoid or minimize adverse impacts to the environment and the associated natural resources. Unavoidable and temporary adverse impacts may result when implementing the proposed project. The more permanent restoration project benefits will outweigh any temporary unavoidable adverse impacts. Restoration alternatives that provide for a greater avoidance of collateral injuries shall receive more consideration under this criterion.

* Benefits relative to costs

This criterion examines the relationship between expected benefits and expected costs of a restoration alternative. Trustees shall seek projects with the most cost-efficient approach to provide the same resource benefits. The lower the cost of providing the benefits, the higher the priority given to a restoration alternative under this criterion.

* Opportunities for collaboration

The trustees shall consider the possibility of matching funds, in-kind services, or volunteer assistance, as well as coordination with other ongoing or proposed restoration projects. Restoration alternatives that provide opportunities for a collaborative restoration effort shall receive a higher priority for this criterion.

* Endangered/threatened species and sensitive habitat areas

The trustees shall examine the ability of the restoration alternative to enhance and protect endangered and threatened species, and the more sensitive and rare habitat areas. A project that promotes the restoration, enhancement and protection of these species and habitat areas receives a higher priority for this criterion.

3.3 Proposed Restoration Alternatives

The Trustee Council has developed a reasonable number of possible alternatives for the restoration, rehabilitation, replacement, and/or acquisition of the equivalent of the injured natural resources. These proposed restoration alternatives meet the conditions of the Consent Decree, have been evaluated and selected through application of the evaluation criteria, and meet the goals and objectives outlined by the Trustee Council. Six proposed restoration alternatives have been identified by the Council, including a 'no action' alternative, and are defined as follows.

No Action - The 'no action' alternative looks at the ability of the injured natural resources to recover on their own. The 'no action' alternative is not to spend the $7.1 million allocated for natural resource damage restoration. Since the Trustee Council is committed and required under the Consent Decree to spend the allocated money on restoration, the 'no action' alternative will not be considered further as a viable alternative.

Land Acquisition/Conservation Easements - The Santa Clara River is a very dynamic river, with fluctuating flows from season to season. As such, the river needs the space to be the dynamic river that was so typical of southern California rivers in the past. Since the time of the Chumash, various pressures have been exerted upon the Santa Clara River system that have resulted in habitat destruction, decreased water quality, channelization, encroachment into the floodplain and introduction of non-native species. Through the protection and restoration of lands either through fee title/land purchase or through the establishment of permanent conservation easements, protection of the river into perpetuity would be assured and the river would be able to function more naturally. The recovery of endangered species associated with the river, such as the least Bell's vireo and the unarmored threespine stickleback, would be enhanced by the protection and restoration of riparian habitat. The Council proposes to allocate funds to the California State Coastal Conservancy and The Nature Conservancy, a state agency and a private organization, respectively. Both of these groups are actively involved in the acquisition, protection and restoration of lands in the Santa Clara River watershed. Trustee Council funds would be partnered with California State Coastal Conservancy and The Nature Conservancy funds. The Trustee Council shall concur on properties acquired with Council funds and lands would only be purchased from willing sellers. A contract would be agreed upon and signed between the Trustee Council and the Coastal Conservancy or The Nature Conservancy that would define the conditions of the purchase, the management and the restoration of the acquired land. Land values currently range from $500 - $35,000 per acre depending on whether the land is river bottom, riparian, agricultural or upland. The ownership, management and restoration of the acquired lands would be cared for by both Conservancies, and these responsibilities may ultimately be transferred to a land trust, a public natural resource agency, a

resource group or a Joint Powers Authority. Transfer of lands to a land trust, non-profit group or Joint Powers Authority would be subject to the same level of protection that a public natural resource agency would have to provide. While the Trustee Council would concur on the ownership, management and restoration plans for lands that are acquired with Council funds, restoration settlement funds shall not be allocated towards the management or restoration aspects of the lands under this alternative. However, funding for the management and restoration of acquired lands may fall under the invasive non-native plant species control or restoration project grants program alternatives.

Invasive Non-native Plant Species Control - This restoration alternative includes the implementation of programs that will control invasive non-native plant species. The Bureau of Land Management has estimated that 4,600 acres a day in the western United States alone are lost to invasive non-native plants, rendering land biologically impoverished. It is recognized in the recovery plans for the least Bell's vireo and the southwestern willow flycatcher of the importance of invasive exotic species control for the recovery of these species. Realizing that methods for control range from well-established to experimental, some of the monies may be spent on the research of existing or new methods. The majority of the allocated funds, however, would be spent on the actual control of exotic plants. In particular, giant reed, better known as Arundo, has infested the Santa Clara River watershed replacing native riparian vegetation and degrading wildlife habitat (Figure 4). It has been estimated that Arundo is spreading through Ventura County waterways at an average rate of 10% per year. The Trustee Council would partner with other groups who are presently involved with invasive plant species control. These include the Ventura County Resource Conservation District/Ventura County Arundo Task Force, the Angeles National Forest, the Center for Natural Lands Management and private landowners. It is likely that settlement monies would be allocated to an endowment with accrued interest money funding the actual invasive non-native plant species control projects and monitoring efforts. An endowment would assure the availability of funds for long-term management.

Figure 4. Arundo growing along the Santa Clara River.

Restoration Project Grants Program - This restoration alternative provides a grants process to attract and implement restoration projects from the public, preferably from the local Santa Clara River community. These would include a variety of smaller-scale projects that promotes the restoration efforts along the Santa Clara River. Project proposals would be evaluated and selected for funding by the Trustee Council. The Council would have the oversight responsibility for the implementation and monitoring of projects in order to ensure completion and success. This restoration alternative may be coordinated with the Partners for Fish and Wildlife program

and success. This restoration alternative may be coordinated with the Partners for Fish and Wildlife program which is a land stewardship program that is administered by the U.S. Fish and Wildlife Service. The Partners program provides financial and technical assistance to private landowners, local agencies and tribal governments to conduct voluntary habitat restoration projects.

Information and Education - This restoration alternative includes various outreach activities that are related to the other restoration alternatives. Conveying information and educating the public about restoration are critical to the long-term stewardship of the land. Outreach activities may include incorporating restoration programs into school curriculums, providing kiosks and interpretive displays along the river where restoration activities are occurring, developing a volunteer/stewardship program for involvement by landowners and other local groups in the restoration efforts, and promoting oil spill awareness through education.

Watershed Evaluation and Monitoring - This restoration alternative includes various projects that involve watershed evaluation and monitoring efforts. These efforts would assist us to better understand the systems that we will restore and to monitor restoration success. This could include such efforts as funding the continuance of the avian studies, mapping, monitoring of watershed processes or SCREMP implementation activities.

4.0 Environmental Consequences of Restoration Alternatives

The preparation of a Natural Resource Damage Assessment Restoration Plan, a federal action, triggers the National Environmental Policy Act (NEPA) review and documentation requirements when making decisions affecting the quality of the human environment. The charge of NEPA is for "productive harmony between man and nature." The federal agency, namely the U.S. Fish and Wildlife Service, is required to coordinate their actions, promote and obtain public participation in the decision-making, and disclose the environmental consequences of the federal action, or in this case, the proposed restoration alternatives for the Santa Clara River. Since the California Department of Fish and Game is also a trustee, the preparation of this Restoration Plan/Environmental Assessment also triggers the California Environmental Quality Act (CEQA) review and documentation requirements under state law.

Although restoration measures are intended to recover or rehabilitate injured natural resources, there may be negative environmental impacts associated with the restoration along with the positive environmental benefits resulting from the restoration. Thus, the Trustee Council shall evaluate the proposed restoration alternatives for environmental consequences and benefits related to the physical and biological environment, the economic and social aspects, and recreational use. In addition, the short- and long-term, direct and indirect, and cumulative impacts are addressed.

For all of the proposed restoration alternatives, the potential for project activities to affect prehistoric and historic resources, Native American human remains and cultural objects, will be determined early in project planning. To this end, the procedures in 36 CFR 800 implementing Section 106 of the National Historic Preservation Act, requirements of the Native American Graves Protection and Repatriation Act, and policies and standards specified in the Fish and Wildlife Service Manual 614 FW 1-5 will be followed.

Land Acquisition/Conservation Easements - The restoration alternative of acquiring land and establishing conservation easements concerns land protection, management and restoration. Through land acquisition and conservation easements, areas would be permanently protected and the river would be able to function more naturally. Restoration and management of the acquired land would be necessary including such activities as removing berms, recontouring to a more natural landscape, controlling invasive non-native plants such as Arundo and re-establishing native plants. Although all of these activities result in the long-term benefit of the restoration of the Santa Clara River, several short-term impacts may occur.

For this restoration alternative, however, it is the Trustee Council's intent to allocate restoration settlement funds strictly for land acquisition or the establishment of conservation easements and not to fund land restoration and management activities. At this time, it is more important to protect the land. Thus, there are no environmental impacts associated with land acquisition or the establishment of conservation easements. Restoration and management would come later under the responsibility and authority of various agencies or groups. The Trustee Council would concur on any restoration and management plans that concern lands that are acquired with Trustee Council funds. The agencies that comprise the Council, the U.S. Fish and Wildlife

Service and the California Department of Fish and Game, would also review any restoration activities that routinely require agency review, separate from Trustee Council involvement.

Land acquisition and conservation easements benefit the physical environment and the biological resources associated with the land by providing protected space for the physical and biological resources to function in a more natural state over the long-term. The recreational aspects associated with land acquisition and protection, such as hiking and wildlife observation, result in positive benefits to the economy and society as a whole.

Invasive Non-native Plant Species Control - The long-term environmental benefit resulting from an invasive non-native plant species control program includes the proliferation of native species in a more balanced, diverse riparian system where the invasives are out-competed by the natives. An invasive non-native species control program for the Santa Clara River requires a long-term, vigilant effort aimed at plant species, particularly, Arundo.

The current methods used for Arundo control include physical removal either manually or by mechanical means, cutting and mulching in-place, stockpiling and drying the canes, burning and herbicide application of either the cut stumps or foliar spraying. Arundo control requires a whole suite of methods dependent on such things as site location, accessibility and the features of the Arundo stand itself, whether it be primarily Arundo or dispersed among native vegetation. In addition, it may be necessary to re-establish native vegetation, particularly if a large dense stand of Arundo is removed. In most cases, however, the native vegetation will naturally propagate and replace the Arundo.

The physical removal of Arundo, particularly by mechanical means, and the herbicide treatment are invasive methods that may have environmental consequences on the physical and biological environment. The consequences include the physical presence of a tractor or bulldozer in the environment, in areas where native vegetation occurs along with the Arundo, and where wildlife also occurs in association with the riverine habitat. Another consequence is the use of chemical means to kill Arundo. The environmental impacts can be minimized by the use of low impact machinery, such as the hammer flail device, that has been successfully used to mulch Arundo in place with minimal resprouting. Manual removal of Arundo when possible would also minimize impacts from mechanical removal. Herbicide treatment involves the use of a glyphosate Roundup or its aquatic equivalent Rodeo. These herbicides have been approved for riparian or aquatic use by the U.S. Environmental Protection Agency and the California Department of Pesticide Regulation and pose no appreciable harm to wildlife, fish and other aquatic species if used properly. The use of herbicides would be minimized or avoided depending on the situation. Herbicide use is recommended in the fall when it is most readily and efficiently taken up by Arundo. Also, there is less impact to wildlife in the fall of the year since it is outside the breeding season. The short-term impacts associated with mechanical removal and herbicide use are outweighed by the long-term benefit of removing and controlling the Arundo in order to promote the native vegetation and diversity of species. It is the intent of the Trustee Council to partner with the Ventura County Resource Conservation District, through the Arundo Task Force Group, to prepare a programmatic environmental assessment (EA) and environmental impact report (EIR) for the entire Santa Clara River watershed prior to the initiation of projects, along

with obtaining the required permits for project implementation. This will cover all anticipated impacts associated with invasive plant species control.

From an economic standpoint, there is an interest and may be a market for recycling Arundo for paper and wood products, for energy and as mulch. From a social and recreational perspective, Arundo removal can become a means by which local landowners and groups can promote and participate in stewardship of the land. The recreational aspects of the Santa Clara River would benefit through the long-term enjoyment of a resource that is more in balance and diverse with native species.

Restoration Project Grants Program - A restoration project grants program includes the submittal of restoration projects from the public that would be evaluated, selected, funded and implemented through a grants process. Once the projects are selected for funding, the necessary documentation, environmental review of potential impacts and required permitting procedures would be followed prior to implementation of the projects. This restoration alternative would not be implemented until after the Restoration Plan is final. Thus, there are no environmental impacts associated with this restoration alternative to evaluate at this time. There is, however, a benefit to the local economy through the funding of restoration projects to local individuals and groups that will ultimately benefit the Santa Clara River watershed. It is anticipated that society as a whole would benefit and the recreational aspects of the river would be enhanced by these projects.

Information and Education - This restoration alternative provides a long-term environmental benefit to society through the dissemination of information and educational programs concerning the Santa Clara River, its associated resources, restoration, oil spill awareness, etc. The environmental consequences resulting from education include the promotion of understanding and compassion for our environment, the land, the resources, and how we are part of it all. Some of the educational programs could be accomplished in a more recreational setting and tone, such as through kiosks or interpretive displays at restoration sites along the river. The location of these informational displays would be selected on the basis of no or minimal impact to the surrounding area with materials that are non-toxic to the environment. If necessary, at that time, the environmental consequences would be evaluated and the required permitting procedures would be followed prior to project implementation.

Watershed Evaluation and Monitoring - This restoration alternative includes projects that would facilitate evaluation and monitoring efforts. As such, the project activities would be anticipated to have no negative environmental consequences. The environmental benefit would be the knowledge that is gained from a better understanding of watershed processes, associated habitats and wildlife, and also to monitor the restoration progress and success of the restoration efforts. This would in turn benefit society as a whole.

Cumulative Environmental Consequences - At this time, the only potential negative environmental impacts are those associated with invasive non-native plant species control. Once the grants program restoration projects are further defined, potential impacts from those projects

will then be identified and evaluated. Presently, however, cumulative impacts are only those associated with invasive plant species control.

The environmental consequences associated with invasive non-native plant species control will be further defined and evaluated under a watershed-wide programmatic EA/EIR. Once the grants program restoration projects are defined, potential impacts from those projects will then be identified and evaluated. The programmatic EA/EIR will be written and the grants program restoration projects will be defined after the Restoration Plan is final. Therefore, it is premature to establish a finding of no significant impact (FONSI) for these projects at this time. It is possible, however, to establish a FONSI for the land acquisition/conservation easements, information and education projects, and the watershed evaluation and monitoring efforts in this final Restoration Plan.

5.0 Preferred Restoration Alternative

The Consent Decree allows for restoration to occur throughout the Santa Clara River watershed. Thus, the Trustee Council has chosen to take a more holistic view when considering and selecting restoration opportunities. After careful consideration of the proposed restoration alternatives described above, the Trustee Council has selected their preferred restoration alternative. The preferred restoration alternative includes all of the proposed restoration alternatives, except for the **No Action** alternative, namely, **Land Acquisition/Conservation Easements, Invasive Non-native Plant Species Control, Restoration Project Grants Program, Information and Education, and Watershed Evaluation and Monitoring**. The Council recognizes the importance of all five alternatives in the overall restoration of the river.

The focus of the restoration will be protecting, managing and restoring the land through land acquisition and invasive non-native plant species control. The Trustee Council will partner with and allocate funds to the California State Coastal Conservancy and The Nature Conservancy to acquire land and to orchestrate the long-term management and restoration responsibilities for those lands. These two groups have proven their ability and expertise in the land acquisition arena. The establishment and implementation of an invasive non-native plant species control program will require partnership with various groups and agencies, particularly, the Ventura County Resource Conservation District which is presently coordinating such an effort.

A restoration project grants program will provide an opportunity for various individuals and groups to submit restoration project proposals, promoting stewardship and ownership in the process, and ultimately to implement a variety of smaller-scale restoration projects that will benefit the watershed as a whole. The importance of information and education cannot be emphasized enough in our restoration efforts. It is only through people's awareness, understanding, respect and desire to protect and restore our natural resources today, that future generations will have their natural heritage to enjoy tomorrow. Finally, watershed evaluation and monitoring efforts will provide additional information that we need to better understand the Santa Clara River watershed and to monitor the progress and success of the restoration activities.

6.0 Implementation, Management, Monitoring and Oversight

The Trustee Council has the ultimate authority and responsibility for the successful implementation and completion of the restoration projects. For the restoration alternatives, however, assistance will be provided by various groups and individuals for the implementation, management and monitoring of the projects.

The Trustee Council will allocate funds to the California State Coastal Conservancy and The Nature Conservancy for the acquisition of land and the establishment of conservation easements. The negotiations with willing sellers and real estate transactions will be accomplished by these two Conservancies. The Trustee Council will have approval authority on parcels acquired with Council funds. The management and monitoring aspects of acquired lands will not be paid for with Council funds. However, the Trustee Council will have the opportunity to provide input and to approve of the management and monitoring plans for lands acquired with Council funds. There may be opportunities, however, where invasive non-native plant species control, grant funded restoration projects, information and education programs, and/or watershed evaluation and monitoring can occur on or in relation to lands acquired with Council funds. In these situations, the Council would have more of an oversight role in the management and monitoring of these programs. The Trustee Council and the Conservancies are committed to the restoration, permanent protection and wise management of lands acquired in the Santa Clara River watershed. Upon the cessation of the Trustee Council, the parent agencies, namely the U.S. Fish and Wildlife Service and the California Department of Fish and Game, will assume oversight jurisdiction and authority. This oversight authority is to ensure that properties acquired and conservation easements established with Council funds are properly and effectively protected, restored and managed for fish and wildlife and their associated habitats, in perpetuity.

The Trustee Council will allocate funds to another group who will coordinate the invasive non-native plant species control restoration program. It is anticipated that the Ventura County Resource Conservation District will be the primary coordinator of such an effort, through the Arundo Task Force, partnering with other groups and individuals such as the Forest Service, the Center for Natural Lands Management and private landowners. It will require a long-term commitment of resources by all partners. It is anticipated that an endowment will be established to fund such a long-term endeavor. The management and monitoring of an invasive non-native plant species control program will be the responsibility of the Resource Conservation District and its partners. It is likely that invasive plant species will never be completely eliminated from the watershed, however, invasive species control is the goal. Success criteria will be defined and program success will be determined by the Resource Conservation District, the Trustee Council and other partners. The Trustee Council will have the responsibility, along with other contributors, for oversight of the program to ensure success and completion over the long-term.

For the restoration project grants program, the Trustee Council will provide a notice for the submittal of proposed restoration project proposals from the public. The Council will develop criteria by which to evaluate and select restoration project proposals. Once the projects are selected, they will be implemented and completed with Trustee Council oversight. Each project will include performance and success criteria by which to determine project completion. This

restoration project alternative may be partnered with the Partners for Fish and Wildlife program for administration and implementation.

Although the Trustee Council will fund and coordinate with other partners in order to implement an information and education program, the Council has the oversight responsibility to ensure that the educational projects are completed. The educational program may include such projects as partnering with a school group to develop a curriculum, a consultant to create an interpretive display or the Resource Conservation District to establish a volunteer stewardship program for invasive non-native species control. The Trustee Council will seek assistance from partners having expertise in the educational field to develop, implement, manage, monitor and determine success of the educational programs.

The Trustee Council has the oversight responsibility to ensure that the watershed evaluation and monitoring efforts are implemented and are successful. The Council will fund and coordinate with other partners when appropriate to implement, manage and monitor projects, and determine when success is achieved or when the projects are complete.

The Santa Clara River Trustee Council is responsible for the development of the Restoration Plan and the allocation of funds for the implementation of the Restoration Plan. The Trustee Council is also responsible for oversight and monitoring of the restoration efforts to ensure the satisfactory and successful completion of the restoration activities.

7.0 Budget Summary and Timetable

As stated and agreed to in the Consent Decree, the 1994 oil spill resulted in the settlement of $7.1 million dollars for natural resource damages. After the Consent Decree was signed, this money was deposited in the Department of Interior's Natural Resource Damage Assessment and Restoration Fund, where the money has been accruing interest and invested in U.S. government securities, namely Treasury bills or Treasury notes. The allocation of restoration fund money for the preferred restoration alternative is stated as follows, in approximate percentages of the total, since the total fund amount increases over time due to the interest.

Land Acquisition/Conservation Easements	60%
Invasive Non-native Plant Species Control	20%
Restoration Project Grants Program	10%
Information and Education	5%
Watershed Evaluation and Monitoring	5%
Total	100%

Restoration fund money will be allocated for land acquisition/conservation easements to the California Coastal Conservancy and The Nature Conservancy once parcels have been identified and agreed to by the Trustee Council. Restoration fund money will be allocated to the Ventura County Resource Conservation District as the coordinating group for the invasive non-native plant species control program. It is anticipated that an endowment will be established to fund such an effort over the long-term. Restoration fund money will be allocated to specific restoration projects once the projects have been identified and selected through a grants process. Information and education and watershed evaluation and monitoring will also receive funding once projects have been identified. The Trustee Council has oversight responsibility for all the restoration efforts to ensure that the projects are implemented, the monies are spent wisely, the projects are completed and the restoration objectives are met. Expenditures will be tracked and projects will be monitored for completion and success. The above allocated percentages include any necessary oversight and monitoring costs. More detailed budgets will be developed once the restoration projects are more specifically defined. This final Restoration Plan/Environmental Assessment begins the implementation of restoration projects for the Santa Clara River watershed.

Literature Cited

Anderson, M. K. 1996. Tending the Wilderness. Restoration and Management Notes, Volume 14, Number 2.

Cantara Trustee Council. 1997. Strategic Plan, Cantara Spill Restoration Program.

Cantara Trustee Council. 1998. Draft Upper Sacramento River Resource Protection Plan

Coastal Conservancy. 2000. Lower Santa Clara River, Ventura County, California.

Court, D., Glatzer, J., Hard, S., Keith, K., McDonald, J. and F. Ogushi. 2000. Prioritizing Sites Along the Santa Clara River for Conservation of Threatened and Endangered Species. A Group Project for the Degree of Master's in Environmental Science and Management for the Donald Bren School of Environmental Science and Management, University of California, Santa Barbara.

Cox, R., Little, H., Millet, W. and C. Tam. 2001. The Nature Conservancy, Lower Santa Clara River Focus Plan.

Fish and Wildlife Service. 1985. Recovery Plan for the Unarmored Threespine Stickleback. U.S. Fish and Wildlife Service, Portland, OR.

Fish and Wildlife Service. 1998. Draft Recovery Plan for the Least Bell's Vireo. U.S. Fish and Wildlife Service, Portland, OR.

Fish and Wildlife Service. 1999. Recovery Plan for the Arroyo Southwestern Toad. U.S. Fish and Wildlife Service, Portland, OR.

Fish and Wildlife Service. 2000. Draft Restoration Guidance. U.S. Fish and Wildlife Service, Washington, D.C.

Fish and Wildlife Service. 2001. Draft Recovery Plan for the Southwestern Willow Flycatcher. U.S. Fish and Wildlife Service, Albuquerque, NM.

Labinger, Z. and J. Greaves. 1997. Results of 1997 Avian Surveys and Least Bell's Vireo Monitoring: Restoration Phase of the ARCO-Four Corners January 17, 1994 Oil Spill on the Santa Clara River, California.

Labinger, Z. and J. Greaves. 1999. Results of 1998 Avian Surveys and Least Bell's Vireo Monitoring: Restoration Phase of the ARCO/Four Corners January 17, 1994 Oil spill on the Santa Clara River, California.

Labinger, Z. and J. Greaves. 2001. Summary Report of Avian Studies (1994-1999) Following the ARCO/Four Corners January 17, 1994 Oil Spill on the Santa Clara River, California.

Labinger, Z. and J. Greaves. 2001. Results of 2000 Avian Surveys and Least Bell's Vireo Monitoring: Restoration Phase of the ARCO/Four Corners January 17, 1994 Oil Spill on the Santa Clara River, California.

Newhouser, M., Cornwall, C. and R. Dale. 1999. Arundo, A Landowner Handbook. Sonoma Ecology Center and California State University, Sacramento.

Oil Pollution Act Regulations. 1996. Natural Resource Damage Assessments. Subchapter E, Part 990.

Santa Clara River Project Steering Committee. 1996. Santa Clara River Enhancement and Management Plan Study. Biological Resources, Volume I.

Santa Clara River Project Steering Committee. 1996. Santa Clara River Enhancement and Management Plan Study. History of the Santa Clara River.

Sigg, J. 1998. The Role of Herbicides in Preserving Biodiversity. Fremontia, Volume 26, Number 4.