FINAL

SANTA CLARA RIVER EXXONMOBIL OIL SPILL

NATURAL RESOURCE DAMAGE ASSESSMENT AND RESTORATION PLAN AND ENVIRONMENTAL ASSESSMENT

PREPARED BY:

THE SANTA CLARA RIVER TRUSTEE COUNCIL

UNITED STATES FISH AND WILDLIFE SERVICE
AND
CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
OFFICE OF SPILL PREVENTION AND RESPONSE

MARCH 2013

"In every walk with nature, one receives far more than he seeks."

-John Muir

“Through the process of interagency cooperation woven with public participation, we are learning how to repair what we have broken in nature while building lasting relationships with those who value community and our natural heritage.”

-Anonymous

TABLE OF CONTENTS

LIST OF ACRONYMS

ARCO	Atlantic Richfield Company
BLM	U.S. Bureau of Land Management
CEQA	California Environmental Quality Act
Council	Santa Clara River Trustee Council
CDFW	California Department of Fish and Wildlife - Office of Spill Prevention and Response
DOI NRDAR	Department of Interior Natural Resources Damage Assessment Restoration Fund
FSCR	Friends of the Santa Clara River
FWS	U.S. Fish and Wildlife Service
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
NHPA	Nationa Historic Preservation Act
NRDA	Natural Resources Damage Assessment
NRS	Natural Reserve System
OPA	Federal Oil Pollution Act of 1990
SCIPR	Santa Clara River Invasive Plant Removal Program
SCR	Santa Clara River
TNC	The Nature Conservancy
UC	University of California
UCLA	University of California Los Angeles
UCSB	University of California Santa Barbara
VCRCD	Ventura County Resource Conservation District

EXECUTIVE SUMMARY

On January 31, 1991, ExxonMobil's M-70 pipeline, which conveys crude oil from the Lebec area, in Kern County, through Newhall and on to ExxonMobil's Torrance refinery, ruptured at the Valencia Golf Course in Valencia, Los Angeles County (the "ExxonMobil spill"). The ExxonMobil spill discharged approximately 1,777 barrels (74,634 gallons) of crude oil - at least 1,000 barrels (42,000 gallons) of which entered the Santa Clara River (SCR) and contaminated approximately 15 miles of the river channel and riparian corridor before the oil was contained at the Torrey Road crossing, near Piru, in Ventura County. The California Department of Fish and Wildlife– Office of Spill Prevention and Response (CDFW) and the U.S. Fish and Wildlife Service (FWS) (collectively, the "Trustees" or "Trustee Agencies") conducted a natural resource damage assessment (NRDA) to determine the injuries from the spill to the natural resources of the SCR and to develop and implement appropriate actions to restore, rehabilitate, replace, or acquire the equivalent of the injured natural resources.

Impacts from the ExxonMobil spill included not only injuries to wildlife, aquatic species and their habitats from oil contamination but also from the cleanup itself. Cleanup activities included removing oiled vegetation, excavating contaminated soil and sediment, backfilling, and grading of the river bed. Specific impacts of the spilled oil and subsequent cleanup included the death and/or injury to macroinvertebrates, amphibians, reptiles, birds, and mammals, and the oiling of over 23 acres of vegetation. Undoubtedly, additional animal species were impacted beyond those collected during the response. The oil also impacted the habitat of the unarmored threespine stickleback, a species listed as endangered under the both federal and state law.

On January 17, 1994, three years after the ExxonMobil spill, a pipeline operated by the Atlantic Richfield Company -- Fourcorners Pipeline Company (ARCO) ruptured, spilling 4,600 barrels (190,000 gallons) of oil into the SCR near Valencia, California (the "Arco spill"). The Arco spill and its subsequent cleanup activities affected fish, wildlife, and their habitats from Valencia to Piru along virtually the same reach of the SCR as the 1991 ExxonMobil spill. The Trustees conducted an NRDA for the ARCO spill. A federal court entered a Consent Decree for the ARCO spill on January 17, 1997 which included a payment of $7.1 million for natural resource damages. The Santa Clara River Trustee Council (Council), consisting of members selected from the Trustee Agencies, was formed to develop and implement a plan for restoring resources damaged by the ARCO Spill and to allocate settlement funds associated with the restoration effort. The Santa Clara River ARCO Oil Spill Final Restoration Plan and Environmental Assessment (ARCO Restoration Plan) was finalized in October of 2002.

On October 29, 2002, nearly 12 years after the ExxonMobil oil spill, a federal court entered a Consent Decree which included a payment of $2.65 million (plus the accrued interest on the total $4.7 million settlement amount) for natural resource damages. Since the ExxonMobil and ARCO spills occurred in virtually identical reaches of the SCR and the resources injured and potential restoration actions to address those injuries were similar, the Trustees decided it would

be efficient for the two Councils to coordinate their functions for the two settlements. The ExxonMobil Council has now prepared and is seeking public comment on this draft ExxonMobil Natural Resource Damage Assessment and Restoration Plan and Environmental Assessment (draft ExxonMobil Restoration Plan). Upon considering public comment and issuing a Final Restoration Plan, it will proceed with designing, permitting, implementing, monitoring, and overseeing restoration projects in the SCR watershed for the ExxonMobil settlement, as well as continuing to perform its responsibilities for the ARCO settlement.

The purpose of the draft ExxonMobil Restoration Plan is to outline and to facilitate public review of the Council's proposed restoration actions to restore, rehabilitate, replace or acquire the equivalent of the natural resources injured by the ExxonMobil spill. The ExxonMobil Restoration Plan is intended to be complementary to the ARCO Restoration Plan in that the proposals herein are based upon information gathered and activities accomplished during implementation of the ARCO Restoration Plan. Accordingly, the Council proposes to allocate the ExxonMobil settlement dollars to land acquisition/conservation easements and to habitat restoration projects.

In 2002, the Trustees signed a Memorandum of Understanding (MOU) relating to the ExxonMobil spill. That MOU provides guidelines for the development of the ExxonMobil Restoration Plan and for implementation and oversight of restoration efforts to assure their success.

1.0 INTRODUCTION

The purpose of the draft ExxonMobil Restoration Plan is to outline and provide a framework for the proposed restoration alternatives that the Council believes will restore, rehabilitate, replace or acquire the equivalent of the natural resources along the SCR injured as a result of the ExxonMobil spill. The purpose of this draft plan is also to inform and to seek input from the public on the overall plan including the restoration actions under consideration by the Council. With the release of this draft ExxonMobil Restoration Plan, the Council invites the public to comment and to provide specific ideas or proposals for projects that could be included in the final ExxonMobil Restoration Plan under any of the proposed restoration alternatives set forth herein.

1.1 OIL SPILLS AND NATURAL RESOURCE INJURIES

During the 1990s, two oil spills occurred on the SCR; the ExxonMobil spill in 1991 and the ARCO spill in 1994. On January 31, 1991, ExxonMobil's M-70 Pipeline ruptured at the Valencia Golf Course in Valencia, Los Angeles County, causing approximately 1,777 barrels of crude oil to be spilled into the environment. The M-70 Pipeline conveys crude oil from the Lebec area in Kern County, through the Newhall area near Valencia and on to ExxonMobil's Torrance Refinery. Following the rupture, at least 1,000 barrels of oil flowed over the Valencia golf course and into the SCR, oiling the riparian corridor for approximately 15 miles before the oil was contained at the Torrey Road crossing, near Piru, in Ventura County. This oil spill and resulting cleanup operations impacted natural resources along the spill pathway in the SCR causing death and injury to plants and animals associated with the river system. Cleanup of the river included removing oiled vegetation, excavating soil and sediment, backfilling, and grading the river bed. As authorized under the federal Oil Pollution Act of 1990 (OPA) (33 U.S.C. §§ 2701 *et seq*.), the Trustees conducted a NRDA to determine the extent of injuries to natural resources from the spill and the resultant cleanup activities.

Acute impacts observed during the ExxonMobil spill included:

- 186 birds killed;
- 108 birds treated and released;
- one amphibian killed ;
- one southwestern pond turtle treated and released;
- 17 mammals killed;
- Two mammals treated and released;
- 36 fish killed;
- 18 crayfish killed; and
- 23.3 acres of vegetation oiled.

The oil also impacted the habitat of the unarmored three-spine stickleback (*Gasterosteus aculeatus williamsoni*), listed as an endangered species under the federal Endangered Species Act and the California Endangered Species Act. The Trustees believe that the stickleback population was severely affected by the spill and additional birds, mammals, reptiles, amphibians, and macroinvertebrates were impacted beyond those observed during the response. The ExxonMobil spill and associated response activities (Figure 1) caused injury to riparian habitat in and around the SCR which supports other federal and/or State endangered and threatened species including the least Bell's vireo (*Vireo bellii pusillus*), the southwestern willow flycatcher (*Empidonax trallii extimus*), and the California red-legged frog (*Rana draytonii*). In the NRDA process, the Trustees determined the "damages," a monetary sum sufficient to compensate for the injured natural resources through restoration actions.

Figure 1. Cleanup of oil in the Santa Clara River.

On January 17, 1994, three years after the ExxonMobil spill, an oil pipeline owned by ARCO Four Corners 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. Approximately 4,600 barrels (190,000 gallons) of crude oil flowed from the pipeline break along a roadway, entered a storm drain, flowed into an open drainage ditch, and from there entered the SCR. The oil flowed downstream for approximately 16 miles, where a sediment dam was constructed to prevent further spread of the oil. Cleanup of the river included removing oiled vegetation, excavating oiled soil and sediment, backfilling, and recontouring of the river bed.

Acute impacts observed during the ARCO spill included:

- Oiling and disturbance of 100 acres of woody and herbaceous vegetation;
- Oiling and disturbance of 150 acres of river sediment and alluvium;
- Loss of an undetermined number of fish including arroyo chub (*Gila orcuttii*) and unarmored three-spine stickleback;
- Loss of an undetermined number of birds; and
- Loss of an undetermined number of other wildlife and aquatic species.

1.2 Federal Consent Decrees and the Santa Clara River Trustee Council

Although the ExxonMobil spill occurred in 1991, three years prior to the 1994 ARCO spill, a settlement for the ARCO spill was reached first. A federal court approved and entered the ARCO Consent Decree on January 17, 1997, nearly six years before the ExxonMobil Consent Decree, which provided for a payment of $7.1 million for natural resource damages. The ARCO Consent Decree specified that these funds would be used for habitat rehabilitation, revegetation, and/or protection of areas within the SCR watershed and for wildlife projects to benefit the least Bell's vireo and other threatened or endangered species or species of special concern along the SCR. The ARCO Restoration Plan describes the ARCO spill and selected restoration projects in detail. Appendix A provides a summary of projects implemented to date with ARCO spill restoration funds.

A federal court approved and entered the ExxonMobil Consent Decree (Appendix B) on October 29, 2002, nearly 12 years after the ExxonMobil spill. The ExxonMobil Consent Decree provided for a payment of $2.65 million (plus the accrued interest on the total $4.7 million settlement amount) for natural resource damages resulting from the ExxonMobil spill. The ExxonMobil Consent Decree specified that these funds would be used for habitat rehabilitation, revegetation, and/or protection of areas within the SCR watershed, and/or for wildlife projects which benefit threatened or endangered species or species of special concern in and along the SCR. Both the ARCO spill funds and the Exxon spill funds (and accumulated interest) are maintained in the Department of Interior's Natural Resource Damage Assessment and Restoration Fund (NRDAR Fund).

A Trustee Council, comprised of representatives from two Trustee Agencies, was formed shortly after the ARCO Consent Decree was entered. A separate MOU was signed in 2002 creating a Trustee Council for the ExxonMobil spill. The Councils are currently comprised of one representative and one alternate each from the FWS and the CDFW. The Councils are responsible for the development and implementation of restoration projects related to the ARCO and ExxonMobil spills to compensate for injuries to natural resources resulting from those two oil spills, and for the allocation of settlement funds associated with that effort. The Councils are also responsible for oversight and monitoring to ensure successful completion of the restoration projects.

Since the ExxonMobil and ARCO spills occurred in virtually identical reaches of the Santa Clara River and the resources injured and potential restoration actions are similar, the Trustees decided that it would be efficient for the Councils to operate in an integrated and complementary manner.

The Trustees are conducting restoration planning for the ExxonMobil spill under the authority of the federal OPA. Restoration activities must comply with all applicable laws and regulations, including, but not necessarily limited to, the federal and state Endangered Species Act, the Clean Water Act, the Migratory Bird Treaty Act, the National Environmental Policy Act (NEPA), the National Historic Preservation Act (NHPA), and the California Environmental Quality Act (CEQA).

1.3 MISSION, GOALS AND OBJECTIVES

After the ARCO Oil Spill, the Council developed the following mission and goal statement. This statement provides the framework for this draft Restoration Plan and outlines the overall responsibilities of the Trustee Council.

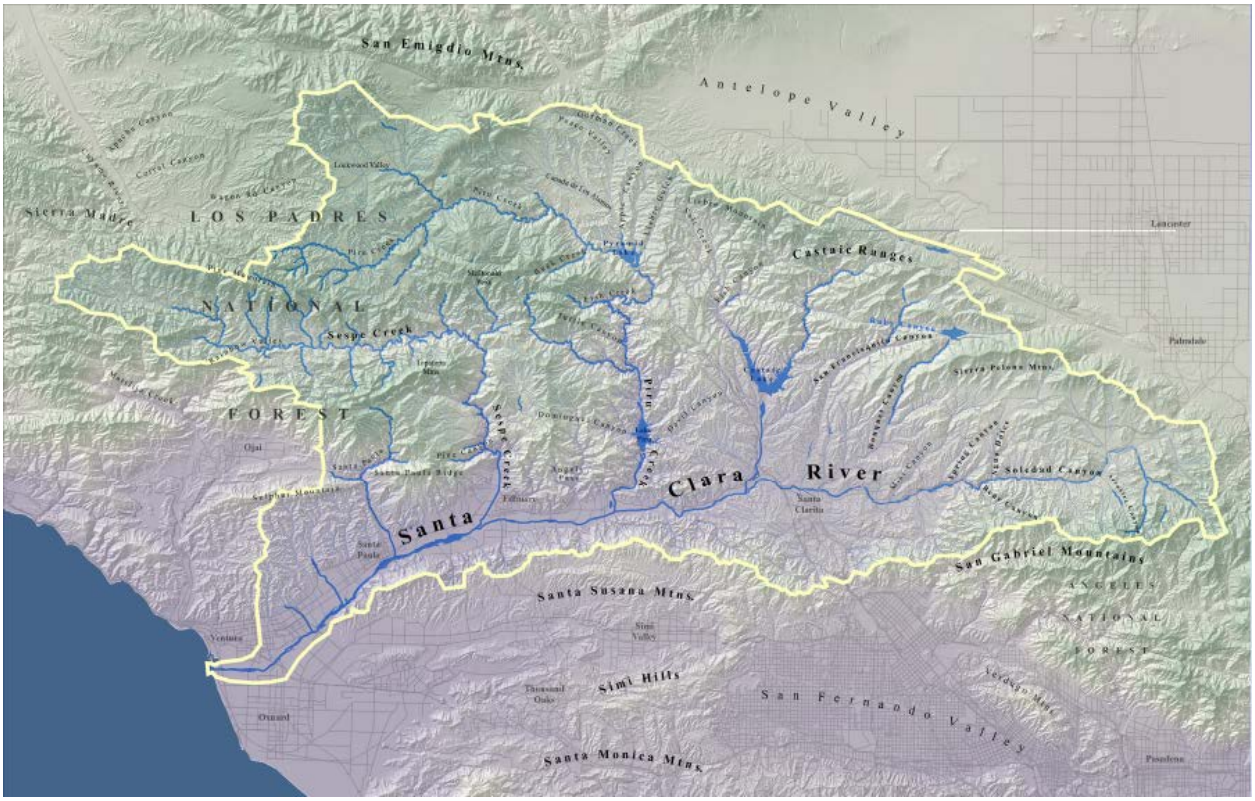
> "The mission of the Santa Clara River Trustee Council is to restore natural resources in the Santa Clara River watershed, in accordance with the Consent Decree, with the goals of contributing to permanent protection of the river's natural ecosystem and of providing lasting value to the public."

The Trustee Council also developed objectives to support its goals. The restoration projects outlined in this draft ExxonMobil Restoration Plan are intended to achieve the following objectives:

- Promote a land ethic which includes stewardship and responsibility toward 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; and
- promote partnerships and collaborative efforts to maximize funding, efficiency, and expertise.

2.0 AFFECTED ENVIRONMENT AND NATURAL RESOURCES OF CONCERN

The SCR is one of the only remaining natural rivers in southern California that has not been significantly channelized or controlled through the construction of numerous dams. The SCR flows from east to west and is characterized by a dynamic (*i.e.* highly variable) flow regime. It is fed by a number of streams flowing south out of the San Rafael and Santa Ynez Mountains, and by streams flowing north out of the San Gabriel and Santa Susana Mountains in the Transverse Range in Ventura and Los Angeles Counties (Figure 2). The SCR surface flows and channel width vary over the course of the year depending on agricultural and domestic water use, wastewater discharges, rainfall and subsurface flows. The river may be a raging torrent during the wet season and an intermittent stream during the dry months. It meanders for approximately 116 miles from the headwaters in the San Gabriel Mountains to the Pacific Ocean, with a watershed covering approximately 1,634 square miles.



Figue 2. The Santa Clara River watershed (Harvey 2007).

In pre-Columbian times, the indigenous Chumash and Tataviam people lived along the SCR. 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. Father Juan Crespi described the SCR as having, "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."

During the first half of the 1800s, the raising of livestock on large ranchos became the dominant occupation along the river. In 1842 gold was first discovered in Placerita Canyon (Figure 3), and was mined in many parts of the watershed. Over the latter half of the 1800s, land use along the river shifted from ranching to other forms of agriculture. Oil enterprises also became established during this time. The 1900s brought the railroad, road and bridge construction, and sand and gravel mining, which increased population, urban development and commercial growth. These historical changes resulted in habitat destruction and fragmentation; decreased water quality; diversion of surface, sub-surface and groundwater flows; channelization; encroachment into the floodplain of the river; and the introduction of non-native plant and animal species.

Figure 3. Gold mining sluice in Placerita Canyon, 1800s-1900s. (Image from a glass-plate negative by Frank Evans, Santa Clarita Valley History in Pictures www.scvhistory.com; Harvey 2007).

Although the resources of the SCR watershed have been compromised by activities that have occurred over the last two centuries, the SCR remains one of the more natural rivers in southern California. Significant areas of native habitat still exist along the river, including 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 SCR include coastal sage scrub, chamise chaparral, coast live oak woodland, and juniper woodland.

2.1 Sensitive species of the Santa Clara River watershed

A diverse variety of wildlife and plant species are associated with the habitat areas of the SCR watershed, some of which are sensitive species. Sensitive plant and animal 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 and organizations. There are seven plant, five fish, 15 bird, eight reptile and amphibian, two mammal and one insect species considered to be 'sensitive' in the SCR watershed.

Figure 4. Salt marsh bird's Beak (USFWS 2005).

Figure 5. Ventura marsh milk-vetch (USFWS 2003).

Figure 6. Unarmored threespine stickleback (Dellith 2007).

Figure 7. Tidewater goby (USFWS 2004).

The sensitive plants of the SCR watershed include:

- Peirson's morning-glory (*Calystegia peirsonii*)
- Nevin's barberry (*Berberis nevini*)
- slender-horned spineflower (*Dodecahema leptoceras*)
- short-joint beavertail cactus (*Opuntia basilaris* var. *brachyclada*)
- Ventura marsh milkvetch (Astragalus *pychnostachyus var. lanosissimus*) (Figure 5)
- Ojai fritillary (*Fritillaria ojaiensis*)
- salt marsh bird's beak (*Cordylanthus maritimus* ssp. *Maritimus*) (Figure 4).

The sensitive fish of the SCR watershed include:

- unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*) (Figure 6)
- arroyo chub (*Gila orcuttii*)
- Santa Ana sucker (*Catostomus santaanae*)
- southern California steelhead trout (*Oncorhyncus mykiss iridius*)
- tidewater goby (*Eucyclogobius newberryi*) (Figure 7).

The sensitive birds of the SCR watershed include:

- western least bittern (*Ixobruchus exilis hesperis*)
- western snowy plover (*Charadrius alexandrines nivosus*)
- California least tern (*Sternula antillarum brownii*)
- California condor (*Gymnogyps californianus*) (Figure 9)
- bank swallow (*Riparia riparia*)
- Belding's savannah sparrow (*Passerculus sandwichensis beldingi*)

- least Bell's vireo (*Vireo bellii pusillus*)
- southwestern willow flycatcher (*Empidonax traillii extimus*)
- Coastal California gnatcatcher (*Polioptila californica californica*) (Figure 8)
- yellow warbler (*Dendroica petechia aestiva*)
- yellow-breasted chat (*Icteria virens*)
- loggerhead shrike (*Lanius ludovicianus*)
- western yellow-billed cuckoo (*Coccycus americanus*)
- white-tailed kite (*Elanus leucurus*)
- northern harrier (*Circus cyaneus*)

Figure 8. California gnatcatcher (Dellith 2008).

The sensitive reptiles and amphibians of the SCR watershed include:

- San Diego horned lizard (*Phrynosoma coronatum blainvillii*)
- two-striped garter snake (*Thamnophis hammondii*)
- south coast garter snake (*Thamnophis sirtalis infernalis*)
- southwestern pond turtle (*Clemmys marmorata pallida*)
- silvery legless lizard (*Anniella pulchra pulchra*)
- coast patch-nosed snake (*Salvadora hexalepis virgultea*)
- arroyo toad (*Bufo californicus*)
- California red-legged frog (*Rana draytonii*) (Figure 10)

Figure 9. California condor (USFWS 2003).

Figure 10. California red-legged frog (USFWS 2003).

The sensitive mammals of the SCR watershed include the:

- Townsend's big-eared bat (*Corynorhinus townsendii*)
- western mastiff bat (*Eumops perotis*)

One sensitive insect, the sandy beach tiger beetle (*Cicindela hirticollis gravida*), is found in the SCR watershed.

The diversity of habitats and associated wildlife of the SCR watershed can be conserved and enhanced through land protection and restoration. The restoration actions proposed for implementation through this ExxonMobil Restoration Plan will protect, facilitate compensation of and/or compensate for the injured natural resources damaged by the oil spills, while at the same time maintaining and enhancing the historical and biological diversity of the SCR watershed.

3.0 RESTORATION METHODS

The ExxonMobil Consent Decree, like that of the ARCO Consent Decree, provides guidance for restoration projects along the SCR. The ExxonMobil Consent Decree specifies that restoration funds be used for "habitat rehabilitation, revegetation, and/or protection of areas within the Santa Clara watershed, and/or wildlife projects which benefit threatened or endangered species or species of special concern in and along the Santa Clara River." Since the signing of the ARCO Oil Spill Consent Decree, the Council held numerous meetings regarding restoration planning for the SCR. These meetings included sessions with biological experts, planners, and managers from both the public and private sectors and interest groups, brought together to assist the Council in the development of goals, objectives, evaluation criteria, and restoration projects. This information was incorporated into the ARCO Restoration Plan. The details of the public meeting process and the development of restoration alternatives are provided in the ARCO Restoration Plan.

Because the Council for both incidents is composed of the same representatives of the same trustee agencies and the geographic extent and injured resources are virtually identical, the restoration actions identified in the ARCO Restoration Plan continue to be a priority within the SCR watershed. The Council is proposing several restoration alternatives in this draft ExxonMobil Restoration Plan similar to those selected in the ARCO Restoration Plan.

3.1 EVALUATION CRITERIA FOR RESTORATION MEASURES AND ALTERNATIVES

To evaluate, prioritize, and select restoration measures and alternatives for the ARCO Restoration Plan, the Council developed eight qualitative criteria. These same criteria will be used to evaluate and select restoration measures and alternatives for the ExxonMobil Restoration Plan.

CONSISTENCY WITH THE TRUSTEES' RESTORATION GOALS

All proposed restoration alternatives/measures must meet the Council's intent to restore natural resources in the SCR watershed in accordance with the Exxon Mobil Consent Decree and the goal of contributing to permanent protection and restoration of the river's natural ecosystem. The more pertinent the restoration projects are to the restoration goal, the higher the priority given to the proposed measure/alternative under this criterion.

FEASIBILITY

This criterion is used to examine the technical, biological, regulatory, and political feasibility of a proposed restoration project. The Council shall evaluate the soundness of the restoration technique, level of risk or uncertainty in being able to implement 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. Proposed alternatives that do not comply with applicable laws will be eliminated from consideration.

DURATION OF BENEFITS

The mission of the Trustee Council and the intent of the Exxon Mobil Consent Decree is to restore and protect the natural resources of the SCR watershed in perpetuity. Proposed restoration alternatives that do not contribute to restoration and/or permanent long-term protection of the natural resources will not be considered further.

AVOIDANCE OF FUTURE OR COLLATERAL INJURIES

Any proposed restoration alternative shall avoid or minimize adverse impacts to the environment and the associated natural resources. It is recognized by the Council that unavoidable and temporary adverse impacts may result when implementing some proposed projects. Restoration projects which provide more permanent benefits will outweigh any temporary unavoidable adverse impacts. Proposed 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 proposed restoration alternative. Trustees shall seek projects with the best cost to benefit ratio. The lower the cost of providing the expected benefits, the higher the priority shall be given to an 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 under this criterion.

ENDANGERED/THREATENED SPECIES AND SENSITIVE HABITAT AREAS

The Trustees shall examine the ability of the proposed 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 shall receive a higher priority for this criterion.

3.2 RESTORATION ALTERNATIVES (MEASURES) DEVELOPED DURING THE ARCO OIL SPILL RESTORATION PLANNING PROCESS

Broad scale human encroachment within the SCR watershed places increasing pressures on the natural living resources in the area. During development of the ARCO Restoration Plan, the

Council proposed five compensatory alternatives and one "no action" alternative for restoration, rehabilitation, replacement, and/or land acquisition that would be equivalent to the natural resources that were injured by the ARCO oil spill.

Five of these proposed restoration alternatives met the conditions of the ARCO Consent Decree, were evaluated and selected through application of the evaluation criteria, met the goals and objectives outlined by the Council, and were reviewed by the public. The restoration measures identified by the Council during the development of the ARCO Oil Spill Restoration Plan, including a "no action" alternative, are described below to provide background information on the development process. It is the Council's position that several of these alternatives are appropriate for inclusion in the ExxonMobil Restoration Plan.

MEASURE 1: NO ACTION ALTERNATIVE

The "no action" alternative considered the ability of the injured natural resources to recover on their own. The "no action" alternative included not spending the $7.1 million allocated for natural resource damage restoration. Since the Council is committed and required under the Consent Decree to spend the allocated money on the restoration process, the "no action" alternative was not considered further as a viable alternative restoration measure.

MEASURE 2: LAND ACQUISITION/CONSERVATION EASEMENTS

Like most other rivers in southern California, the SCR is characterized by a dynamic flow regime, fluctuating within and among seasons. The geomorphology and biota associated with southern California rivers are dependent on these fluctuations and can change drastically during each large rain event. As such, these river systems need the space to be dynamic, as was historically typical of southern California rivers. With the advent of agriculture and subsequent development, various pressures have been exerted upon the SCR system that have resulted in habitat destruction, decreased water quality, changes in water flow dynamics, channelization, encroachment into the floodplain and introduction of non-native species.

The Council believes that the protection of lands, either through acquisition of fee title or permanent conservation easements, would do much to protect the river and enhance, restore, and maintain associated wildlife and their habitats in perpetuity. Land acquisition and conservation easements also would minimize further encroachment on remaining natural systems and would help to maintain connectivity between the river, its floodplain, tributaries, and adjacent upland areas. The protection of riparian and aquatic habitats would enhance the recovery of sensitive species associated with the river, such as those described in section 2.1.

MEASURE 3: INVASIVE NON-NATIVE PLANT SPECIES CONTROL

This restoration measure includes implementation of programs to help control invasive non-native species. In September 2009, the Bureau of Land Management estimated that 4,600 acres a day in the western United States, alone, were lost to invasive non-native plants, rendering land

biologically impoverished (BLM-Calif). The importance of invasive exotic species control is widely understood to be crucial in restoring and maintaining ecosystem health (Tu et al 2001), and is recognized in the recovery plans for the least Bell's vireo and the southwestern willow flycatcher (FWS 1998, FWS 2001). In particular, *Arundo donax*, also known as giant reed, has infested the SCR watershed replacing large areas of native riparian vegetation and degrading much of its intrinsic wildlife habitat value.

In the ARCO Restoration Plan, the Council recognized that control of invasive non-native plants must be implemented over the long-term and that an endowment with sufficient interest-bearing income could assure the availability of funds to carry on existing long-term management programs. The Council agreed that restoration should also include a monitoring component to evaluate the success of invasive plant control programs.

MEASURE 4: RESTORATION PROJECT GRANT PROGRAM

This restoration measure provides a contract process for the Council to undertake selected restoration projects proposed by the public, preferably from the local SCR community, to include a variety of smaller-scale projects that would promote restoration along the SCR. This restoration measure may be jointly funded by the Partners for Fish and Wildlife program, a land stewardship program administered by the FWS.

MEASURE 5: INFORMATION AND EDUCATION

This restoration measure includes various outreach activities related to the other measures. Conveying information and educating the public about the benefits of restoration remains critical to the long-term stewardship of the land. Outreach activities include incorporating restoration programs into school curricula, 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 awareness of the impact of oil spills on natural resources through education.

MEASURE 6: WATERSHED EVALUATION AND MONITORING

This restoration measure includes various projects that involve watershed evaluation and monitoring efforts. These efforts would assist the Council in identifying the systems that need to be restored and to monitor restoration success and include such efforts as funding the continuance of the avian studies, mapping, and monitoring of watershed processes.

3.3 ARCO OIL SPILL RESTORATION PROJECT IMPLEMENTATION SUMMARY

Using the measures described above (other than the no Action Alternative) the Trustees implemented the ARCO Restoration Plan by funding projects in three broad categories: Land Acquisition/Conservation Easements; Invasive non-native plant species control endowment; and restoration grants, as described further below.

LAND ACQUISITION/CONSERVATION EASEMENTS

The Council was approached early on in the planning process by both the California Coastal Conservancy and then The Nature Conservancy (TNC) about the importance of protecting and restoring the Santa Clara River riparian corridor. As a result of this collaboration, the Council entered into a grant agreement with TNC for the acquisition of land and the establishment of conservation easements. The Council has spent a total of approximately $5.67 million dollars from the ARCO settlement to acquire ecologically important lands in the SCR watershed. Land acquisition opportunities depended on the availability of suitable acquisitions offered by TNC in working with willing sellers. The Council has provided funding for four acquisitions including:

1) the 377-acre Vulcan-Calmat property purchased in June 2005 for ~$595,000;

2) the 80-acre Lagomarsino property purchased in November 2005 for ~ $77,000;

3) the 145-acre J.D. McGrath property purchased in April 2010 with a $2 million contribution from the Council; and

4) the 123-acre Totlcom property purchased in December 2010 with a $3 million contribution from the Council.

Details of these land acquisitions are provided in Table A of Appendix A. The Council has also committed to provide $1.5 million as a 50% match to a Department of Water Resources grant for the agricultural floodplain conservation easement program. This program will protect agricultural land and maintain or improve the existing hydrological regime of the river.

INVASIVE NON-NATIVE PLANT SPECIES CONTROL ENDOWMENT

The Council recognized early on in the planning process that the presence of invasive non-native plant species in the Santa Clara River watershed was a major problem and began partnering with various groups to collectively decide how best to control invasive plants. This effort was spearheaded by the Ventura County Resource Conservation District and became known as the Arundo Task Force. Giant reed, otherwise known as *Arundo donax*, is the primary invasive plant in the riparian areas of the Santa Clara River, along with tamarisk and others. The Council decided that establishing an endowment for controlling invasive non-native plant species would be an appropriate use of the settlement funds, to be used for the longer-term monitoring and maintenance activities necessary for invasive plant control. However, due to declining capitalization rates and the absence of an entity to hold the endowment and distribute its funds, the money remained in the DOI NRDAR account where it accumulates interest. Thus, instead of establishing an endowment, the Council decided to fund projects that remove or facilitate the removal of invasive, non-native species, and implemented these projects under the restoration project grant program described below.

RESTORATION GRANTS PROGRAM

In order to attract a variety of restoration projects from interested applicants, the Council decided to utilize the 'Request for Proposal' process in order to obtain suggestions from the public for projects which addressed the restoration categories of habitat restoration, public education and outreach. This was a multi-stage process involving public advertisement of the Council's request for pre-proposals and full proposals, and establishment of agreements for the selected project recipients. The various projects were grouped into three broad categories: Habitat Restoration, Information and Education, and Watershed Evaluation and Monitoring. Table B in Appendix A provides a description of the funded projects.

Habitat Restoration

The Council prepared four grant agreements under the Habitat Restoration category. The main focus has been on developing a watershed-wide *Arundo* and tamarisk removal plan (Santa Clara River Invasive Plant Removal Program - SCIPR) in concert with the development of programmatic permits and environmental documents necessary for implementation of the broad-based invasive plant control program. The Council awarded two separate grant agreements with the VCRCD in order to implement the invasive plant control program for both the upper and lower watersheds. The upper watershed effort was also funded by a state Proposition 13 grant with Council funding as a match. The VCRCD currently holds permits for removal of invasive plants in the upper SCR watershed. However, the completion of a programmatic permitting process and/or the administration and oversight of non-native plant removal projects in the lower SCR watershed may be assumed by another entity at some point in the future.

Additionally, the Council provided a grant to UCSB to identify and test biological controls for *Arundo* which will not affect native or economically important plant species. The Council also provided a grant to *Friends of the Santa Clara River* to restore native habitat on the Hedrick Ranch Nature Area. The Council collaborated with many other groups which were involved with invasive species control including the Angeles National Forest, the City of Santa Clarita, private landowners, the Arundo Task Force, the Ventura County Agricultural Commissioner's Office and the Weed Management Areas of both Los Angeles and Ventura Counties.

Information and Education

The Council developed six grant agreements that provide education and outreach opportunities for the public including: a Santa Clara River touring exhibit; an educational program through the University of California Cooperative Extension Service entitled Watershed U; an illustrated book and pamphlet on the SCR; funding for the Santa Clarita River Rally which is an annual event for the community; the formation of a volunteer/stewardship program for the Hedrick Ranch Nature Area; and the development of an educational program that brings students to the Santa Clara River to learn first-hand about the natural resources in the watershed.

Watershed Evaluation and Monitoring

The Council developed nine grant agreements which included the following projects and studies: developing a riparian restoration handbook; conducting surveys of amphibians and macroinvertebrates; native fish distribution and abundance surveys; steelhead habitat assessment and recovery opportunities; avian populations study; vegetation classification and mapping; conservation plans for acquiring and protecting critical habitats in the upper and lower SCR watersheds; and funding to the Ventura County Planning Division for restructuring the zoning ordinance to allow for the acquisition of smaller environmentally sensitive properties within and adjacent to the SCR for conservation purposes. These projects provided valuable information for planning restoration measures to protect critical resources in the SCR watershed. Table B in Appendix A provides a summary for each project.

Santa Clara River Reserve and Research Station

In 2008, the Council was approached by representatives of the University of California Santa Barbara, Marine Science Institute, and the University of California Los Angeles, with the idea of creating a SCR Reserve and a University of California Research and Education Station administered by the Natural Reserve System (NRS) and the Agricultural Research Station of the University. The overall objective of the Santa Clara River Reserve project is to build a multi-functional station that will provide facilities, infrastructure and an institutional framework to carry out environmental studies and relevant natural resource policy research that integrate existing information with newly acquired data to support conservation of biodiversity, ecosystem functions and agricultural sustainability in the SCR watershed.

The over-arching goal of this program is to develop the ecological and educational basis for carrying out large-scale restoration of riparian ecosystems that will provide sustainable habitat for plant and animal species covered by the Endangered Species Act as well as other, currently unprotected, riparian-dependent species. The Council supports this concept and committed to the allocation of $125,000 per year over a five-year period of time, contingent on project progress and accomplishments. The Council is currently funding the second year of the project for an invasive plant removal project on a property owned by TNC.

3.4 Proposed and Preferred Restoration Alternatives (measures) for the ExxonMobil Oil Spill Restoration Plan

Since the areas and resources in the SCR watershed that were affected by the ARCO and ExxonMobil oil spills are virtually identical, the Council finds that the restoration measures developed for the ARCO Restoration Plan are consistent with the requirements of the ExxonMobil Consent Decree. The Consent Decree allows restoration alternatives to be implemented throughout the SCR watershed. After careful consideration of the restoration alternatives developed and implemented in the ARCO Restoration Plan, the Council proposes the following preferred restoration actions in this draft ExxonMobil Oil Spill Restoration Plan which build upon actions implemented in the ARCO Oil Spill Restoration Plan. These restoration

actions include the long-term protection and management of land through acquisitions and the establishment of conservation easements, and various habitat restoration activities.

The focus of the ExxonMobil Restoration Plan is to protect, manage and restore the land through land acquisition, restoration, and maintenance of habitats with high environmental values in the SCR watershed. The Council will collaborate with other conservation organizations to acquire interests in land so as to protect and enhance it, and to for its long-term management and restoration. The Council will select such projects consistent with the goals and alternatives identified above and in the ExxonMobil Consent Decree.
As part of its consideration of proposed alternatives, the Council considers the No-Action alternative as required by the National Environmental Policy Act (NEPA). The 'no action' alternative looks at the ability of the natural resources to recover on their own. The no action alternative is to not spend the $2.65 million (plus the accrued interest) allocated for natural resource damage restoration. Since the Council is committed and required under the Consent Decree to spend the money recovered as natural resource damages on restoration of injured resources, the no action alternative in not considered a viable alternative.

3.4.1 Land Protection and Management

In the ARCO Restoration Plan, the Council implemented a program to identify and acquire, either by obtaining fee title or permanent conservation easements, key properties that have significant environmental value for the SCR watershed. The Council proposes to supplement this program as opportunities arise, using settlement funds from the ExxonMobil spill to combine with the remaining acquisition funds set up under the ARCO Restoration Plan to facilitate additional key land acquisitions, permanent conservation easements including floodplain agricultural conservation easements, and promote the long term maintenance and management of these lands to ensure they provide ongoing benefits to wildlife. Key partners for this work will continue to be TNC and the California Coastal Conservancy.

3.4.2 Habitat Restoration

Consistent with the Restoration Project Grant Program implemented under the ARCO Restoration Plan, the Council proposes to focus on implementing habitat restoration projects that were identified during the watershed resource assessments completed through the ARCO Restoration Plan. The Council does not believe it is necessary at this juncture to pursue the Request for Proposal (RFP) process that was utilized as part of the Restoration Project Grant Program described above. Rather, the Council will build upon information obtained in developing and implementing the ARCO Restoration Plan and continue to fund appropriate SCR habitat restoration projects.

A primary focus of the Council will be to continue funding control of invasive plant control projects. The Council may also decide to fund invasive animal species control efforts for such exotics as cowbirds, bullfrogs or African clawed frogs. Habitat restoration may also include

projects to remove or modify man-made barriers, such as dams, or to construct grade control structures to restore historic fish migrations for the federally listed southern run steelhead trout.

While the Council does not intend to send out RFPs, the Council will consider and may approve specific habitat restoration projects that are brought to the Council's attention and that fall within the general categories or types of restoration projects described herein.

4.0 IMPLEMENTATION, MANAGEMENT, MONITORING AND OVERSIGHT

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

4.1 LAND PROTECTION AND MANAGEMENT

The Council is proposing to allocate funds to TNC for the acquisition of land and the establishment of conservation easements. Negotiations with willing sellers and real estate transactions will be accomplished by TNC. The Council will have approval authority on parcels and interests in parcels (*e.g.* easements) acquired with Council funds. The Council and TNC are committed to the restoration, permanent protection and wise management of property interests consistent with natural resource protection of lands acquired in the SCR watershed. In addition, the Council may collaborate with other entities such as the California Wildlife Conservation Board (WCB) to provide matching funds for specific parcel acquisitions.

The Council may decide to utilize settlement funds for land restoration or other management activities on acquired parcels or parcel interests. Alternately, restoration and management of acquired parcels or parcel interests may come later under the responsibility and authority of trustee agencies, other agencies or conservation groups. The Council intends to reserve its right, consistent with applicable law and as appropriate for specific acquisitions, to review and approve any restoration and management plans that concern lands or property interests acquired with settlement funds. This reservation of rights will need to be placed in the acquisition agreements as appropriate. The agencies that comprise the Council, the FWS and the CDFW, may also have to review and approve restoration activities that require agency review separate from their responsibilities as natural resource trustees.

4.2. HABITAT RESTORATION

The Council proposes to allocate funds to implement specific habitat restoration projects selected by the Council. The Council proposes to use the criteria for evaluating and selecting restoration project proposals that were developed and used successfully for the ARCO funded restoration activities, as described above.

Once the projects are selected and environmental compliance requirements are fulfilled, the projects will be implemented and completed with Council oversight. Each project will include performance and success criteria by which to determine project completion. For projects requiring written progress and/or final reports or publications, the grantee shall submit drafts of said documents to the Council for review and approval. The Council will determine how, when, and where the final project reports will be released to the public.

The Council is responsible for the development of the Restoration Plan and the allocation of funds for the successful implementation of restoration projects under the ExxonMobil Restoration Plan. After all restoration projects have been implemented, all funds have been spent, and the Council has been disbanded, the trustee agencies, FWS and CDFW, will oversee long-term project management when applicable and appropriate.

5.0 COMPLIANCE WITH APPLICABLE LAWS AND REGULATIONS

The preparation of this draft ExxonMobil Restoration Plan and the selection of restoration projects require compliance by the lead federal agency with the NEPA. The purposes of NEPA include to "encourage productive and enjoyable harmony between man and the environment." As the federal lead agency for the Council. NEPA requires the FWS to consider the environmental consequences of the proposed restoration alternatives for the SCR and to provide public notification and environmental review of the federal planning and decision-making. The Environmental Assessment (EA) aspect of this ExxonMobil Restoration Plan is designed to assess the environmental consequences of the proposed restoration actions. An EA results in either the issuance of a Finding of No Significant Impact (FONSI) or the production of an Environmental Impact Statement (EIS). , Given the programmatic nature of this EA as to potential restoration measures, additional NEPA compliance may be triggered at the project level as specific projects are identified.

The CEQA may also be triggered for projects selected and implemented via the ExxonMobil Restoration Plan. Generally speaking, CEQA requires the consideration of the environmental impacts of projects funded, implemented or approved by state agencies. The CDFW anticipates that land acquisition projects will be categorically exempt from CEQA pursuant to Section 15307 of the California Public Resources Code as an action by regulatory agencies for protection of natural resources. This categorical exemption contemplates projects such as wildlife preservation activities. However, the application of this exemption will be considered on a case-by-case basis as acquisition opportunities are identified. Projects selected for funding and implementation as habitat restoration will be subject to the appropriate environmental review, including CEQA, if triggered, upon project selection. This ExxonMobil Restoration Plan provides a programmatic-level description of proposed habitat restoration measures and does not contain sufficient detail to make any meaningful CEQA project-level assessments at this juncture. While it is possible that restoration projects themselves have the potential to result in adverse environmental impacts, the restoration projects are expected to provide overall long-term natural resource benefits and any short-term adverse impacts are likely to either be avoided or minimized during project implementation. A more detailed CEQA assessment for specific restoration projects may need to be conducted as appropriate by the project state lead agency as projects are identified and prior to actual project implementation.

For all of the proposed restoration measures, the potential for project activities to affect cultural and historic resources, including Native American human remains and cultural objects, will be determined early in project planning. To this end, the procedures in 36 C.F.R. Part 800 implementing Section 106 of the NHPA, requirements of the Native American Graves Protection and Repatriation Act, and policies and standards specified in the FWS Manual 614 FW 1-5 will be followed.

Additionally, compliance with other state or federal laws such as the state and/or federal Endangered Species Acts may be triggered at the project level for specific restoration or property management activities.

6.0 Environmental Consequences of Restoration Alternatives (Measures)

6.1 Land Protection and Management

The restoration measure of acquiring land and conservation easements concerns land protection, management and restoration. This restoration measure is expected to have overall beneficial environmental consequences. Through the acquisition of land and conservation easements, areas will be permanently protected and the Santa Clara River will be able to function more naturally.

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

As described above, restoration and management of the acquired land may be necessary, and could include such activities as removing levees and berms, recontouring the river bed and banks to a more natural landscape, controlling invasive non-native plants such as *Arundo* and re-establishing native plants. Although such restoration activities will result in long-term benefits, short-term negative impacts may occur, and are described in the habitat restoration section below. This ExxonMobil Restoration Plan is programmatic in nature and potential impacts of selected projects will have to be assessed at the project level.

6.2 Habitat Restoration

The Council intends to fund invasive non-native plant species control as a habitat restoration measure in the Santa Clara River watershed. This measure requires a long-term, vigilant effort aimed at invasive plant species, particularly *Arundo* and tamarisk. The long-term environmental benefit resulting from an invasive non-native plant species control program includes the recovery of native plant species to form a more balanced, diverse riparian system.

While not specifically habitat restoration *per se*, the Council may also decide to fund invasive animal species control efforts for such exotics as cowbirds, bullfrogs or African clawed frogs. While control methods for *Arundo*, tamarisk and cowbirds are well documented, methods for effectively controlling the spread of other invasive species are not as well known.

Current *Arundo* and tamarisk control methods include physical removal (either by hand or using equipment), cutting and mulching in place, stockpiling and drying the canes, burning, and applying herbicide either by cut stump method or foliar spraying. The method of *Arundo* control should be determined by site-specific information such as location, accessibility, density of the stand, and proximity to native species. In some cases, native vegetation has been observed to propagate and fill in areas where *Arundo* has been removed, but, in other cases, it may be necessary to re-establish native vegetation, particularly in locations where large, dense, stands of

Arundo are removed. Replanting will be implemented on a case by case basis and will depend on the probability and rate of natural regrowth of native plants. It is the Council's position that long-term maintenance and monitoring will be required for a successful *Arundo* control program.

Removal of *Arundo* by mechanical extraction or herbicide treatment is intensive and may have direct and indirect impacts on the physical and biological environment. Potential impacts include but are not limited to harassment, injury, or death of wildlife and injury to, or removal of, native vegetation caused by the operation of heavy machinery (e.g. tractor or bulldozer), environmental contamination from hazardous fluid leaks into sensitive areas, and the use of chemical herbicides. The environmental impacts of *Arundo* removal can be minimized by manual removal and the use of low impact machinery, such as the hammer flail devices that have been successfully used to mulch *Arundo* in place with minimal resprouting.

Herbicide treatment would involve the use of glyphosate-based products approved for aquatic use by the U.S. Environmental Protection Agency and the California Department of Pesticide Regulation (e.g., Rodeo, Aquamaster, etc.) that do not pose a threat to wildlife, fish and other aquatic species if used properly and if applicators use a non-ionic surfactant (e.g. Agri-dex) when applying herbicides in and around aquatic environments (Tu et al. 2001). The use of herbicides can 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* (Tu et al. 2001). Also, at this time, there is less impact to wildlife since it is outside the breeding season. The short-term impacts associated with mechanical removal and herbicide treatment can be minimized and are outweighed by the long-term benefit of removing and controlling *Arundo* and tamarisk in order to promote the regrowth of native vegetation and increase the diversity of native plant and animal species.

The Council recognizes that the control of *Arundo* and tamarisk within the Santa Clara River watershed is a long-term endeavor that will inevitably provide for significant ecological benefits by increasing the acreage of native riparian vegetation and the host of native species that are supported by the native habitat. It is well known that *Arundo* and tamarisk are extremely difficult to completely eradicate from a site with just one control treatment. Therefore, follow-up monitoring to look for re-infestation, along with re-treatment and maintenance treatments are often necessary to maintain control of these species. Habitat restoration funds may be used to provide funds for both direct removal of non-native plants and also follow-up monitoring and maintenance. Monitoring efforts would be anticipated to have minimal or no negative environmental consequences.

Maintenance efforts where follow-up treatment is required will follow similar guidelines developed during the project implementation phase where all potential environmental consequences will have been evaluated. The activities supported by these funds have been evaluated in this draft Restoration Plan and in the ARCO Oil Spill Restoration Plan. The environmental benefit would be the long term control of *Arundo* and tamarisk which will, in

turn, benefit long term conservation and restoration of native riparian habitat and associated wildlife species.

Figure 11. The Santa Clara River at the Santa Paula Airport during a rainstorm on February 23, 2005 (Phelps 2005; Harvey 2008).

Natural events such as large floods or fires can often remove invasive non-native vegetation or alter a habitat in a way that lends itself to more cost-effective restoration. For example, large rain events of 2005 caused the Santa Clara River to swell and shift in its floodplain (Figure 11). During the storms of that year, large areas of *Arundo* were wiped out, leaving the opportunity to enhance the impacted areas by preventing re-infestation and/or by planting native species. Environmental impacts of these types of projects are likely to be somewhat less than those for invasive non-native plant control projects under normal conditions (described above) because the standing crop and percent cover of both *Arundo* and native plants are frequently decimated during significant flood events thus reducing the likelihood of damage to native plants during herbicide application to recovering *Arundo* and tamarisk.

The Trustee Council may allocate a portion of the monies from the ExxonMobil settlement toward control of brown-headed cowbirds. Brown-headed cowbirds lay their eggs in the nests of other birds, which then raise the chicks as their own. Species that are similar in size to cowbirds, such as blackbirds, can raise cowbirds with little or no harm to their own young. For small species like the least Bell's vireo, southwestern willow flycatcher, and California gnatcatcher, the host parents are usually only able to raise the cowbirds and none of their own young (Griffith Wildlife Biology 2007). The parasitic nature of this species has interfered with the successful

breeding of native birds along the Santa Clara River. Decreasing populations of brown-headed cowbirds will contribute to the recovery of endangered species such as the least Bell's vireo and the southwestern willow flycatcher, and cowbird control is identified as a recovery action in the FWS recovery plans for both species.

A recent study on cowbird trapping in the Santa Clara River watershed concluded, "Cowbird control is essential to the recovery of small endangered host species. For the vireo, per-pair productivity nearly triples in trapped areas [i.e., areas where cowbirds are trapped] vs. unstrapped areas (from ~1.3 to ~3.5 young per pair). This is the different between decreasing and increasing host populations, between extirpation/extinction and recovery" (Griffith Wildlife Biology 2012).

Figure 12. Cowbird chick in California gnatcatcher nest (Griffith Wildlife Biology 2010).

Figure 13. Cowbird control structure near the Santa Clara River (Marek 2008).

The California Department of Fish and Wildlife has implemented cowbird control along the Santa Clara River over the last several years, depending on the funding availability. Cowbird control has also been funded as mitigation for various projects. The Council may partner with the state to assure that funds are available for cowbird control. Furthermore, cowbird control operations are conducted at sensitive sites, nationwide, to promote the recovery of endangered songbirds such as the least Bell's vireo. To control cowbirds, a cage-like structure is placed in an area where cowbirds are found (Figure 13). The cowbirds are attracted to other cowbirds in the structure, enter the cage, are unable to escape, and are then euthanized. The environmental consequence of cowbird control is the death of cowbirds. Although this is unfortunate for a species that has evolved with unique adaptations for survival, the parasitic behavior of the species has interfered with the successful breeding of native birds along the Santa Clara River, such as the federally endangered least Bell's vireo. Cowbird control allows for other native bird species to more successfully reproduce and increase their populations.

Habitat restoration may also include projects to remove or modify man-made barriers, such as dams, or to construct grade control structures to restore historic fish migrations for the federally listed southern run steelhead trout. Barriers to fish migration were identified in the steelhead studies funded by the ARCO settlement. Barrier removal or modification and/or construction of

grade control structures may result in the redistribution of sediment and streambed alluvium. This may affect habitats and biota downstream and upstream of the structure. Impacts of barrier removal/modification and grade control structures will be considered on an individual basis depending upon project-specific parameters such as location, habitat, water flows, species present, and the type of barrier modification needed. Projects that will modify surface water diversion structures to enhance riparian habitat and benefit native species will also be considered.

Because specific projects have not been selected, environmental impacts associated with these restoration alternatives cannot be fully evaluated at this time. Once habitat restoration projects are selected, the projects will go through the required review and permitting processes prior to implementation. Benefits to the local or regional SCR economy are anticipated through funding of local individuals and groups to implement the restoration projects described herein.

6.3 Cumulative Environmental Consequences

At this time, the only known projects with potentially negative environmental impacts are those associated with invasive non-native species control and barrier removal as described above. Once specific restoration projects are identified, potential impacts from those projects, including cumulative impacts, can then be identified and addressed. The Council believes that the potential impacts from invasive species control and barrier removal projects are generally transient in nature and will not lead to cumulative adverse impacts. The overall long-term cumulative impacts of the restoration activities described in this plan are anticipated to have beneficial effects on the environment by protecting and restoring natural resources of the Santa Clara River.

7.0 BUDGET

The ExxonMobil Consent Decree resulted in the settlement of $2.65 million (plus the accrued interest) for natural resource damages. After the Consent Decree was signed, these funds were deposited in the DOI NRDAR Fund where the money was invested in U.S. government securities, namely Treasury bills and Treasury notes, and has been accruing interest. The 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.

8.0 CONTACT INFORMATION

Information and documents related to the ARCO and ExxonMobil Santa Clara River Trustee Councils can be found at the CDFW's website: http://www.dfg.ca.gov/ospr/nrda/ or by contacting the representatives from FWS or CDFW below.

Jenny Marek
Biologist
Ventura Fish and Wildlife Office
U.S. Fish and Wildlife Service
(805) 644-1766 extension 325
Jenny_Marek@fws.gov

Steve Hampton
Resource Economist
Office of Spill Prevention and Response
California Department of Fish and Wildlife
(916) 323-4724 phone
Steve.Hampton@wildlife.ca.gov

REFERENCES

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

Bell, G.P. Undated. Ecology and Management of *Arundo donax*, and approaches to riparian habitat restoration in southern California. The Nature Conservancy of New Mexico. Available at http://teamarundo.org/ecology_impacts/arundo_ecology.pdf. Accessed July 27, 2010.

Muehter, V. No Date. Cow birds and conservation.

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.

Griffith Wildlife Biology. 2007. Brown-headed cowbird control. Available at: http://www.griffithwildlife.com/cowbird.html. Accessed October 18, 2012.

Griffith Wildlife Biology. 2010. The Nature Conservancy 2010 Santa Clara River brown-headed cowbird control program. Final Report.

Griffith Wildlife Biology. 2012. The Nature Conservancy 2012 Santa Clara River brown-headed cowbird control program. Final Report.

Harvey, A.M. 2007. A visual journey through the Santa Clara River watershed. VisualJourneys.net. USFWS –Ventura CA

Herrera, A.M., and T.L. Dudley. 2003. Reduction of riparian anthropod abundance and diversity as a consequence of giant reed (*Arundo donax*) invasion. Biological Invasions. 5:167-177.

Iverson, M.E. 1998. Effects of *Arundo donax* on water resources. CalEPPC News. Vol. 6, No. 3. California Exotic Pest Plant Council, Trabuco Canyon, California.

James N. M. Smith, M. J. Taitt, L. Zanette. 2002. Removing brown-headed cowbirds increases seasonal fecundity and population growth in song sparrows. *Ecology*: Vol. 83, No. 11, pp. 3037-3047. doi: 10.1890/0012-9658(2002)083[3037:RBHCIS]2.0.CO;2

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. USFWS –Ventura CA

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. USFWS –Ventura CA

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. USFWS –Ventura CA.

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. USFWS –Ventura CA.

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.

Santa Clara River Trustee Council. 2002. Final Restoration Plan and Environmental Assessment for the Santa Clara River ARCO Oil Spill. U.S. Fish and Wildlife Service and California Department of Fish and Game, Office of Spill Prevention and Response.

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

Texas Parks and Wildlife. No date. *Trapping Brown-headed Cowbirds to Control Songbird Nest Parasitism* 4200 Smith School Rd., Austin, TX 78744. Ph. (800) 792-1112. www.tpwd.state.tx.us.

Tu, M., C. Hurd, and J. M. Randall. 2001. *Weed Control Methods Handbook: Tools and Techniques for Use in Natural Areas*. The Nature Conservancy. http://www.invasive.org/gist/handbook.html

Siegle, R and D. Ahlers. 2004. Brown-headed cowbird management techniques manual. United State Department of the Interior – Bur. Of Rec. Technical Service Center Ecological Planning and Assessment Group Denver, Colorado, 58 pp. Append A-C

United States Department of the Interior. Noxious and invasive weeds. Bureau of Lands Management California. http://www.blm.gov/ca/st/en/prog/weeds.html

United States Fish and Wildlife Service. 1985. Recovery plan for the unarmored threespine stickleback. U.S. Fish and Wildlife Service, Portland, OR.

United States Fish and Wildlife Service. 1998. Draft recovery plan for the least Bell's vireo. U.S. Fish and Wildlife Service, Portland, OR.

United States Fish and Wildlife Service. 1999. Recovery plan for the arroyo southwestern toad. U.S. Fish and Wildlife Service, Portland, OR.`

United States Fish and Wildlife Service. 2000. Draft restoration guidance. U.S. Fish and Wildlife Service, Washington, D.C.

United States Fish and Wildlife Service. 2001. Draft recovery plan for the southwestern willow flycatcher. U.S. Fish and Wildlife Service, Albuquerque, NM.

United States Fish and Wildlife Service. 2002. Final restoration plan and environmental assessment for the santa clara river ARCO oil spill. U.S. Fish and Wildlife Service, Ventura, CA.

Whitfield, M.J., K.M. Enos, and S.P. Rowe. 1999. Is brown-headed cowbird trapping effective for managing populations of the endangered southwestern willow flycatcher? Pages 260-266 In: Morrison, M.L., L.S. Hall, S.K. Robinson, S.I. Rothstein, D. Caldwell Hahn, and T.D. Rich (eds.). Research and management of the brown-headed cowbird in western landscapes. Studies in *Avian Biology* No. 18.

APPENDIX A. ARCO OIL SPILL RESTORATION PROJECTS

Table A. ARCO Land Acquisition Summary

Property Acquisition Name	Location	Acreage	Linear Miles	Amount	Date of Acquisition	Habitat Description	Comments
Vulcan – Calmat Property	The west boundary of this property begins just west of the confluence of the SCR and Piru Creek and extends eastward (upstream) for approximately 3 miles	377 acres	3 miles	$594,513	June 2005	Floodplain, bed, bank, and channel of the Santa Clara River and upland agricultural property; riparian and alluvial scrub	Currently held by The Nature Conservancy; proceeds from agricultural lease (approx. $25k/ year) being set aside for monitoring and maintenance of SCR watershed properties purchased by TNC.
Lagomarsino Property	The property is located at the confluence of Hopper Creek and the Santa Clara River	80 acres		$76,363	November 2005	Riparian and alluvial scrub	Currently held by The Nature Conservancy; *Arundo* and tamarisk control desirable in some locations
J.D.McGrath Property	This property is located on the north side of the Santa Clara River ~2.6 miles upstream from the Pacific Ocean	145 acres		$ 7.3 M; $2.0 M of which was paid by the Council	May 2010	Floodplain, riparian, ruderal and agricultural habitat	Currently held by the Nature Conservancy. Proceeds from agricultural lease being set aside for monitoring and maintenance of SCR watershed properties owned by TNC. Plans are to eventually convert the Ag land to riparian habitat.
Totlcom Property		123 acres		$3.0 M paid by the Council	December 2010	Floodplain, riparian, ruderal **an**d agricultural habitat	Currently held by the Nature Conservancy. Proceeds from agricultural lease being set aside for monitoring and maintenance of SCR watershed properties purchased by the Council. Plans are to eventually convert the Ag land to riparian habitat.
TOTAL				$5,670,876			

APPENDIX A. ARCO OIL SPILL RESTORATION PROJECTS

Table B. ARCO Restoration Project Summary

Project Title	Contact	Amount Funded	Project Status	Work	Benefits to SCR Resources
Santa Clara River Invasive Plant Removal Program (SCIPR)	Noreen Cabanting - Ventura Co Resource Conservation District (VCRCD)	$127,000	Terminated not completed	The VCRCD consolidated the upper SCR giant cane/tamarisk Removal Plan (SCARP) effort with a plan for the lower SCR and tributaries to develop a broader-based plan –**SCIPR**. The VCRCD reviewed and consolidated available survey and mapping data to produce a geodatabase and a consistent set of maps for the entire watershed.	This project will reduce the abundance of invasive plants in the SCR Watershed and will improve habitat values for fish and wildlife including T/E fish, birds, and associated species.
Programmatic Permit Preparation for the VCRCD	Noreen Cabanting - VCRCD	$67,100	Complete	Developed programmatic permits and prepared environmental documents for broad-based invasive plant control program for the riparian corridors (500 year floodplain) of the LA County portion of the SCR Watershed (SCIPR).	The permitting requirements to conduct non-native plant control programs are onerous and expensive, often discouraging capable applicants and increasing proposed costs. Developing programmatic permits will facilitate implementation of on the ground habitat restoration work by reducing costs and time necessary to begin work.
Biological Control of Invasive giant reed (*Arundo donax*) in the Santa Clara River Watershed	Tom Dudley – UC Santa Barbara	$100,000	Complete	Identified and tested biological controls for giant cane (insects, pathogens, etc. specific to the target species), which will not affect native or economically important plant species. Quantified the effects of biocontrol agents on target plants and the potential for economically feasible use of biocontrols.	Giant cane and tamarisk were recommended for controlling soil erosion in US streams and rivers. After their introduction, these species were found to be invasive, replacing native riparian spp in many areas. Developing safe and effective biological controls for giant cane could revolutionize invasive plant control programs which now rely upon laborious mechanical and/or chemical control methods that have side effects on non-target species.
Habitat Restoration at Hedrick Nature Area	Ron Bottorff – Friends of the Santa Clara River (FSCR)	$181,600	Complete	Conducted a habitat restoration project on the Hedrick Ranch Nature Area by controlling invasive non-native plants and replanting with native species.	The project will promote the restoration of a more natural function of riparian and wetland habitats along the SCR. The project will benefit various wildlife and aquatic species, including the least Bell's vireo, southwestern willow flycatcher, and southwestern pond turtle.
Riparian Restoration Handbook	Richard Ambrose/ Gretchen Coffman UCLA	$24,734	Complete	Prepared a restoration handbook to instruct on the proper methods for conducting successful riparian restoration	A scientifically-based restoration handbook benefits the Councxil and SCR resource restoration by providing guidelines which will assist individuals and agencies in planning and implementing successful restoration programs.

Amphibian and Macro-Invertebrate Bioassessment	Damon Wing –Wishtoyo	$96,335	Complete	Surveyed, identified, and mapped native and non-native amphibians and macro-invertebrates. Occurrence of sensitive birds and reptiles was also noted. Conducted a 2-day workshop on amphibian and macro-invertebrate monitoring; prepared habitat suitability maps for sensitive target species and predators; submitted collected data to various local, state, and national biological databases; and prepared a summary analysis and report of findings.	This project provides critical baseline info on distribution and abundance of biota in the SCR, which helps the Council to select and prioritize upcoming land acquisitions and habitat conservation and restoration activities. This also provides baseline information useful for future spill response.
SCR Native Fishes Distribution and Abundance	Jonathan Baskin – San Marino Environ-mental Associates	$58,010	Complete	Provides info on two listed fishes – the unarmored threespine stickleback and the tidewater goby. Info will also be gathered on the Santa Ana sucker and arroyo chub, the distribution and relative abundance of non-native fishes, African clawed frog, and on native aquatic reptiles and amphibians. Recommendations for control of non-native aquatic spp. and for restoring native species will be offered.	This project will provide critical baseline info on distribution and abundance of biota in the SCR, which will help the Council to select and prioritize upcoming land acquisitions, and habitat conservation and restoration activities to protect and enhance populations of aquatic spp. injured by the spill. This will also provide baseline information useful for future spill response.
Steelhead Habitat Assessment and Recovery Opportunities	E.J. Remson – The Nature Conservancy (TNC)	$109,094	Complete	Conducted habitat and population assessments, a hydrologic barriers analysis, and developed a restoration action plan.	This project provides critical baseline info on distribution and abundance of steelhead (an endangered species) in the SCR, which will help the Council to select and prioritize upcoming land acquisitions, and habitat conservation and restoration activities to protect and enhance populations of steelhead and other aquatic spp. injured by the spill. This also provides baseline information useful for future spill response.
Protection/ Restoration Plan for Upper SCR	E.J. Remson - TNC	$46,875	Complete	Identified important habitats in the upper SCR watershed. Developed a plan focusing on land acquisition targets which are based on environmental and human stressors, parcel ownership, and conservation goals.	This plan provides critical info to aid the Council in selecting and prioritizing land acquisitions, and identifying restoration and monitoring requirements for said acquisitions.
Avian Surveys in the SCR	Zev Labinger Jim Greaves	Labinger - $41,320 Greaves - $48,410	Complete	Conducted avian surveys in the SCR watershed to assess the general avian community and associated sensitive species; population size and distribution of T/E Birds (least Bell's vireo and the SW willow flycatcher); cowbird distribution etc.	This project provides critical baseline info on distribution and abundance of avian species in the SCR, which helps the Council to select and prioritize upcoming land acquisitions, and habitat conservation and restoration activities to protect and enhance populations of avian spp. injured by the spill. This also provides baseline information useful for future spill response.

Vegetation Classification and Mapping of the SCR	Peter Brand California Coastal Conservancy	$57,290	Complete	A detailed vegetation map, GIS dataset, and summary report were compiled for the main stem of the SCR and three tributaries in Ventura Co. Information was compiled from recent aerial photos and digital soils and elevation data. Vegetation data was compiled using the state standard vegetation system.	This project provides critical baseline info on distribution and abundance of habitats in the SCR, which helps the Council to select and prioritize upcoming land acquisitions, and habitat conservation and restoration activities to protect and enhance populations of biotic spp. injured by the spill. This also provides baseline information useful for future spill response.
Removing Zoning Barriers to Acquisition of River Properties	Lorraine Rubin – Ventura Co Planning Division	$127,364	Complete	Developed zoning and subdivision ordinance amendments, which allow lot splits for conservation purposes in Ventura County. Developed an educational outreach program to prepare an informational publication on stream and wetlands project permitting and funding.	Ventura County land use regulations formerly prohibited the subdivision of parcels under 40 acres. This project facilitates future land acquisitions and restoration opportunities for the Council and others.
SCR Touring Exhibit Project	Kristeen Penrod – South Coast Wildlands	$48,750	Complete	Developed a traveling exhibit related to protecting the SCR watershed, which is presented in communities within the SCR watershed.	Furthers Council goals to protect and restore the SCR Watershed by educating the public on how to minimize impacts on the SCR and by making the public aware of the ecological relationships which exist within the watershed.
Watershed U. – Santa Clara River	Sabrina Drill – UC Coop Extension Service	$63,224	Complete	Organized and conducted an educational program in order to develop an in-depth understanding among stakeholders of the SCR watershed, its physical, biological, social, political, and economic contexts; to provide educational materials; to increase communication; to evaluate success and to make recommendations for the future.	Furthers Council goals to protect and restore the SCR watershed by taking stock of the current state of knowledge, increasing understanding of this information among stakeholders (public, agricultural interests, public officials, and planners), developing communication and building support for a collaborative approach to restoration of the SCR through public education and outreach.
SCR Outreach Campaign Project	Kristeen Penrod – South Coast Wildlands	$30,219	Complete	Developed an illustrated book and pamphlet which describes the SCR watershed, indicating its biological importance and describing sustainable methods for its protection.	Furthers Council goals to protect and restore the SCR watershed by educating the public on how to minimize impacts on the SCR and by making the public aware of the ecological relationships which exist within the watershed.
River Rally	Heather Merenda City of Santa Clarita	$72,643	Complete	Conducted two river rallies to clean trash from the SCR area near Santa Clarita. Educated the public on how to protect the river.	Furthers Council goals to protect and restore the SCR watershed by educating the public on how to minimize impacts on the SCR and by making the public aware of the ecological relationships which exist within the watershed.
Volunteer / Stewardship Program	Ron Bottorff – Friends of the SCR	$26,120	Complete	Developed a volunteer and stewardship program and constructed an information kiosk at the Hedrick Ranch Nature Area on the SCR near Santa Paula.	Furthers Council goals to protect and restore the SCR watershed by educating the public on how to minimize impacts on the SCR and by making the public aware of the ecological relationships within the watershed.

Think River	Rick Thomas – California Resource Connections	$13,526	Terminated not completed	Developed an educational program for the SCR Watershed in LA County which targets 5th grade teachers and students and provides watershed based training materials, teacher training, and practical field experience for teachers and students.	Furthers Council goals to protect and restore the SCR watershed by educating the public on how to minimize impacts on the SCR and by making the public aware of the ecological relationships which exist within the watershed.
UC reserve research station	University of California	$250,000 disbursed so far	On-going	To establish a University of California Reserve/Research Station in the Santa Clara River watershed ; $125,000 of the funds are currently being used to eradicate *Arundo* and restore 10 acres of the TNC's Taylor Property.	The SCR Reserve/Research Station would help facilitate the research, educational and restoration aspects for natural resource conservation in the SCR watershed.
TOTAL		**$1,464,614**			

INDEX OF COMMENTS

Comment 1: Friends of the Santa Clara River

It appears that there are no other plans for a programmatic permit for the SCR TC's restoration funding and that this is the EA, correct? Will TC funds be available for permitting, monitoring and reporting costs to selected project proponents?

Response

You are correct; there is no current plan to fund programmatic permits in the lower watershed. This is primarily because the programmatic permits in the upper watershed did not result in the high level of restoration that we had hoped to see. Instead of investing significant resources to establish programmatic permits in the lower watershed, we are thinking of taking the approach of funding individual restoration projects. We are willing to fund the permitting, monitoring and reporting aspects of such projects, in addition to the on-the-ground work. If you have thoughts on this approach, we would love to hear them.

Comment 2: Frank B and Associates for Santa Paula Creek Fish Ladder Authority

I'm a consultant to the Santa Paula Creek Fish Ladder Authority, and we are nearing completion of our second study funded by the Department of Fish and Game for solutions to fish passage at the Harvey Diversion at Mud Creek. With the completion of the current study effort we should be at approximately 60% design on what looks to be a grade stabilization project below the existing diversion and fish ladder. We have an interim solution in mind as well as a long term solution and funding would speed the process to improved passage of Steelhead. An interim fix would be around $250,000 and the long term fix probably in excess of $5 million. So yes, we are looking for money putting it bluntly.

So, when you are requesting comments on the subject report, can you tell me what that means? Does that mean that I need to comment saying that funding our interim or the long term solution would be a much better use of the money than what you are considering using the money for in this report?

Response

In order for us to spend the funds that we received from our Natural Resource Damage Assessment settlement with ExxonMobil for effects of their oil spill on the Santa Clara River, we need to have a Restoration Plan in place that has been circulated for public review. We are requesting comments on the way that we propose to spend these funds, which in short, includes: 1) purchase of fee-title or conservation easements on lands that support species that were affected by the oil spill; and 2) habitat restoration to benefit the species that were affected by the oil spill. We are seeking public comment on the appropriateness of these two measures in offsetting the adverse effects of the oil spill. We have not identified specific projects that would be funded within these two broad categories, but welcome the public to discuss project concepts with us. Since fish passage projects could potentially fit into the "habitat restoration" category, we will consider this project as we move forward.

Comment 3: City of Santa Clarita

Thank you for the opportunity to comment on this plan. After reviewing the plan, it is unclear to me what projects are actually going to be funded by the Exxon funds. There is a good outline of the ARCO projects funded. However, I have a specific project concern. The City of Santa Clarita has submitted two requests for funding to help manage resprouts of arundo from City owned parcels where we have already cut. It is not clear from this document that 1) the City of Santa Clarita has requested $30,000 a year for up to three years after an area has been first cut to help manage resprouts and 2) that projects like ours would now be given an opportunity to be funded. Could there be a reference to the fact that the City of Santa Clarita has made two requests for additional funding and were denied under ARCO and that we should be considered for funding under the EXXON funds? There is a good outline of the ARCO projects funded. However, I have a specific project concern.

Response

The Exxon plan outlines two major methods of restoration rather than identifying individual projects. These two restoration methods are: 1) land protection and 2) habitat restoration. Assisting with the maintenance of a restoration project would fall under the habitat restoration category. The Trustees will consider funding your project using Exxon funds as we move forward.

Comment 4.1: University of California, Santa Barbara

Can a contingency fund be set up to target arundo resprouts after fires or flooding. This is when arundo removal is cheapest and easiest. But, a mechanism for getting the work done would also need to be established (who would do it?).

Response

We understand and agree with this approach. The Trustee Council (TC) attempted to address this concept in the past but the permitting process proved to be a significant obstacle to addressing Arundo regrowth in a timely manner. There is a general permit in place in the upper watershed but there is none in the lower SCR watershed.

This concept would work well in locations where individual permits are already in place like on TNC properties.

Comment 4.2: University of California, Santa Barbara

I suggest that for each restoration project, a scientifically-based, quantitative monitoring program must be set up to evaluate effectiveness of restoration actions and overall project success.

Response

In accordance with federal guidance, the TC includes a monitoring component in our restoration work. The level of monitoring is subject to available funds and weighed against alternative uses of the funds. .

Comment 4.3: University of California, Santa Barbara

I also suggest that each project must contain a cost benefit analysis to show how cost effectiveness has been achieved relative to other restoration projects.

Response

The TC tracks the costs of each project, as well as the benefits (in terms of acres restored and other less quantifiable measures). These help guide future decisions regarding project implementation. A detailed cost benefit analysis would only be conducted if funds were available and the TC deemed it a worthy use of available funds.

Comment 4.4: University of California, Santa Barbara

Page 23 [Section 6.2]. "In most cases, native vegetation will naturally propagate and fill in areas where Arundo has been removed, but, in some cases, it may be necessary to re-establish native vegetation, particularly in locations where large, dense, stands of Arundo are removed."

We've had this discussion with the Trustee Council previously, and I don't want this to be mis-leading to the public. Most studies show that riparian areas are revegetated only by propagules brought in by floods. There is a strong potential that if areas are left

unvegetated after arundo removal, opportunistic weeds and other invasive plants will establish, with little resulting habitat benefit. This is happening with tall white top (Lepidium latifolium), which is slowly moving down the river from LA County.
I agree that passive restoration should be allow to occur to the greatest extent possible, but don't want to see the paradigm established that only arundo removal is needed. This is especially true if a lack of revegetation leads to the need for repeated or additional herbicide treatments to control weeds. Many annual weeds are much more difficult to control because of their extensive and long-lived seed bank (which arundo doesn't have). We are currently testing the ability of areas to naturally recover following arundo removal at the Taylor property. This is a really 'wet' property, so it should be tested elsewhere as well.

Response

The TC agrees with this comment. Revegetation should be done on an "as needed" basis in areas where the threat of weed invasion is greatest. Where the likelihood of natural propagation is high, natural propagation should be given an opportunity to occur before an extensive revegetation project is undertaken.

The relevant text in Section 6.2 has been revised as follows:

> "In ~~most~~ some cases, native vegetation ~~will~~ has been observed to naturally propagate and fill in areas where *Arundo* has been removed, but, in ~~some~~ other cases, it may be necessary to re-establish native vegetation, particularly in locations where large, dense, stands of *Arundo* are removed."

Comment 4.5: University of California, Santa Barbara

Page 24 [Section 6.2]. Suggestion – use glyphosate or glyphosate formulation approved for aquatic habitats (such as Rodeo or Aquamaster) instead of just using the Trade names.

Response

The Trustee Council agrees with this comment. The relevant text in Section 6.2 has been revised as follows:

> "Herbicide treatment would involve the use of ~~a~~ glyphosate-based products ~~such as Roundup which is suitable for upland areas or Rodeo which may be applied in riparian areas. Rodeo has been~~ approved for riparian or aquatic use by the U.S. Environmental Protection Agency and the California Department of Pesticide Regulation (e.g., Rodeo, Aquamaster, etc.) ~~and reportedly~~ that do~~es~~ not pose a threat to wildlife, fish and other aquatic species if used properly and if applicators use a non-ionic surfactant (e.g. Agri-dex) when applying herbicides in and around aquatic environments (Tu et al. 2001).

Comment 4.6: University of California, Santa Barbara

Could levee setbacks to regain floodplain forests be included in the list of potential barrier removal projects?

Response

Yes, removing a levee could be successful particularly for habitat restoration of floodplain forests as you state. Such projects would be considered for funding by the TC as habitat restoration projects.

Comment 4.7: University of California, Santa Barbara

Suggestion – Provide a list of Trustee Council objectives for each project type. Restoration projects examples: Increase acreage of willow-cottonwood woodland, increase LBV and Cuckoo habitat and populations, reduce cowbird densities by X%, reduce impacts of African clawed frogs by reducing/controlling populations, etc.

Response

We have purposefully crafted the objectives within the Restoration Plan to be general in nature in order to allow for a wide variety of restoration projects to be undertaken. We, agree that discrete objectives that are linked to species and biological goals are desirable, and we request such objectives to be included in the Scope of Work for individual projects.

Comment 4.8: University of California, Santa Barbara

Emily Wilson, a grad student at UCSB, is finding that African clawed frogs are extremely abundant in the SCR especially at HRNA, Fillmore, and the Estuary. This is most likely the biggest threat to amphibian (and maybe some reptile) species in the river. Could this be added as a potential focal area?

Response

We agree that African clawed frogs are a threat to native amphibian and fish species in the Santa Clara River and would consider funding projects to address this threat.

Comment 4.9: University of California, Santa Barbara

Information on where project results, reports, etc. can be found or how to request them.

Response

We agree that this information is necessary to include in the Restoration Plan and have included a link to the California Department of Fish and Wildlife's website (it is http://www.dfg.ca.gov/ospr/NRDA/restore_monitor_reports.aspx) where reports can be found as well as contact information for the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service lead trustees, who can also provide this information.