RESTORATION ACTIONS WITHIN THE SAN LUIS OBISPO CREEK WATERSHED

UNOCAL OIL SPILL, AVILA BEACH, 1992

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EXECUTIVE SUMMARY

On August 3, 1992 an oil pipeline owned by UNOCAL ruptured and spilled approximately 600 barrels of San Joaquin Valley crude oil onto nearby lands and water in the Avila Beach area. The spill flowed from the pipeline through a gully, down a cliff face, and into marine waters. The spill directly impacted natural resources, which include: vegetation, intertidal and subtidal sediments and biota, fisheries, birds, marine mammals, and other valuable resources. This document is the final Restoration Plan for the San Luis Obispo Creek watershed that is mandated by a State Settlement Agreement and parallel Federal Consent Decree for the above described spill. The San Luis Obispo Superior Court entered a Final Judgment Pursuant to the Stipulated Settlement Agreement (the "State Settlement Agreement") in May of 1996 and the parallel Consent Decree was also entered in or about May of 1996 (collectively the State Settlement Agreement and Consent Decree are referred to as "the settlement").

A draft plan was distributed for public review and comments in March of 1997. A public meeting on the draft plan was held on March 31, 1997 to permit further review of the proposed projects by the local community. Numerous comments were received and are summarized in Appendix D. The final plan is divided into seven sections regarding authority over restoration funds, the purpose of plan, background to resource injuries, background to project alternative selection, proposed projects, project management, and project budgets. All restoration project concepts proposed, including those meeting and not meeting restoration criteria for implementation, are included in Appendices A through C.

Following the settlement, a Trustee Council was formed to ensure coordination and cooperation of the State and Federal natural resource trustees. The Trustee Council is made up of representatives from the California Department of Fish & Game, Office of Spill Prevention and Response (OSPR) and the United States Fish & Wildlife Service (USFWS). The Trustee Council is responsible for expending the funds from the settlement for the expressed purpose of restoring, replacing, rehabilitating, or acquiring the equivalent of the natural resources injured by the oil spill.

The purpose of this restoration plan is to respond to public comments and to inform the public of the projects that were selected for implementation as compensation for injuries to biological resources caused by the spill. Restoration under this plan is being conducted under the authority of the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act and the Oil Pollution Act of 1990.

The resources to be restored under the terms of the settlement will address injuries to geologic and coastal habitat resources, fish and wildlife resources, and recreational use losses. Specific impacts to fisheries, birds, sea otters, and microscopic biota have been documented by State and Federal agencies. The proposed projects in this plan address direct or indirect restoration benefits to these resources, with the exception of restoration for sea otters. Restoration for sea otters is addressed in a separate "Sea Otter Restoration Plan". Compensation for recreational use losses was addressed through Port area and beach enhancements carried out by the Port San Luis Harbor District. Additionally, Unocal was

required to implement a terrestrial revegetation plan above Boulder Cove. This on site terrestrial revegetation project was designed to stabilize soils and minimize siltation into the intertidal community below the drainage area that was revegetated.

The California Department of Fish and Game (CDFG) has determined that the restoration actions in this plan will not cause a substantial, or potentially substantial, adverse change in any of the physical conditions within the areas affected by the projects. Additionally, the CDFG considers these projects to be categorically exempt pursuant to CEQA. The United States Fish and Wildlife Service (USFWS) considers these projects to be categorically exempt from NEPA as well.

The Trustee Council determined that on-site restoration projects in the intertidal zone and adjacent waters would be technically difficult to implement or expensive relative to expected benefits. Consequently, the Trustee Council decided to evaluate off-site projects in and along San Luis Obispo Creek that would be technically feasible and would restore or benefit the same types of resources injured in the Avila Beach spill. This is consistent with the terms of the Settlement. Restoration actions focus on benefiting fisheries, birds, intertidal organisms, and general primary productivity, through overall improvements in the productivity of San Luis Obispo Creek and the estuary. Additionally, biological resources are expected to benefit by the expansion and enhancement of riparian corridors and habitats, the minimizing of sedimentation of the creek and estuary, and the removal of fish migration barriers. However, depending on the availability of restoration funds, consideration will be given to future specific restoration projects that may be identified in the intertidal and adjacent waters that are technically feasible and meet the evaluation criteria.

Alternatives for restoration include the “no project” alternative, cooperation with existing project proponents, and a set of new proposed projects. Proposed restoration projects in this plan have been divided into two broad categories. These categories consist of the following:

- **Riparian Corridor Revegetation** - To reduce sediment delivery to the creek and estuary and expand and improve habitat for native riparian plant species and resident and anadromous fish.
- **Fish Barrier Removal** - To facilitate passage of anadromous and resident fish.

Public and agency input was sought regarding implementation priorities. All public and agency input was reviewed by the Trustee Council, and descriptions of their comments, along with the Trustee Council’s responses and actions, are included.

Primary project management will be the responsibility of the Trustee Council. The Trustee Council will review and approve all projects and invoices for this plan and oversee the local project manager.

The Trustee Council has selected the Land Conservancy of San Luis Obispo County (LCSLOC) as the local project management group for projects undertaken under this plan. The LCSLOC was chosen based on their experience with restoration project implementation, local community involvement, and watershed program development. The LCSLOC will work on behalf of the Trustee Council to assist in project design and permitting, prepare implementation plans, and provide local implementation oversight.

Implementation of restoration projects will begin over a period of approximately three years. An additional monitoring period of at least three to five years will follow each project. Projects not requiring permits will be implemented immediately, while projects requiring additional hydrologic analysis, engineering work, and agency permits will be implemented as the preliminary work is completed. An implementation schedule will be developed for each of the projects chosen by the Trustee Council, and will be available through the LCSLOC.

The State Settlement Agreement and Federal Consent Decree required Unocal to deposit $950,00 into an interest bearing trust account with the National Fish and Wildlife Foundation to be managed by the CDFG. Additionally, the State Settlement and Federal Consent Decree provide guidance on the categories of restoration projects and levels of funding. The settlement allocated $425,000 for riparian corridor revegetation, $250,000 for fish migration barrier removal, and $275,000 for estuarine habitat restoration. Due to the ongoing contaminant cleanup in the vicinity of Avila Beach and the estuary as a result of other pipeline spills by Unocal, referred to as the Avila Beach Remediation Project, the Trustee Council has temporarily set aside the funds for work in the estuary. In addition to the delays caused by the ongoing contaminant cleanup from the Avila Beach Remediation Project, there were other problems associated with the project concept proposals proposed for the estuary. These problems are described in Appendix B1. Restoration funds originally allocated for estuarine habitat restoration will remain available for additional project concepts that meet the Trustee Council's restoration goals as specified in the State Settlement Agreement and Federal Consent Decree.

I. INTRODUCTION

The California Department of Fish and Game (CDFG) and the United States Fish and Wildlife Service (USFWS) are the Natural Resource Trustees designated or authorized pursuant to the Oil Pollution Act of 1990. As Trustees for natural resources, they act on behalf of the public to assess injuries to natural resources following an oil spill, and develop and implement restoration plans to restore injured resources. Additionally, the CDFG is the Trustee for fish, wildlife, and their habitat under State law and the CDFG's Office of Spill Prevention and Response is charged with assessing natural resource damages and restoring injured resources pursuant to the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act.

The Trustee Council distributed the Draft Plan for Restoration Actions within The San Luis Obispo Creek Watershed in March, 1997 to elicit public and agency comments regarding each of the project concepts. Comments received were reviewed by the Trustee Council and were used to modify plans and to select a subset of projects that would be beneficial to natural resources and could be implemented successfully, and had sufficient nexus to resources injured by the spill.

The projects selected by the CDFG and the USFWS in this Restoration Plan are consistent with the Final Judgment pursuant to a Stipulated Settlement Agreement in the State action against Unocal arising from the 1992 pipeline rupture at the Unocal Avila Beach Tank Farm in Avila Beach, California ("State Settlement"). Additionally, a separate Consent Decree, which parallels the terms of the State Settlement, was entered by the United States Government in Federal District Court.

The State Settlement and Federal Consent Decree required Unocal to place $950,000 into the Avila Beach Trust established with the National Fish and Wildlife Foundation. The funds were allocated for riparian corridor revegetation, estuarine habitat enhancement, fish migration barrier removal, and for design, implementation, permitting, and monitoring of the restoration projects. The Trustee Council retains the authority to modify the allocation of funds and to implement other projects deemed reasonable and necessary to restore impacted resources in accordance with the Oil Pollution Act, the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act, and the regulations governing the use of recoveries for natural resource injuries. Ongoing contaminant cleanup in the vicinity of Avila Beach as a result of the Avila Beach Remediation Project, and uncertain levels of disturbance to the estuarine habitat resulting from these cleanup activities, have led the Trustee Council to hold the funds for estuary enhancement in reserve for projects within the San Luis Obispo Creek watershed. The Trustee Council will use the established restoration criteria when selecting any restoration projects.

In addition, the State Settlement and Federal Consent Decree required the sum of $150,000 to be paid to the Port San Luis Harbor District for enhancement of Port area beaches. The Harbor District has used the money to purchase dredging equipment to dredge the area around the boat launch to improve boat access. The dredge spoils will be used to augment the adjacent beach. A sum of $100,000 was paid to the Department of the Interior's Natural Resources Damage Assessment and Restoration Fund for sea otter enhancement projects. A

separate restoration plan has been developed for sea otters that can be obtained from the U.S. Department of Interior Fish and Wildlife Service, Ventura Field Office, 2493 Portola Road, Suite B, Ventura, California 93003, or on the Land Conservancy of San Luis Obispo County (LCSLOC) web site at http://www.slonet.org/vv/land_con .

II. PURPOSE

The purpose of this restoration plan is to notify the public of the restoration alternatives considered and those that were selected by the Trustee Council as compensation for injuries to resources other than the sea otters. The restoration projects in this plan will compensate for injuries that occurred to intertidal resources, birds, and fish. Additional benefits to humans, such as enhanced wildlife viewing, are expected following implementation of the ecological restoration projects. Also, Unocal was required to implement a terrestrial revegetation plan above Boulder Cove. This on site terrestrial revegetation project was designed to stabilize soils and minimize siltation into the intertidal community below the drainage area that was revegetated.

The proposed restoration actions are being conducted under the authority of the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act (Government Code 8670.1 et seq.) and the Oil Pollution Act of 1990 (33 U.S.C. 2701 et seq.). The goal of both acts is to restore injured natural resources such as wildlife, fisheries, and their habitat through implementation of restoration projects and to compensate the public for lost use and enjoyment of natural resources (including public beaches) caused by the discharge of oil into marine waters. These goals are achieved through the implementation of restoration alternatives that restore, rehabilitate, replace, or acquire the equivalent of injured natural resources.

III. BACKGROUND TO RESOURCE INJURIES AND PROPOSED RESTORATION

On August 3, 1992, the rupture of a Union Oil Company of California (Unocal) pipeline near Avila Beach, California, caused a discharge of up to 600 barrels (25,200 gallons) of San Joaquin Valley crude (SJVC) oil to flow along a ravine, down a cliff face, and into a small cove (given the unofficial name of “Boulder Cove”). The discharge resulted in contamination of intertidal and subtidal sediments and biota, fisheries, birds, mammals, and other valuable resources in and about Avila Beach, Olde Port Beach, and Pirates Cove Beach. Prior to the spill, the rocky coast in the Avila Beach area existed in a relatively natural condition.

The pathway of the discharged oil to the impacted resources was: (1) from a broken pipeline; (2) through a ravine; (3) over a 7 - 11 meter high coastal bluff and cliff face; and (4) into Boulder Cove and marine waters. Oil traversed the supertidal zone penetrating the sediments and flowed into the intertidal zone and onto the sea surface. Marine surface waters served as the exposure pathway for injury to resources when tides, currents, wind and swells transported the oil to the south where it contacted kelp beds and offshore rocks and to the east

and west where it contacted rocky headlands and the shoreline of adjacent coves. Chemical fingerprinting of collected oil samples revealed the source and the pathway. Shortly after the spill, oil was observed on the ocean surface extending over about 20,000 square meters within the boomed area described below and an estimated 50,000 square meters outside the boomed area. Spill response personnel observed an additional unquantified amount moving out to sea.

Response and cleanup efforts commenced following the spill. Booms were placed around "No Name", "Boulder", and "Forgotten" Beaches to contain the discharged oil. County health officials closed Avila, Olde Port and Pirates Cove Beaches to the public due to persistent sheen and tar balls on the shoreline. On August 9, 1992, County Health officials opened Olde Port Beach and opened Avila Beach to shore use only. On August 10, 1992, beaches in Avila Bay west of the municipal pier were opened to the public for water contact use. Pirate's Cove Beach was opened on August 25, 1992. The Trustee Council estimated that a total of 160 barrels (6,720 gallons) of oil, after adjusting for water volume and kelp, was recovered during cleanup operations, which ended on or about August 29, 1992.

A. DESCRIPTION OF NATURAL RESOURCE LOSSES

The following discussion pertains to a conservative estimate by the Trustee Council of injuries and recreational impacts that are expected to have occurred as a result of this spill. Impacts from the spill may have directly or indirectly affected a resource or the "services" provided by that resource. For example, surfgrass was directly oiled, reducing its productivity. In addition, the "services" provided by surfgrass, such as habitat for invertebrates, may have also been impacted.

1. Geologic and Coastal Habitat Resources:

The rocky intertidal shores provide habitats and food for a broad diversity of organisms. Sandy beaches also provide habitat for numerous infauna that serve as food for other organisms within the marine ecosystem. Oiling of these habitats, and the methods used to remove the oil from the environment, can have serious short-term and long-term effects on the marine life. In most instances, some level of residual oil persists beyond the period of response cleanup and provides a potential source of chronic pollution.

SJVC oil initially flowed across the intertidal zone and onto the sea surface, but the oil was repeatedly moved across the intertidal by winds, waves, and the rising and falling tides. This resulted in a patchy distribution of oil in the intertidal zone, with some spots heavily fouled and other spots exposed to various degrees of lighter oiling. The intertidal zone includes the strip of land exposed between high and low tides, as well as the supratidal zone, which is uppermost in the intertidal and is subjected to the influence of storm waves and sea spray. The total area of shoreline impacted by the spilled SJVC oil was estimated by multiplying the approximately 6,445 linear meters of oiled shoreline by three meters, a conservative estimate of the average width of the intertidal zone, to derive 19,335 square meters contacted by oil.

The heaviest level of oiling was in Boulder Cove. Although the oil distribution was patchy, all intertidal areas of the cove are believed to have been impacted. Approximately 2,000-2,500 m^2 of intertidal area composed of rocky outcrops, bedrock platforms, large boulders, cobbles, and sand are exposed at low tide. The area supports a diversity of plant and animal life and has extensive beds of surfgrass in sand-lined tidepools.

The levels of petroleum hydrocarbons measured in some sediment and pore water samples from Boulder Cove exceeded concentrations recorded in other laboratory and field studies in which biological injuries resulted from crude oil exposure. The effects of oil contamination on the natural resource services provided by the Boulder Cove intertidal community include the reduction of clean habitat, diminished food supplied by algae and the invertebrates, and a decrease in species abundance and diversity that might affect the overall stability of the intertidal community.

2. Fish and Wildlife Resources:

In addition to the impacts noted above to marine plants, invertebrates, and intertidal habitat, three other categories of biological resources were impacted.

a. Fisheries.

Apart from sport fisheries, which were addressed as recreational losses, a local king salmon fishery was impacted. Since early May 1992, approximately 50,000 state-owned king salmon were being reared in salt water pens near the spill site by Central Coast Salmon Enhancement, Inc. The fish were scheduled for release in mid-August, after growing to a size of one-eighth of a pound. Based on weekly observations, fish losses had been minimal prior to the spill. Following the spill, fish were observed engulfing and expectorating oil saturated fragments of the sorbent material placed in and around the rearing pens.

Fish in the rearing pens began to show obvious symptoms and behaviors associated with vibriosis eight days after oil arrived at the mooring site of the salt water pens. Scuba observations on the sixth day found only 11 dead fish whereas 206 dead fish were found dead on the ninth day.

Vibriosis is caused by a marine bacterium, *Vibrio anguillarum*. This bacterium is always present in the water, but only becomes a problem when the immune system of the fish is compromised. As with many animals, the immune system of fish can become compromised due to external stresses such as an oil spill. The incubation time from infection by *Vibrio anguillarum* to exhibition of symptoms is approximately eight days.

Prior to release, approximately 1,500 of the rearing king salmon had died of vibriosis. Based on *SCUBA* observations, the total loss to vibriosis was estimated at 10,000 fish, which represents 20 percent of the 50,000 fish being reared by Central Coast Salmon Enhancement, Inc..

b. Birds.

At least 77 marine birds of eight categories died due to oiling (Table 1). Four of these birds were California brown pelicans, a Federally listed species. Fourteen seabirds, including seven California brown pelicans, were treated and released from a rehabilitation center. Based on follow-up studies, at least three pelicans died soon after release and it is likely that many of the other rehabilitated seabirds died or suffered reduced reproductive capability and chronic effects (Anderson et al., 1996).

Table 1. Numbers of Birds by Category Collected During the Unocal Avila Beach 1992 Oil Spill

Category	Number Recovered
Alcids	28
Loons	1
Grebes	1
Shearwaters	20
Waterfowl	1
Shorebirds and Gulls	7
Cormorants	15
Pelicans	4
Total	**77**

Twenty-two additional pelicans with varying degrees of oiling were observed roosting in the immediate vicinity of the spill during cleanup activities. Those birds were able to fly and were not captured. Based upon past research, mortality rates for oiled birds are known to be high (Sharp, 1996; Wernham et al., 1997). Those individuals that do survive typically exhibit abnormal behavior and fail to breed at least in the first breeding season following the exposure (Sharp, 1996). Therefore, the impact of this spill on the California brown pelican population is represented by the pelican mortality during and after rehabilitation, and the impaired reproductive potential of those individuals that survived.

As a result of oiling, services that would otherwise be provided by the foregoing seabirds were eliminated or impaired pending natural recovery. Seabirds provide important ecological services in the California inshore marine environment as predators affecting populations of marine fish and invertebrates, as indicators of the health of the marine environment, as food for raptors such as the endangered peregrine falcon (a nest of which is located adjacent to Boulder Cove), and as contributors to energy flow in the marine ecosystem. Marine birds also provide important services to humans as they are observed and enjoyed by many tourists and wildlife enthusiasts.

c. Sea Otters.

Three dead sea otters, a Federally and State listed species, were examined during the spill. Two were determined to have died due to the effects of acute oiling. Oiling was determined to have contributed to the death of the third animal.

Two additional live oiled otters were captured. One was released after determining that certain unrelated facial injuries were too severe to risk the additional stress that could be

caused by rehabilitation activities and that no immediate treatment for the facial injuries was feasible. Nonetheless, the exposure to oil undoubtedly lowered the animal's long-term prognosis. The other otter was transported to the Monterey Bay Aquarium (MBA) for cleaning and rehabilitation. The MBA otter was released in Monterey Bay and survived at least 8 weeks as determined by radio tracking. The prognosis for this animal, based upon the erratic behavior it exhibited and the fate of animals that experienced similar treatment in Alaska following the Exxon Valdez oil spill, was not good (Ballachey et al., 1994).

Additional otters were observed swimming through the oil spill cleanup area following the spill and most likely came in contact with the oil. The actual number of otters exposed to the oil is unknown. At the time of the spill, the local population consisted of approximately 57 adults and three pups. In addition to those otters observed swimming in the oil, others within the local population could have been exposed given that their habitat includes the assessment area between Avila Pier and Pismo Pier.

Sea otters provide important ecological services as they directly influence populations of their marine invertebrate prey, some of which are major herbivores on giant kelp. As a keystone species in the inshore marine environment of California, they influence the species abundance and diversity of all marine animals in the giant kelp community (Kenyon, 1969).

Sea otters are one of the most widely recognized marine wildlife species on the west coast of the United States. They provide valuable services to humans as they are observed and enjoyed by many tourists and wildlife enthusiasts. The recovery of the California sea otter population from near extinction at the turn of the century has slowed in recent years (Anon., 1996). This fact makes the impacts on the population due to the Avila Beach spill more serious.

3. Recreational Losses:

The areas impacted by the spill support a number of recreational activities including: beach use, sport fishing, pleasure boating, jet skiing, surfing, wind surfing, ocean kayaking, wildlife viewing, SCUBA diving, general pier recreation, cycling, and hiking. The impacted areas are not used for commercial fishing, although there is a king salmon salt water rearing pen facility located nearby.

a. Shoreline Recreation

Beach recreation mainly occurs at three beaches in the area: Avila Beach, Olde Port Beach, and Pirates Cove Beach.

Avila Beach is a large popular beach located in downtown Avila Beach. The beach contains playground equipment, barbecue grills, fire pits, picnic tables, and a bathing/changing house with restrooms. Typical daytime activities include sunbathing, wading, boogie boarding, and swimming. People also build bonfires on this beach, primarily on Thursday, Friday and Saturday nights during most of the year. Avila Beach was officially closed for five days.

Olde Port Beach is a smaller, less popular beach immediately north of Avila Beach. Olde Port was officially closed for five days. This beach has a public access boat ramp for small boats such as jet skis, zodiacs, catamarans, and small aluminum boats. Pirates Cove Beach is a small beach with rocky and sandy beach areas and is located to the south of Avila Beach. This is a swimsuit optional beach with no facilities. Pirates Cove Beach is the only clothing optional beach in the San Luis Obispo area. Pirates Cove Beach was officially closed for 21 days.

In addition to general beach recreation, jet skiing, wind surfing, and ocean kayaking also occur in San Luis Obispo Bay. The jet skis are launched at Olde Port Beach. Wind surfing boards are launched from the Avila and Olde Port beaches. Kayaks are mainly launched near Harford Pier and at Olde Port Beach. These activities were lost or precluded while the beaches were closed following the oil spill.

The bluffs overlooking Boulder Cove are also used by some people for viewing birds, seals, whales, and other wildlife. This area was closed to the public from August 4**,** until the end of the cleanup, since this was the staging area for cleanup operations. Consequently, wildlife viewing in this area was lost or precluded during the closure period. The Port San Luis Harbor District received $150,000 in settlement funds to implement projects that will compensate for lost recreation due to the spill.

B. NATURAL RESOURCE DAMAGES

On-site restoration, which would accelerate recovery rates of the injured resources in the intertidal area, was not selected because of factors related to technical feasibility, expected benefits, and cost. In evaluating restoration alternatives for this spill, the Trustee Council considered the following: (1) the allocation of funds in the State Court's Final Judgment pursuant to a Stipulated Settlement Agreement and the parallel Federal Consent Decree; (2) technical feasibility; (3) whether a project would accelerate the rate of natural recovery of the types of natural resources injured in the Avila Beach spill; and (4) whether the project could be implemented at a reasonable cost.

San Luis Obispo Creek is a significant contributor of nutrients necessary to support primary productivity in the near shore marine environment of San Luis Bay. The sources of this primary productivity include: attached macroalgae such as giant kelp (*Macrocystis*) and phytoplankton, which comprise the basis of a healthy food chain in the bay. The attached algae provide food and shelter for a variety of finfish and invertebrates such as salmon, white seabass, rock fish, and abalone. Plankton provides food for forage fish such as top smelt, anchovies, and juvenile rock fish, which in turn provide a food source for numerous marine birds, such as brown pelicans, cormorants, terns, and shearwaters, as well as marine mammals. The creek mouth estuary is a significant habitat for several important forage fish including: shiner perch, sardines, and top smelt, and is also habitat for several sport fish species including steelhead, king salmon and striped bass.

The creek and wetlands are also used by migratory birds (e.g., waterfowl, Black Brant, and shorebirds) as well as resident riparian birds such as great blue herons, cormorants, black-

crowned night herons, and egrets. Studies on the creek corridor indicate that the health of its many co-dependent biological systems would be much improved by projects that stabilize the banks, revegetate the riparian areas, improve water quality by reduction of pollutants and/or cooling the water temperature, increasing the flushing of the estuary, and reducing siltation.

The restoration projects proposed in this plan will benefit injured marine resources in several ways: (1) increased primary productivity in the riparian ecosystem, that will benefit microbiota, macrobiota, and ultimately birds and mammals in the inshore marine environment; (2) enhancement of a wildlife corridor that will enable upstream movements and improved habitat use by coastal and estuarine waterbirds; (3) dramatic improvement of anadromous fish habitat by provision of creek shading (thermal protection), protection from predators, production of food, improvement of spawning habitat, and removal of fish migration barriers; (4) reduction of creekside erosion and associated sediment deposition in the lower reaches of the creek and the marine environment, that would further impact the injured resources through excessive siltation and subsequent loss of habitat; (5) reduction in nonpoint source urban and agricultural runoff, that would otherwise impact the injured marine resources, by the absorption and biodegradation of pollutants by natural biological processes in the riparian ecosystem; and, (6) enhancement of public use activities through recreational and educational opportunities provided by a healthy riparian corridor.

IV. BACKGROUND TO ALTERNATIVE SELECTION

Projects presented in this plan were evaluated for conformity with a watershed based approach to restoration, consideration of applicable State and Federal laws, and a set of established criteria for restoration projects.

A. RESTORATION IN THE CONTEXT OF A WATERSHED APPROACH

The proposed projects in this restoration plan incorporate a watershed based approach to effectively restore and protect aquatic resources. This is consistent with the United States Environmental Protection Agency (EPA) approach to promote watershed based planning efforts. This is also consistent with other activities that have been managed by the LCSLOC, that is already working in the San Luis Obispo Creek watershed.

Emphasis under the watershed approach is directed at all aspects of surface and ground water quality including physical, chemical, and biological parameters.

The alternatives proposed in this document are consistent with these activities.

The watershed approach is action oriented, driven by broad environmental objectives, and involves key stakeholders. The major cornerstones of the approach are public participation, problem identification, and implementation of restoration projects.

1. Public participation and interagency cooperation.

a. San Luis Obispo Creek Watershed Task Force.

A San Luis Obispo Creek Watershed Task Force previously existed and was composed of a group of watershed stakeholders including landowners, agency representatives, and others with an interest in watershed quality. This group discussed watershed issues and promoted cooperative solutions. The Trustee Council, through the LCSLOC, propose to organize a similar group to act as technical support and to provide reviews of detailed restoration project workplans as they are developed and prior to project implementation. Some of the participating groups are listed in Table 2.

Table 2. San Luis Obispo Creek Watershed Task Force Participants.

Landowners and Citizens	County of San Luis Obispo
Regional Water Quality Control Board	Caltrans
California Polytechnic State University	Land Conservancy of San Luis Obispo County
San Luis Obispo County Farm Bureau	Central Coast Salmon Enhancement, Inc.
City of San Luis Obispo	

b. San Luis Obispo County Flood Control - Zone 9 Advisory Committee.

Zone 9 of the San Luis Obispo County Flood Control District encompasses the San Luis Obispo Creek watershed. This advisory group includes representatives from local governments and agricultural interests as well as other stakeholders. They provide guidance to the County Board of Supervisors on flood control issues and policy, and expend funds for projects within the San Luis Obispo Creek watershed. The Land Conservancy of San Luis Obispo County will supply this group with project information necessary to facilitate any possible collaboration with local government agencies.

2. Problem identification within the San Luis Obispo Creek Watershed

a. Channelization, Bank Erosion, and Lack of Vegetation.

The “San Luis Obispo Creek Watershed Hydrologic Survey”, prepared by the LCSLOC, provides an overview of hydrologic conditions throughout the watershed. This study focused on identifying sedimentation sources and restoration opportunities.

According to the hydrologic survey, much of the fine sediment load in San Luis Obispo Creek is being delivered directly by eroding stream banks. Areas with poor riparian vegetation exist due to poor land management techniques, urban encroachment, and receding water tables. In some locations, channelization has also replaced vegetation and natural steam meanders resulting in increased water velocities and downstream bank erosion.

The San Luis Obispo Creek Watershed Hydrologic Survey concludes that stabilizing banks and restoring native vegetation are critical steps to establishing a more stable hydrologic system and enhancing riparian habitats. The report also identifies areas where riparian restoration is needed.

b. Degraded Fish Habitat.

The "San Luis Obispo Creek Steelhead Trout Habitat Inventory and Investigation, 1995", prepared by the LCSLOC, addresses habitat for cool-water trout fisheries. According to this inventory, a severe limitation in pool habitat is the greatest obstacle to rehabilitating historic fish populations. In addition, fish migration barriers, embedded spawning gravels, lack of canopy cover, shortage of instream cover, and insufficient bank vegetation are identified as significant problems. This report indicates where fish habitat improvements should be targeted.

c. Nutrient Loading.

"Nutrient Objectives and Best Management Practices for San Luis Obispo Creek", a study prepared by the Coastal Resources Institute, identified excessive nutrient loading as a significant problem within the watershed. This study identified point and non-point sources of nutrients, determined target values to eliminate excessive algal growth, and developed best management practices (BMP's) to enhance water quality.

d. Urban and Agricultural Run-off Pollution.

The San Luis Obispo Creek watershed is also subject to pollution from urban and agricultural run-off. Following rain storms, the City's drainage system delivers pollutants such as oil, grease, litter, and household chemicals into the Creek. Run-off from less populated and agricultural areas may carry other pollutants such as fertilizers, herbicides, and bacteria into waterways. Improved management practices can help reduce these contributions to water quality problems.

3. Identification of Restoration Alternatives

The watershed approach culminates with identification and implementation of restoration projects. Several projects have already been implemented by the LCSLOC as part of their ongoing watershed efforts. The proposed projects in section V describe additional ways to restore resources using a watershed approach.

B. CEQA / NEPA COMPLIANCE

After reviewing the proposed restoration projects, the State Trustee (CDFG) has determined that the restoration actions will not have a substantial, or potentially substantial, adverse change in any of the physical conditions within the areas affected by the projects. Additionally, the State Trustee considers these projects to be categorically exempt pursuant

to: (1) 14 Cal. Code of Regs. section l5304, “Minor alterations to land, water, or vegetation”; (2) 14 Cal. Code of Regs. section 15307, “Actions by regulatory agencies for protection of natural resources”, and (3) 14 Cal Code Regs. section 15308, “Actions by regulatory agencies for protection of the environment”.

The Federal Trustee (U.S. Fish and Wildlife Service) has determined that the proposed projects are categorically excluded from the National Environmental Policy Act (NEPA), 42 U.S.C. § 4321 et seq. according to the Department of the Interior’s Departmental Manual, 516 DM 6, Appendix 1, (62 FR 2375, 1/16/97) and 516 DM 2, Appendices 1 and 2. The projects are categorically excluded from NEPA since they are part of a natural resource damage assessment restoration plan prepared under the Oil Pollution Act where only minor or negligible change in the use of the affected areas is planned.

The habitat enhancement portions of the restoration plan are also categorically excluded from NEPA since they involve the construction of new, or the addition of, small structures or improvements for the restoration of wetland, riparian, instream, or native habitats, that result in no or only minor changes in the use of the affected local area. The Trustee Council expects a net environmental benefit as a result of the proposed projects.

C. CRITERIA USED TO EVALUATE RESTORATION PROJECT CONCEPTS

The Trustee Council used evaluation criteria listed below to consider and prioritize the proposed restoration alternatives. Some of the criteria, such as, Feasibility of the Alternative, represent thresholds that must be passed before any further consideration is given to the restoration alternative. The project concepts meeting or surpassing the threshold criteria were further evaluated and prioritized for funding and implementation. Only a subset of all the alternatives considered were approved for implementation. This is because not all proposals met the evaluation criteria.

The list below represents the principal areas of evaluation by the Trustee Council. The criteria are not ranked in order of priority, except that threshold criteria must be met before a project is reviewed using any of the remaining criteria. Additionally, performance criteria will be developed for each project prior to implementation.

1. **Threshold Criteria**

a. Technical feasibility of the alternative

The project must be technically sound. The Trustee Council will consider the level of uncertainty or risk involved in implementing the project. A proven track record demonstrating the success of projects utilizing a similar or identical restoration technique can be used to satisfy this evaluation criterion.

b. Consistency with the Trustee Council’s restoration goals

The proposed alternative must meet the Trustee Council's intent to restore, rehabilitate, replace, or acquire the equivalent of the injured natural resources or the services those resources provided. In addition, a project could provide compensation for the interim loss of those resources and services. However, the Trustee Council will not allocate funds for projects or other protection measures for public natural resources that are required mitigation under State or Federal law.

c. Compliance with laws

The proposed alternatives must comply with all applicable laws.

d. Public health and safety

The proposed alternative cannot pose a threat to the health and safety of the public.

2. **Additional Criteria**

e. Relationship to injured resources and services

Projects that restore, rehabilitate, replace, enhance or acquire the equivalent of the same resources and services injured by the spill are preferred to projects that benefit other comparable resources or services. The Trustee Council considered the types of resources or services injured by the spill and the connection or nexus of project benefits to those injured resources.

f. Avoidance of injury

The proposed alternative should avoid or minimize adverse impacts to the environment and the associated natural resources. These adverse impacts may have resulted from the original oil spill incident or may occur in the future as collateral injuries when implementing, or as a result of implementing, the project alternative. The Trustee Council considered the avoidance of future short-term and long-term injuries as well as mitigating past injuries when evaluating project concepts.

g. Likelihood of success

The Trustee Council considered the potential for success and the level of expected return of resources and resource services. The Trustee Council also considered the ability to monitor and evaluate the success of the project as well as correct any problems that arise during the

course of the proposed alternative. Additionally, the Trustee Council considered the ability to adjust the size of a project and the effects on likelihood of success.

h .Quality of benefits

The Trustee Council considered the quality of services to be provided by a proposed alternative. Projects that were expected to provide high quality service benefits were favored over those that were expected to provide lower quality benefits.

i. Multiple benefits

The Trustee Council considered the extent to which the proposed alternative benefits more than one natural resource or resource service.

j. Time to provide benefits

The Trustee Council considered the time until benefits will be provided to the resources, ecosystem, and/or the public.

k. Duration of benefits

The Trustees Council considered the expected duration of benefits from the proposed alternative. The Trustee Council also considered the method and ability to protect the implemented alternative and resulting benefits over time such as conservation easements, land acquisition, or other types of resource dedication.

l. Opportunities for collaboration

The Trustee Council considered the possibility of matching funds, in-kind services, or volunteer assistance. Coordination with other ongoing or proposed projects was also considered.

m. Benefits relative to costs

The Trustee Council considered the relationship of expected resource and service benefits from each alternative to the expected project costs, seeking the least costly (i.e., most cost efficient) means to deliver an equivalent quality and amount of benefits.

n. Total cost and accuracy of estimate

The Trustee Council evaluated the estimated total cost of each alternative and the probable validity of the estimate. The Trustee Council considered whether the total cost estimates included the cost to design, implement, monitor, and manage the alternative. The validity of the cost estimate was evaluated based on the completeness, accuracy, and reliability of methods used to estimate costs, as well as the track record of the person or entity submitting the cost estimate to accurately estimate costs.

V. PROPOSED PROJECTS

The Trustee Council considered project proposals throughout the San Luis Obispo Creek watershed. All approved projects must be consistent with the Trustee Council restoration goals as specified in the State Settlement Agreement and Federal Consent Decree. Fifty one (51) projects, including 29 described in the Draft Plan or added by the Trustee Council and 22 submitted to the Trustee Council during the public response to the Draft Plan, were carefully evaluated (Appendix A). These were reviewed using the criteria for evaluating restoration projects. From these 51 project proposals, the Trustee Council has developed a set of restoration projects that fall within the categories of restoration identified in the Avila Beach Oil Spill State Settlement Agreement and Federal Consent Decree. The Trustee Council also considered a no-action alternative.

A. NO ACTION ALTERNATIVE

Under the “No Action Alternative”, no actions would be taken to restore, rehabilitate, replace, or acquire the equivalent of intertidal resources, birds, fish, or public uses injured or lost as a result of the spill. This alternative provides no benefits to the public or the injured resources. In contrast, the other alternatives set forth below provide tangible benefits to intertidal resources, birds, fish, and the public.

B. PROJECT PROPOSALS NOT APPROVED FOR IMPLEMENTATION.

A total of 35 project proposals were not approved by the Trustee Council for implementation because they failed to meet the evaluation criteria, were inconsistent with the Trustee Council’s restoration goals as specified in the State Settlement Agreement and Federal Consent Decree, or were not ready for implementation (Appendix B). Others submitted by the public were not approved as separate projects but were incorporated into other projects approved by the Trustee Council for implementation.

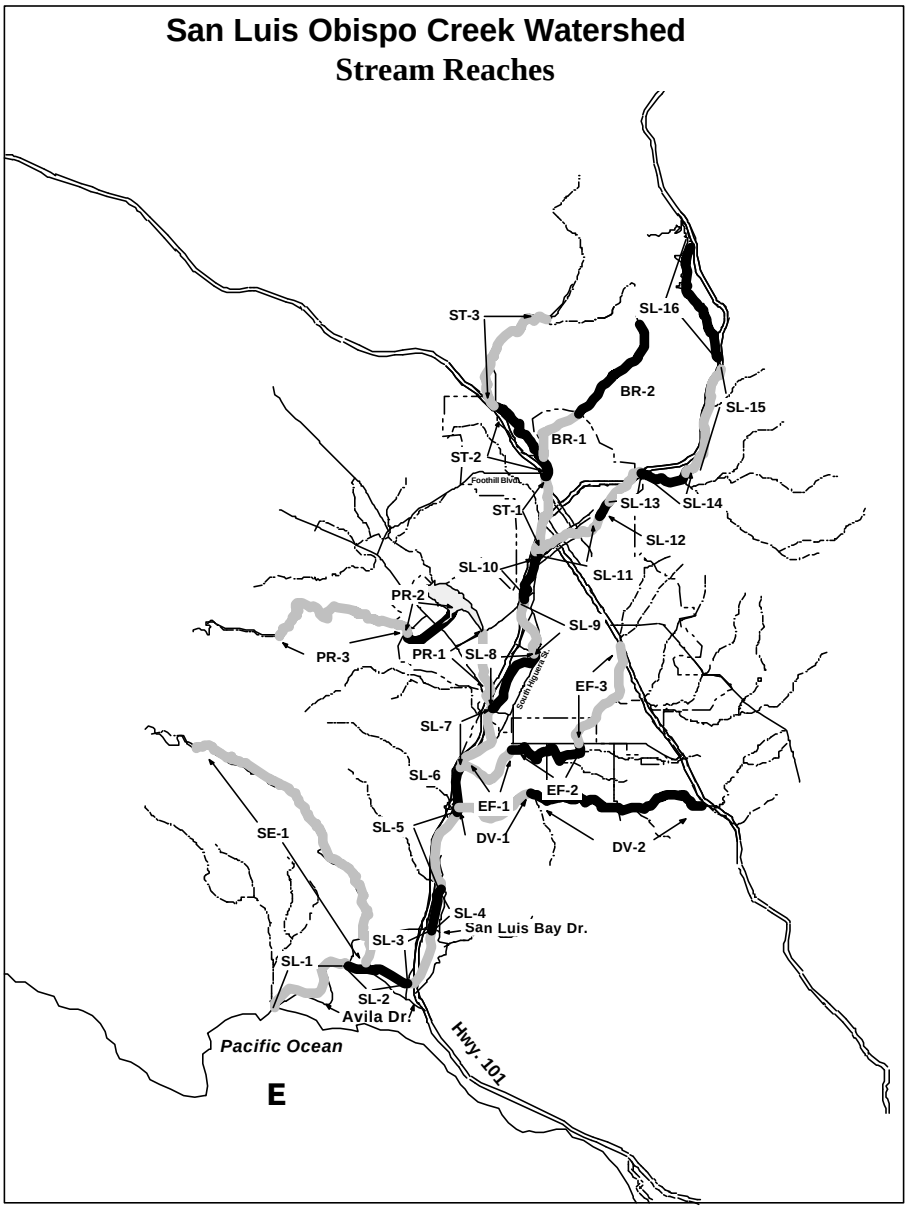
Three Estuarine Habitat Enhancement project proposals presented in the Draft Plan and two submitted during public response were considered but were not approved for funding. Ongoing contaminant cleanup in the vicinity of Avila Beach and in the estuary as a result of the Avila Beach Remediation Project, and uncertain levels of disturbance to the estuarine habitat resulting from these cleanup activities have led the Trustee Council to temporarily set aside the funds allocated for estuary habitat enhancement. There are other problems with these

projects. The existence of levies bordering the estuary and the morphology of the estuary and surrounding land require the Trustee Council to examine other alternatives to bank stabilization beyond those presented in the project concept proposals. Furthermore, the Trustee Council wants to coordinate all restoration projects within the estuary that may be funded by Unocal for impacts caused by the releases of oil and remediation at Avila Beach.

C. PROJECT PROPOSALS APPROVED FOR IMPLEMENTATION

The following projects are subdivided into two categories representing the types of work needed to compensate for the loss of resources that were injured in the 1992 oil spill at Avila Beach. These categories are Riparian Corridor Revegetation, and Fish Barrier Removal. Funding is allocated according to the budget in section VII. Projects were proposed in five streams within the San Luis Obispo Creek watershed: San Luis Obispo Creek, See Canyon Creek, East Fork San Luis Obispo Creek, Prefumo Creek, and Stenner Creek. The streams were classified by stream reach, based on their hydrological and habitat characteristics, and are shown in Figure 1.

Figure 1. Map of San Luis Obispo Creek Watershed Stream Reaches



The Trustee Council considered project proposals on both public and private lands. Most of the land in the watershed that is adjacent to creeks is privately owned. Therefore, most of the proposed projects lie on private property. Where Trustee Council funds are used on private property, agreements will be required of the landowners to ensure protection of the projects. In some cases these agreements are already in process. The Trustee Council does not intend to fund projects unless long term protection is provided in the form of conservation easements or similar agreements from willing landowners. Where long term protection is not provided, the funds will remain in the trust and used to fund a comparable project at a site where the landowner is willing to ensure protection of the project.

Assurances will also be sought from government agencies or utility companies for protection of projects undertaken on lands or easements owned by these organizations. Additionally, prior to implementing any riparian corridor revegetation projects, the Trustee Council will consult with local technical experts regarding revegetation priorities and selection of plant species. A listing of the proposed projects approved for implementation is given in Appendix C.

1. Riparian Corridor Revegetation

Riparian habitat is important to aquatic and terrestrial resources . A healthy complex of vegetation, including large canopy trees and understory vegetation, along with instream structure creates shade to keep water temperatures cool for fish and provides habitat where fish can rest, feed, and reproduce. These riparian habitats are also critical for numerous species of birds, mammals, and amphibians. Loss of these important habitats impacts all aquatic life, as well as other species who depend on these areas for food and cover. Additionally, there is the potential that revegetated and stabilized banks will filter run-off that may contain pollutants such as fertilizers, pesticides and herbicides. Such chemicals, if present, may impact fish and macroinvertebrates.

Throughout the San Luis Obispo Creek watershed, riparian habitat has been severely degraded by urban encroachment and poor land management practices. Within urbanized areas, buildings are erected adjacent to the creek banks leaving no space for an adequate vegetation buffer. The creek is also channelized in some locations, leaving the area devoid of useful habitat. In agricultural areas, cattle grazing and channel clearing have caused habitat degradation. Exotic species proliferation is a problem throughout the San Luis Obispo Creek watershed. These plants, primarily giant reed (*Arundo*), castor bean, and cape ivy, are out-competing native species. The result is diminishing riparian habitat.

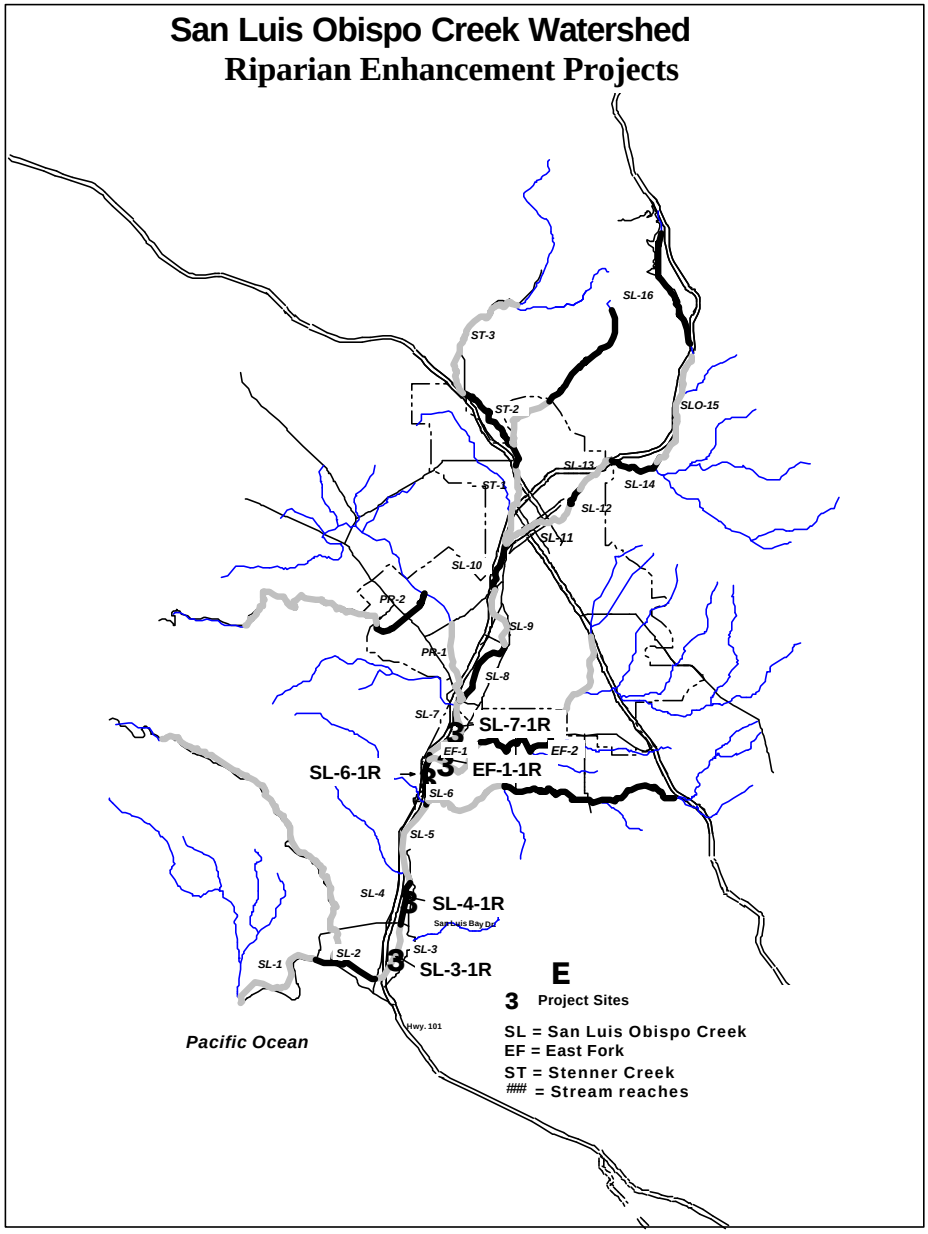
Degraded riparian habitat often leads to bank erosion and downstream sedimentation. Sedimentation, which refers to the accumulation of fine particulate matter on creek bottoms. This has several negative affects on fisheries resources and is one of the most critical problems facing fish in the San Luis Obispo Creek watershed. Anadromous fish species in this watershed, such as the Southern Steelhead Trout, rely on clean gravels for spawning. Eggs are laid in clean gravel nests called redds. Water flowing through the clean gravel assures an adequate oxygen supply to the maturing eggs. However, when eggs are covered with sediment they receive less oxygen and suffer high mortality rates. Sedimentation also contributes to a decrease in aquatic macroinvertabrate habitat. Aquatic insects live among clean gravels and rocks. When these substrates become embedded with sediment they no longer function as macroinvertabrate habitat. The decrease in habitat translates to a decrease in numbers of these organisms. This has a direct effect on fisheries because these insects are a major food source for fish.

Another result of sedimentation is filling of deep pool habitat. This habitat type is becoming increasingly scarce in the San Luis Obispo Creek watershed. Fish rely on deep pools for cool water, safe havens, and feeding.

The solutions to bank erosion include a variety of techniques from “hard” solutions that require rock or other structures to be placed on the bank, to “soft” solutions based on replanting with native vegetation to stabilize the bank. There are also techniques that make use of both hard and soft solutions. The appropriateness of each solution is based on a site specific evaluation of the local hydrology and channel morphology.

Figure 2 illustrates the locations of the approved Riparian Corridor Revegetation projects.

Figure 2. Map of approved Riparian Corridor Revegetation Project Sites Showing Stream Reaches and Project Number.



Site SL-3-1R

Figure 3. Photograph of Project Site SL-3-1R.

Problems: Bank failure at this site is the result of past vegetation removal that has left an insufficient vegetation buffer. While some willow is colonizing the site, the single layer of vegetation is insufficient to withstand high winter flows. Much of the erosion is caused by return flow of water during frequent floods. Secondary deficiencies on this site include the absence of overhead canopy and lack of a vegetative filter strip to catch sediment from overland run-off. This site would benefit from additional vegetation to help cool water temperatures and act as an enhanced vegetative filter strip.

Project Description: The focus of this project is to stabilize the banks with vegetation including willow material. A riparian buffer strip of at least 25 feet on each bank would protect the site from the frequent flooding and filter run-off from the agriculture operation.

The project will consist of reshaping and revegetation of approximately 100 feet of the north bank and vegetation enhancement over an additional 300 feet of bank. A vegetated corridor of 25 feet on each bank will be established. The total restoration area will measure approximately ¼ acre. Willow material will be used to stabilize the reshaped bank by post planting or through a bio-engineered approach. Exotic species of vegetation will be removed as part of the project and will be monitored during the monitoring period.

Expected Project Benefits: The project will enhance fisheries habitat by providing shade to cool water temperatures, a source of woody debris for in-stream cover, and reducing sediment contribution from actively eroding stream banks and returning floodwaters.

Estimated Project Cost: $13,000

Site SL-4-1R

Figure 4. Photograph of Project Site SL-4-1R.

Problems: Sections of this reach have been artificially straightened and protected with concrete riprap that has lead to channel incision, bank erosion, and degradation of riparian vegetation. These factors contribute to sedimentation of fish habitats. Frequent flooding also contributes sediment as the water returns to the creek. Much of

this site is in stable condition however and enhancing the vegetation diversity while repairing the damaged areas would be a positive step toward establishing a long reach of high quality fish and wildlife habitat.

Project Description: Restoration activities center on establishment of a continuous vegetated corridor planted with large canopy tree species. This would provide shade to cool the water and add stability to the creek banks. Trees will also be a source of woody debris that would enhance instream fish habitat.

Several sections through this project site are lacking native riparian vegetation and contribute to bank erosion and collapse. The gaps in vegetation are overgrown with exotic weeds that prevent re-establishment of a healthy riparian corridor. The goal of this project is to enhance current gaps in the riparian corridor by removing exotic species and planting native plants in a riparian buffer strip. The enhanced vegetation buffer will also help filter sediment from returning flood waters. Approximately 1,100 feet of stream bank will be enhanced on the project site.

Expected Project Benefits: This area floods regularly during high flows, delivering topsoil to the creek. Dense understory vegetation and ground cover would serve to trap sediment as floodwaters recede back into the channel reducing sedimentation. Establishment of canopy cover would keep water temperatures cool and provide a source of woody debris for instream cover. Bank stabilization in eroded areas would decrease downstream sedimentation.

Estimated Project Cost: $37,500

Site SL-6-1R

Figure 5. Photograph of Project Site SL-6-1R.

Problems: This site exhibits several problems that are common in the San Luis Obispo Creek watershed. Riparian vegetation on this site is highly degraded, leaving banks vulnerable to erosion. Fine sediment from eroding banks settles downstream and contributes to degradation of fish spawning gravels. Degraded riparian vegetation also decreases the in-stream cover that provides fish with safe havens and velocity breaks. In addition, exposed oil pipelines divert water into banks and pose a potential for oil spills. The “San Luis Obispo Creek Steelhead Trout Inventory and Investigation: 1995”(Land Conservancy, 1995) identified this reach of the Creek as having the poorest in-stream shelter rating on the main stem of San Luis Obispo Creek.

Secondary problems include the lack of overhead canopy. These factors contribute to elevated water temperatures and poor fisheries habitat. Summertime temperatures at this site have been measured in the 70°F range (Coastal Resources Institute, 1994). High water temperatures affect local trout fisheries because steelhead have difficulty extracting oxygen from water at temperatures above 70°F.

Project Description: This reach of San Luis Obispo Creek will be revegetated with native riparian species. Banks will be stabilized with willow material and may include a vegetation based structural element. Work will focus on the south bank and consist of a continuous corridor approximately 40 feet wide. Total restoration area is approximately 1.6 acres. Some bank re-sloping may be necessary that will require permits from applicable agencies. Prior to implementation, this site will require closer hydrologic inspection to determine the preferred methods for stabilizing eroded banks.

Habitat such as deep pools and instream cover are lacking at this site. Due to the flow velocity along this reach, even during low flow periods, there is an opportunity to establish pools and instream cover through the installation of fish habitat devices such as boulders.

Exposed oil pipelines at this site represent a significant threat to the riparian corridor as they are occasionally active and are subject to washout during high water flows. Exposed pipelines should be re-buried or otherwise removed from the active channel as part of this project. The current pipeline owner (Tosco) has expressed interest in a cooperative project on this site. The LCSLOC is working with Tosco to solve the problem. Tosco would be responsible for costs related to the pipe re-burial or removal and repair of the immediate construction area. Trustee Council funds would be expended for areas immediately upstream and downstream of the pipeline location. The Trustee Council will not spend restoration funds to reposition oil pipelines as part of the proposed project.

Expected Project Benefits: The shade created by the new trees would, in concert with projects upstream, assist in lowering local water temperatures and provide a source of woody debris to enhance instream fish habitat. The riparian buffer would protect adjacent lands from flood scour and trap sediment from floodwaters returning to the Creek. Bank vegetation would increase the extent of instream cover and terrestrial riparian habitat. The introduction of fish habitat structures will improve fish habitat. In addition, removal of the oil pipelines from the active channel would reduce erosion and protect the Creek from a potential spill.

Estimated Project Cost: $119,000

Site SL-7-1R

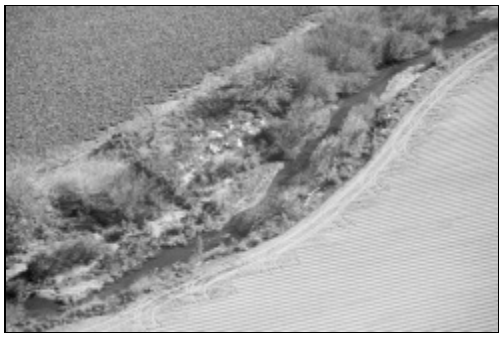


Figure 6. Photograph of Project Site SL-7-1R.

Problems: Problems associated with this site include degraded riparian vegetation, bank failure, erosion and subsequent sedimentation, and elevated water temperatures.

This site lies immediately downstream from the City of San Luis Obispo and receives high velocity flows during storm events. Degraded riparian vegetation makes the banks and adjacent farmland vulnerable to erosion and flood scour. Soil eroded from the farm field reenters the creek just downstream and contributes to sedimentation. Resulting sedimentation degrades fisheries habitat by covering channel bed gravels used by anadromous fish for spawning.

Elevated water temperature is another problem on this site. Throughout the watershed, areas with degraded riparian vegetation leave the stream vulnerable to solar heating. The temperature remains elevated through the project site due to the lack of overhead canopy and shade. High water temperatures increase mortality rates of fish eggs and make it difficult for adult fish to extract dissolved oxygen from the water.

Project Description: This project will stabilize the outer bend of the Creek, possibly with the installation of a vegetation based stabilizing structure. This would decrease erosion and the amount of sediment entering the creek. The project will also include the addition of canopy cover trees and a riparian buffer strip composed of low growing understory species. The trees will shade the water and contribute to cooler water temperatures and the buffer strip will reduce the velocity of floodwaters and reduce soil erosion.

Some additional hydrologic analysis would be necessary to determine the bank stabilization methods. Where stabilization structures are used, creation of additional deep pool habitat through the use of structures such as logs and boulders that cause scouring of the channel bottom will be investigated. This reach of San Luis Obispo Creek is deficient in this type of habitat. Planning of fish habitat devices will be preceded by an investigation of water quality to determine the value of additional pool habitat at this location.

Expected Project Benefits: This site receives a great deal of water during storm events, and is likely to continue to flood during larger storms due to limited channel capacity. However, establishment of a riparian buffer of large trees and understory species will serve to decrease the velocity of flood waters running over the tilled agricultural land. This will result in more sediment deposition on the field and less sedimentation of the creek. The large canopy trees will provide additional bank stability and shade to cool the water. Some grading of the bank will probably be necessary, requiring some loss of farmland

productivity. This project is also immediately upstream of an ongoing restoration project that encompasses ½ mile of riparian revegetation. This project will enhance the downstream work forming an extended reach (1 mile) of restored riparian vegetation.

Estimated Project Cost: $53,000

Site EF-1-1R

Figure 7. Photograph of project site EF-1-1R.

Problems: Problems on this site include degraded riparian vegetation and alteration of the natural creek channel. The result is an extremely unstable bank and stream channel that regularly causes severe erosion and sedimentation of San Luis Obispo Creek.

Project Description: The project plan is to correct the alignment of the channel and stabilize the banks with native vegetation.

Expected Project Benefits: Project benefits will include a significant reduction in erosion and subsequent sedimentation. The improved riparian corridor will also increase terrestrial riparian habitat and contribute to enhanced water quality.

Estimated Project Cost: $ 67,000

Exotic Plant Species Removal and Stream Habitat Maintenance Plan

Problems: One of the most serious riparian corridor problems encountered in the San Luis Obispo Creek watershed is the invasion of non-native (exotic) plants. Invasion of exotic plant species reduces the establishment of native riparian vegetation, which provides shade and maintains lower water temperatures for fish and other aquatic animals. Exotic plant species are found throughout the watershed and represent a significant amount of habitat in need of restoration. Another problem includes the accumulation of debris in the stream bed that degrades the stream habitat for fish and other aquatic life and increases the likelihood of flooding.

The March, 1997 Draft Plan identified project concepts that focused on exotic plant removal and other stream habitat maintenance projects. A number of public comments also supported similar projects (Appendix D). However, exotic plant removal and stream habitat maintenance projects require a systematic watershed-wide approach to be effective in the long term. This is because upstream plants will continue to provide seeds and other

regenerating materials to downstream areas if an overall approach to eradication is not pursued.

Project Description: This project will develop a watershed-wide exotic plant species removal and stream habitat maintenance plan for the San Luis Obispo Creek watershed. It will identify exotic species locations for selected species, removal strategies and methods, and approaches to habitat improvement, as well as provide guidelines for future exotic species removal and stream habitat maintenance projects.

Expected Project Benefits: This plan will facilitate implementation of exotic plant species removal and stream habit maintenance projects that were previously not considered for restoration actions because they were temporary fixes to chronic problems. Emphasis will be on long-term solutions and not one-time improvements.

Estimated Project Cost: $25,000

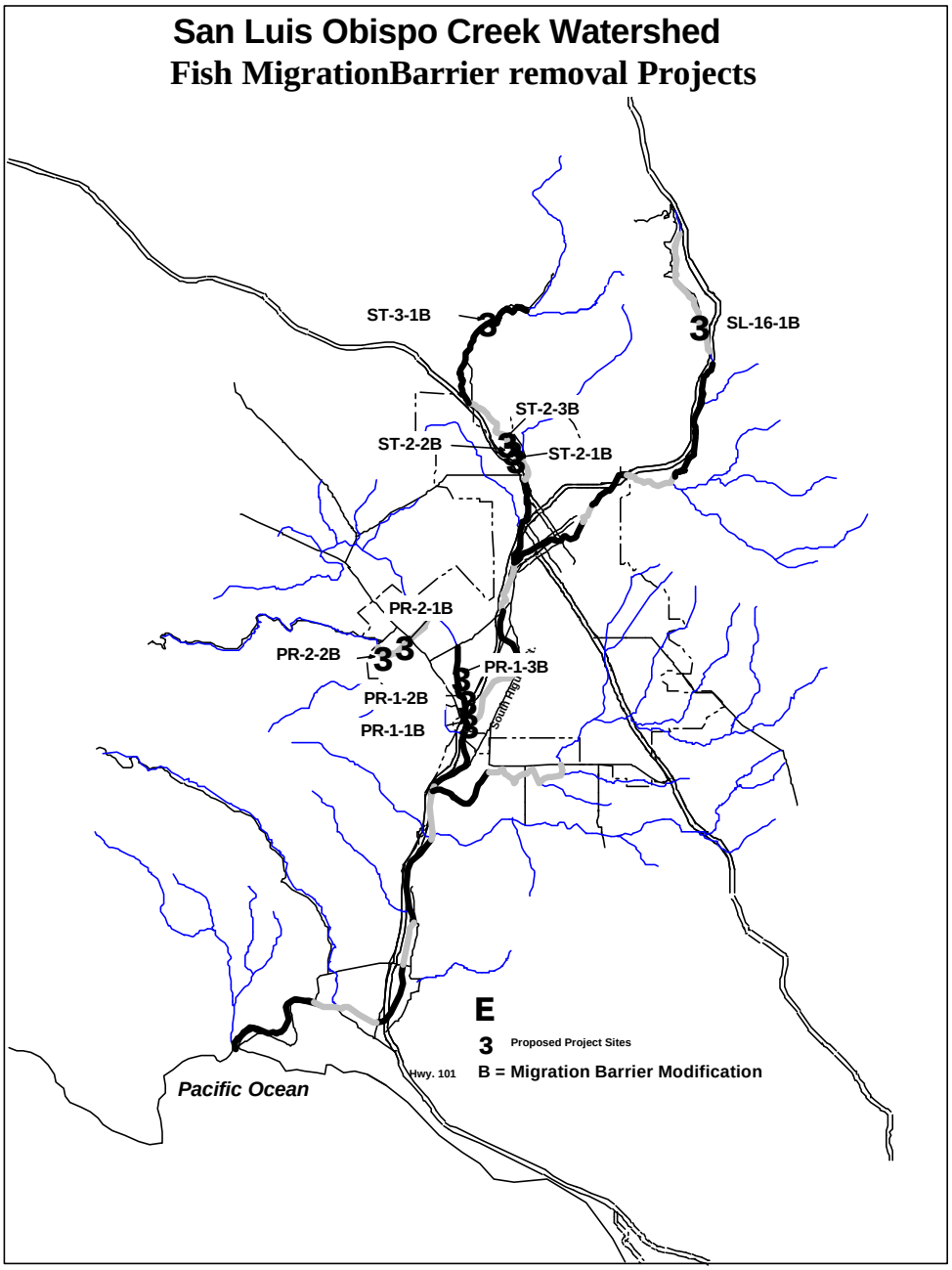
2. Fish Barrier Removal

Barriers to fish passage exist throughout the San Luis Obispo Creek watershed. These impediments include elevation, velocity, and depth barriers. Elevation barriers are those that have high drops or cascades that inhibit fish migration upstream and downstream. Velocity barriers are structures that cause water to move faster than fish can negotiate, thus preventing upstream passage. Depth barriers occur when water “sheets” and becomes too shallow for fish passage. Removing fish barriers benefits fisheries by providing access to areas already characterized as having high quality spawning and rearing habitat.

Each barrier selected for removal has been examined by fisheries experts, including a Hydraulic Engineer, and a Fish Habitat Assistant, both from the California Department of Fish and Game. Decisions on funding were primarily based on benefits relative to costs. Some projects, although possible on an engineering basis, did not justify the expenditure because they were not seen as barriers to significant numbers of migrating fish. In one case, barrier removal was required under another mitigation settlement and was dropped from funding from this restoration plan. Top priority was given to barriers that inhibit migration of adult and juvenile steelhead trout to and from extended areas of high quality habitat. Finally, consideration was given to the level of landowner cooperation, whether the project may qualify for completion using other fund sources, and site accessibility.

Ten barriers approved for funding are shown on Figure 8.

Figure 8. Map of Fish Migration Barrier Removal Project Sites.



A sequential approach has been adopted in addressing the identified fish barriers. The sequential location of each barrier along a common stream was considered since an individual stream is only as good as the least passable barrier. Also, care will be taken in the final design and construction of the projects to guard against collateral bank erosion or damage to adjacent properties.

Site SL-16-1B, San Luis Obispo Creek at Stagecoach Road

Figure 9. Photograph of San Luis Obispo Creek, Fish Barrier SL-16-1B.

Problem: This is a large concrete culvert that has a drop of approximately 2 feet at the downstream end, creating a velocity barrier at high flows and a sheeting depth barrier at low flow.

Project Description: A series of rock weirs will be constructed in the downstream channel to an elevation that will backwater the culvert.

Expected Project Benefits: Improvement of this velocity barrier will allow migrating adult fish to reach spawning areas in the upper watershed and will provide access to juvenile steelhead rearing habitat. During low-flows this improvement would increase juvenile rearing habitat.

Estimated Project Cost: $16,500

Site PR-1-1B, Prefumo Creek at Highway 101

Figure 10. Photograph of Prefumo Creek, Fish Barrier PR-1-1B.

Problem: This culvert has a drop of approximately 3 to 4 feet at its outlet and poses an elevation barrier during high flows and a shallow water depth barrier during low flows. In addition, low flows travel under the riprap apron. This barrier inhibits fish access from San Luis Obispo Creek to the entire Prefumo Creek drainage, that contains valuable trout habitat.

Project Description*:* A 4-step rock weir fishway will be constructed to step the water level to the bottom of the culvert. A concrete sill across the end of the culvert apron will also be installed.

Expected Project Benefits: This project is the lowest barrier in the Prefumo Creek drainage and modification will improve access to the entire drainage, which contains several miles of moderate to high quality trout habitat. Several other barriers in this system are also approved for funding.

Estimated Project Cost: $74,500

Site PR-1-2B, Prefumo Creek at Calle Joaquin

Figure 11. Photograph of Prefumo Creek, Fish Barrier PR-1-2B.

Problem: This barrier is a concrete box culvert that has a low flow channel constructed on the bottom through the use of concrete curbs. The culvert has a drop of approximately 3 to 4 feet at its outlet and poses an elevation barrier during high flows and a shallow water depth barrier during low flows.

Project Description: Fish passage improvement gained from the curbs appears to be marginal. Project plans are to construct a 3-step rock weir fishway to raise water to the level of the culvert floor. Adding baffles to the culvert floor could increase the efficiency of passage through the culvert, but would also impact its hydraulic capacity.

Expected Project Benefits: Removal of this migration barrier, along with the Highway 101 barrier, will improve fish access to the entire Prefumo Creek drainage.

Estimated Project Cost: $18,000

PR-1-3B, Prefumo Creek Agricultural and Sewer Line Crossing

Figure 12. Photograph of Prefumo Creek, Fish Barrier PR-1-3B.

Problem: A 5-foot high grouted rock dam constructed to protect a sewer line poses an elevation barrier to fish passage. Fifty feet downstream is an armored section of the stream bed used as an agricultural equipment crossing.

Project Description: A 5-step rock weir fishway along with minor modifications of the dam to concentrate flow will be constructed. Maintaining the agricultural equipment crossing may also be included by installing a hard surface crossing 1-foot thick by 12-feet wide in the lowest weir.

Expected Project Benefits: Following removal of the downstream barriers, removal of this barrier would facilitate movement of fish from San Luis Obispo Creek up to Laguna Lake and above Los Osos Valley.

Estimated Project Cost: $55,000

Site PR-2-1B, Prefumo Creek Golf Course Dams

Figure 13. Photograph of Prefumo Creek, Fish Barrier PR-2-1B

Problem: Two small check dams create a change in grade of approximately 3-feet each. These structures impede the upstream passage of adult salmonids under low flow conditions and juveniles under all flow conditions.

Project Description: These barriers will be made passable at low flows by cutting notches, 12 to 18 inches deep and 4 to 6 feet wide in the centers to concentrate low flows. The remainder of the structures can be left in place to prevent upstream downcutting and other possible hydrologic impacts. A single rock weir below each weir will further improve passage for smaller fish.

Expected Project Benefits: Altering of these barriers would facilitate migration to upper sections of the drainage where high quality rearing and spawning habitat exists.

Estimated Project Cost: $6,000

Site PR-2-2B, Prefumo Creek Riprap Barrier

Figure14. Photograph of Prefumo Creek, Fish Barrier PR-2-2B.

Problem: This is a grouted riprap dam approximately 5-feet in height and 40-feet wide. This structure is a migration barrier for adult and juvenile salmonids under all flow conditions and is the uppermost obstacle preventing fish migration to an extended range of upstream habitat.

Project Description: A 5-step rock weir fishway along with minor modifications of the dam to concentrate flow will provide for fish passage.

Expected Project Benefits: When the above projects are complete, removal of this last fish passage will allow migrating trout access to the extended habitat areas in the upper Prefumo Creek drainage.

Estimated Project Cost: $32,000

Site ST-2-1B, Stenner Creek at Mustang Village Crossing

Figure 15. Photograph of Stenner Creek, Fish Barrier ST-2-1B.

Problem: This is a concrete flash board dam that has been abandoned and is no longer used for stream diversions. The structure channels the stream flow through a 4-feet wide notch that creates a drop of approximately 3-feet under low flow conditions, preventing free upstream passage for adult and juvenile fish.

Project Description: The spillway section of the dam between the two abutment wing walls will be removed down to its foundation or to bedrock.

Expected Project Benefits: The removal of the spillway section of the dam will allow a natural stream gradient to be restored and allow full unimpaired passage for adult and juvenile fish.

Estimated Project Costs: $5,500

Site ST-2-2B, Stenner Creek Concrete Apron

Figure 16. Photograph of Stenner Creek, Fish Barrier ST-2-2B

Problem: This is a concrete low-flow vehicle crossing that has a drop of approximately 2-feet at the downstream end. This is a barrier to juvenile fish passage at low flows when the smooth concrete barrier causes water to sheet and become too shallow for fish passage. It may also be a velocity barrier at high flows to migrating adult fish.

Project Description: Passage will be improved by constructing a series of rock weirs in the downstream channel to an elevation that will back water up over the concrete crossing.

Expected Project Benefits: Deepening the flow of water over the apron will provide access for both juvenile and adult fish.

Estimated Project Costs: $5,500

Site ST-2-3B, Stenner Creek Agricultural Dam at Cal Poly

Figure 17. Photograph of Stenner Creek, Fish Barrier ST-2-3B.

Problem: This is a concrete flash board dam that is no longer used for stream diversion. The barrier has a partial opening broken out, but continues to prevent free upstream passage for adult and juvenile salmonids during low flows due to an abrupt elevation change.

Project Description: The dam will be modified by removing the center concrete weir and leaving the abutments and spillway plunge pool in place.

Expected Project Benefits: Improvement of this low flow barrier will increase juvenile stealhead access to quality rearing habitat and will improve passage of adult fish.

Estimated Project Cost: $27,100

Site ST-3-1B, Stenner Creek at Cheda Pond Diversion Fish Barrier

Figure 18. Photograph of Stenner Creek, Fish Barrier ST-3-1B

Problem: This is a small concrete diversion dam that provides water to Cal Poly. Three boulder weirs were previously added to the channel below the dam to provide fish passage, but one more weir is needed to complete the job.

Project Description: An additional boulder weir will be added at the base of the incline.

Estimated Project Benefits: Fish passage improvement at this site will remove the last significant fish passage barrier on Stenner Creek and will open high quality salmonid spawning and rearing habit in the upper watershed.

Estimated Project Cost: $3,500

D. PROJECT MONITORING

Detailed work plans will be developed for each of the projects approved by the Trustee Council for implementation. Each work plan will include costs, implementation schedule, and evaluation criteria. Each project will include a monitoring component for the purposes of documenting restoration effectiveness. Completed projects will be evaluated using performance criteria that will be established for each project. Each monitoring component will assess structural, functional, and temporal factors related to the restoration project. Specific factors that will be outlined in all monitoring plans include the duration and frequency of monitoring, methods of data collection, the level of sampling that will be necessary to detect project success, and prescribed corrective actions to be implemented if project success is not being attained. Evaluation criteria selected for each project will reflect the goals of the project. A project monitoring component has been included in each project proposed by the LCSLOC, and additional money for monitoring is available, if needed, from the interest earned in the Trust Fund. Additionally, $200,000 was allocated in the State Settlement Agreement and Federal Court Consent Decree for planning, project oversight, and monitoring by Agency personnel.

1. Structural Monitoring

Structural monitoring will be undertaken to assess site and project maintenance issues. These procedures will determine if plants and structures introduced during project implementation are meeting performance criteria for success and if corrective actions are necessary. The structural monitoring schedule will reflect the importance of having a properly installed project in order to attain functional success and will be specific to the restoration features. Total structural monitoring duration will be three to five years.

2. Functional Monitoring

The functional monitoring component will assess the degree to which the project meets restoration goals. The functional monitoring schedule will consist of annual evaluation, as restoration projects typically take several years to produce measurable functional results.

VI. MANAGEMENT AND OVERSIGHT

This plan is managed by the Avila Beach Trustee Council, made up of representatives from the California Department of Fish and Game's Office of Spill Prevention and Response (OSPR) unit and representatives from the United States Fish and Wildlife Service. The Trustee Council is responsible for approving all projects, awarding construction bids, and paying invoices under this plan. The Trustee Council will also oversee the activities of the local project manager.

The Trustee Council has selected the Land Conservancy of San Luis Obispo County as the local project manager for implementation of the final approved plan. The Land Conservancy was chosen based on their extensive experience with restoration project implementation, their role in community organization and public outreach, and their role in coordinating watershed based programs.

The Conservancy will be responsible for coordinating public input on selected projects, prepare project bidding documents, provide design review, coordinate implementation of restoration projects with contractors, and ensure adequate monitoring of the projects once installed.

Land Conservancy Qualifications:

The Land Conservancy of San Luis Obispo County is a private, 501 (c)(3), non-profit organization with a mission to protect open space lands and lands containing sensitive resources. These goals are achieved by acquiring conservation easements and fee title to land, developing grass roots support for conservation efforts, and by working cooperatively with government agencies. The Conservancy manages grants from public and private sources for environmental restoration projects and performs consulting services relating to open space planning, Geographic Information Systems (GIS), mitigation planning and monitoring, and habitat conservation planning. Contract and grant clients have included the Regional Water Quality Control Board, California Coastal Conservancy, the City and County of San Luis Obispo, Caltrans, U.S. Fish and Wildlife Service (Partners in Wildlife Program), and the California Department of Fish & Game. Listed below are sample projects and programs, publications, and staff qualifications for the Land Conservancy.

Projects and programs:

- Coordination of the San Luis Obispo Creek Watershed Task Force.
- Implementation of a watershed enhancement program under contract with the Regional Water Quality Control Board (319 (h) grant).
- Implementation of numerous restoration projects in riparian, oak woodland, and dune habitats throughout San Luis Obispo County.

- Coordination of a volunteer based water quality monitoring program for the San Luis Obispo Creek watershed.
- Co-sponsor of "San Luis Obispo Creek Day", an annual educational fair and creek clean-up event.
- Stenciling of storm drains with a "No Dumping" message within San Luis Obispo.
- Development of televised public service announcements with watershed enhancement messages.
- Landowner surveys and contact for the City of San Luis Obispo Greenbelt Program.

Publications:

- San Luis Obispo Creek Restoration Plan, 1988
- San Luis Obispo Creek Watershed Hydrologic Survey, 1995
- San Luis Obispo Creek Steelhead Trout Habitat Inventory & Investigation, 1995
- Black Lake Canyon Enhancement Plan, 1992
- Black Lake Canyon Soil Erosion and Sedimentation Plan, 1995
- Saving Special Places: A Study of Resource Values in the San Luis Obispo Greenbelt Area, 1994
- Rural Development Pattern Strategy Reports phases 1 through 4
- Baywood / Los Osos Conservation Plan, 1998

Staff:

Raymond K. Belknap, Executive Director

M. A. Landscape Architecture - Harvard University, Cambridge, MA.
Duties: Organizational management, project management, conservation easements, open space planning, budgets, and landowner relations.

Brian B. Stark, Deputy Director

B. S. Social Sciences, 1989 - California Polytechnic State University, San Luis Obispo.
M.A. Geography, 1993 - California State University, Chico.
Duties: Project management and oversight, watershed planning, GIS applications, and coordination of the San Luis Obispo Creek Watershed Task Force.

Mark K. Skinner, Stewardship Director

B.S. Landscape Architecture, 1984 - California Polytechnic State University, San Luis Obispo.
Duties: On-site project implementation / management.

Susan Bernstein, Biologist

B. S. Biology, 1995 - California Polytechnic State University, San Luis Obispo.
M.S. Biology, 1998 - California Polytechnic State University, San Luis Obispo.
Duties: Biological surveys and reporting.

Christopher J. Rose, Hydrology
B. A. Humanities, 1982 - University of Wisconsin
M.S. Agriculture / Hydrology / Watershed management - California Polytechnic State University, San Luis Obispo.
Engineering course work, 1993-1994 - University of Oregon
Duties: Review of project designs, site surveys, and engineering calculations.

VII. PROJECT IMPLEMENTATION SCHEDULE AND BUDGETS

A. IMPLEMENTATION SCHEDULE

Implementation of restoration projects will begin over a period of approximately three years and be followed by a monitoring period of at least three to five years. Projects not requiring permits will be implemented immediately, while projects requiring additional hydrologic analysis, engineering work, and agency permits will be implemented as the preliminary work is completed. An implementation schedule and specific performance criteria will be developed for each of the projects approved by the Trustee Council.

B. BUDGET

The State Settlement Agreement and Federal Consent Decree required Unocal to deposit $950,000 into an interest bearing trust account with the National Fish and Wildlife Foundation to be managed by the CDFG. The State Settlement Agreement and Federal Consent Decree further allocated $425,000 for Riparian Corridor Revegetation, $250,000 for Fish Barrier Removal, and $275,000 for Estuarine Habitat Improvement. However, the $275,000 for Estuarine Habitat Improvement has been temporarily set aside. This is primarily due to the ongoing contaminant cleanup in the vicinity of Avila Beach and the estuary as a result of the Avila Beach Restoration Project and the probable disturbance to the estuarine habitat as a result of these cleanup activities. Additionally, the Trustee Council wants to coordinate all restoration projects within the estuary that may be funded by settlement dollars obtained from Unocal for impacts caused by the releases of oil and remediation at Avila Beach. There were other problems associated with the project concepts proposed for the estuary that are described in Appendix B1.

The Trustee Council has identified six projects for riparian corridor revegetation that total $314,500; ten projects for fish barrier removal that total $243,600; and no projects for estuarine habitat restoration. The Trustee Council has temporarily set aside $275,000 for other projects that may be identified in the future that meet the Trustee Council's restoration goals as specified in the State Settlement Agreement and Federal Consent Decree and that

meet the criteria used to evaluate restoration project concepts. The remaining $116,900 is allocated to a project maintenance and repair fund. The Trustee Council has the option of modifying the budget to assure the successful completion of the restoration.

Table 3. Project Budget Allocations

BUDGET ITEM	GENERAL ALLOCATON
Riparian Corridor Revegetation	$314,500
Fish Barrier Removal	$243,600
Project Maintenance and Repair	$116,900
Estuarine Habitat Restoration (reserve)	$275,000
Total	**$950,000**

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APPENDIX A-1

Summary of all 29 restoration projects proposed by the Trustee Council including the 27 projects proposed in the Draft Restoration Plan for the 1992 Unocal pipeline oil spill at Avila Beach. Projects are identified by project type and are listed by stream reach, from the lower watershed to the upper watershed. Descriptions of the problems requiring restoration actions along with brief descriptions of the project plans are given.

Appendix A1

RESTORATION PROJECT CONCEPTS PROPOSED FOR THE 1992 UNOCAL PIPELINE OIL SPILL AT AVILA BEACH

Project	Project Type	Description of Problem
Golf Course Narrows (SL-1-2E)	Estuarine Habitat Enhancement	Problems include high bank erosion rates due to high water velocities during flood events and the lack of riparian trees or understory. Project concepts include installation of riprap, grading of slopes for revegetation, and installation of plastic sheet piles. The Draft Plan recognizes the need to examine alternative solutions to these problems and believes that Requests for Proposal need to be developed for planning and engineering, that would only be released if and when a construction bond is secured from the landowner.
Marshall Site (SL-I-3E)		
Big Bend (SL-1-1E)		
Marre Dam (SL-1-1B)	Fish Barrier Removal	The dam's purpose is to check upstream saltwater intrusion; however, the dam blocks fish passage during low flows. Project concept options include establishing upstream boulder checkdams and pools, moving the footing of the structures upstream, improving the functionality of the existing fish ladder, and adding a notch in the dam.
Lower DeVincenzo (SL-2-1R)	Riparian Corridor Revegetation	This section of the creek has been historically cleared with an emphasis on habitat protection. However, this area has not been cleared for several years, and erosion caused by channel obstruction is increasing. Project concepts include maintenance of appropriate instream woody debris, trimming of tree and willow branches that capture debris, tying of willow branches across the creek to create canopy, tying and staking willow branches to bank, and moving mid-channel willows back against the banks where they can contribute to bank stability. Since

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RESTORATION PROJECT CONCEPTS PROPOSED FOR THE 1992 UNOCAL PIPELINE OIL SPILL AT AVILA BEACH

Project	Project Type	Description of Problem
Lower DeVincenzo (SL-2-1R) Cont.	Riparian Corridor Revegetation	this is a somewhat experimental approach, results would be monitored to evaluate the effectiveness of these methods.
Kruse (SL-3-1R)		Problems include bank failure due to past vegetation removal and to water diversion resulting from vegetated mid-channel gravel bars. A secondary problem is the absence of an overhead canopy. The project concept is to stabilize the banks with larger trees and willow material and to remove willows from within the channel.
Upper DeVincenzo (SL-4-1R)		Sections of this reach have been artificially straightened and protected with riprap, that has lead to channel incision, bank erosion, and degradation of riparian vegetation. Project concept calls for a one-acre corridor planted with large canopy trees and minimal grading.
Bunnel/Rothman (SL-5-1R)	Riparian Corridor Revegetation	This section of the creek is experiencing willow encroachment that aggravates localized flooding and erosion and contributed to the collapse of the Highway 101 bridge during the 1955 floods. Project concept may involve moving mid-channel willows against the banks where they can contribute to bank stability.
Filliponi/Maino (SL-6-1R)		Problems include degraded riparian vegetation, eroded banks, and high water temperatures from wastewater effluent. Project concept calls for bank revegetation on the inside of bend of the stream. Some structural work and gradient control structures as well as the development of habitat structures are considered.
Upper Hayashi	Riparian Corridor	Problems include degraded riparian vegetation, bank failure, erosion and

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RESTORATION PROJECT CONCEPTS PROPOSED FOR THE 1992 UNOCAL PIPELINE OIL SPILL AT AVILA BEACH

Project	Project Type	Description of Problem
(SL-7-1R)	Revegetation	subsequent sedimentation, and elevated water temperatures. The project concept is to stabilize the outer bend of the creek, possibly with the installation of a stabilizing structure. Some grading of the bank would probably be necessary.
Stagecoach Rd. at Highway 101 (SL-16-1B)	Fish Barrier Removal	This large concrete culvert causes a velocity barrier at high flows and a shallow water barrier to fish at low flows. The project concept is to place boulders below the culvert and add baffles inside the culvert.
Stagecoach Rd. Culvert (SL-16-2B)		This large concrete culvert has a drop of approximately two-feet at the downstream end and poses a velocity barrier to fish at high flows and a shallow water barrier at low flows. The project concept is to construct a series of rock weirs in the downstream channel to an elevation that will backwater the culvert and allow fish passage while not impeding water flow during high water events.
See Canyon Dam (SE-1)		This is a concrete and flash board dam that creates a drop of approximately ten-feet. The stream is narrow and the banks are steep at this location. This structure poses a migration barrier for adult and juvenile fish under most flow conditions. The project concept is to construct a two-stage steep-pass fishway with a turning pool.
Cuesta Grade Culvert (SL-16)		This is a large corrugated steel culvert that potentially could cause a velocity barrier to fish at high flows. The project concept is to construct a series of rock weirs downstream of the culvert to an elevation that will backwater the culvert.

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RESTORATION PROJECT CONCEPTS PROPOSED FOR THE 1992 UNOCAL PIPELINE OIL SPILL AT AVILA BEACH

Project	Project Type	Description of Problem
Vachel Lane. To Buckley Road. (EF-2)	Riparian Corridor Revegetation	No specific problem was identified for this site, however, there is a potential for riparian corridor enhancement. This section has mature riparian vegetation surrounded by tilled agriculture land on one side and grazing land on the other. Although fenced, cattle are allowed access periodically. The project concept is to test manual clearing methods designed to enhance the riparian corridor while addressing flooding damage and bank stability.
East Fork Riparian Enhancement (EF-1-1R)		The riparian corridor of the East Fork tributary between the confluence with San Luis Obispo Creek and the proposed Filipponi Wetland project (see below) has very poor riparian vegetation. Past grading has confined the channel in an artificial levy that regularly fails, causing erosion and sedimentation in San Luis Obispo Creek. Project Plans call for repairing the channel coarse and stabilizing the banks with native vegetation.
Filipponi Wetland (EF-1)	Wetland Enhancement	This site is a former wetland that is now mostly devoid of riparian vegetation because the stream has been moved from its original channel. The project concept calls for the establishment of a wetland by acquiring the land or the rights to land management, possibly through a mitigation bank.
Prefumo Creek at Highway 101 (PR-1-1B)	Fish Barrier Removal	This structure is a concrete box culvert with a drop of three to four-feet at its outlet that poses an elevation barrier to fish during high flows and a shallow water barrier during low flows. The project concept is to construct a rock weir fishway downstream of the culvert to step the channel grade to the floor elevation of the culvert.
Prefumo at Calle	Fish Barrier Removal	This structure is a concrete box culvert with a low flow channel constructed on the

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RESTORATION PROJECT CONCEPTS PROPOSED FOR THE 1992 UNOCAL PIPELINE OIL SPILL AT AVILA BEACH

Project	Project Type	Description of Problem
Joaquin (PR-1-2B)		bottom through the use of concrete curbs. This culvert has a drop of approximately two to three-feet at its outlet and poses an elevation barrier during high flows and a shallow water barrier during low flows. The fish passage improvement gained from the curbs appears to be minimal. The project concept is to construct a rock weir fishway downstream of the culvert to step the channel grade to the floor elevation of the culvert.
Sewer Line Crossing (PR-1-3B)		This five-foot high grouted rock dam constructed to protect a sewer line poses an elevation barrier to fish passage. The project concept is to construct a series of rock weirs along with minor modifications to the rock dam to provide for fish passage. Maintaining the agricultural equipment crossing downstream of the dam would need to be considered in the design of the rock weir structure.
Golf Course Dams (PR-2-1B)		This is a pair of small concrete check dams that create a change in grade of approximately three-feet each. These structures impede the upstream passage of adult salmonids under low flow conditions and juveniles under all flow conditions. The project concept is to cut or chip a low flow notch into the center of the dam sill. A single rock weir below the check dams would further improve passage for smaller fish.
Riprap Barrier (PR-2-2B)		This is a grouted riprap dam approximately five-feet in height and forty-feet wide. This structure poses a migration barrier for adult and juvenile salmonids under all flow conditions. The project concept is to construct a series of rock weirs down stream of the dam along with minor modifications to the crest of the rock dam.
Mustang / Stenner Glen Crossing	Fish Barrier Removal	This is a concrete and flash board dam that is no longer used for stream diversions and it prevents free upstream passage during low flows. This structure channels the

Appendix A1

RESTORATION PROJECT CONCEPTS PROPOSED FOR THE 1992 UNOCAL PIPELINE OIL SPILL AT AVILA BEACH

Project	Project Type	Description of Problem
(ST-2-1B)		stream flow through a notch in the dam that is about four-feet wide and creates a drop of approximately three-feet under low flow conditions. The project concept is to remove the spillway section of the dam between the two abutment wing walls.
Concrete Apron-Cal Poly (ST-2-2B)		This concrete low-water crossing has a drop of approximately two-feet at the downstream end and is a barrier to juvenile fish at low flows. The Project concept is to construct a series of rock weirs in the downstream channel to an elevation that will begin to backwater the concrete crossing.
Agricultural Dam (ST-2-3B)		This concrete and flash board dam is hindering fish passage and is no longer used for stream diversions. The project concept is to remove the center concrete weir and leave the abutments and spillway plunge pool in place.
Cheda (ST-3-1B)		This concrete diversion structure poses a velocity barrier during high flows and a shallow water barrier during low flows. Three boulder weirs previously added to the channel below the dam to provide fish passage have not eliminated the barrier. The project concept is to add one more weir at the upper end of the series of boulder weirs already existing in the stream channel.
Concrete Apron (ST-2)		A concrete apron across the creekbed connecting abutments was identified as a potential barrier to juvenile fish passage at low flows, and may be a velocity barrier to adults during high flows. The project concept is to cut a channel in the concrete apron under the bridge.
Reservoir Canyon Cascade (RS-1)	Fish Barrier Removal	This high cascade in Reservoir Canyon Creek presents an elevation barrier to migrating fish. The project concept is to construct boulder step pools possibly in combination with a fish ladder.

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RESTORATION PROJECT CONCEPTS PROPOSED FOR THE 1992 UNOCAL PIPELINE OIL SPILL AT AVILA BEACH

Project	Project Type	Description of Problem
Watershed Plan for Exotic Plant Species Removal and Stream Habitat Maintenance (All reaches)	Riparian Corridor Revegetation	Exotic plant species proliferation throughout the watershed is leading to diminished high quality riparian habitat. The project concept is to establish and implement a watershed-wide exotic plant species removal and stream habitat maintenance plan.

APPENDIX A-2

Summary of all eleven restoration projects proposed by the San Luis Obispo County Board of Supervisors for the 1992 Unocal pipeline oil spill at Avila Beach. Projects are identified by project type and descriptions of the problems requiring restoration actions along with brief descriptions of the project concepts are given.

Appendix A2

RESTORATION PROJECTS PROPOSED FOR THE 1992 UNOCAL PIPELINE OIL SPILL AT AVILA BEACH

Project	Project Type	Description of Problem
Avila Beach Sewer Improvements	Water Quality Protection	No specific problem is identified. The proposal is to provide funding to better treat sewage effluent in Avila Beach. The only project proposed is to extend the outfall pipe and install a diffuser.
Port San Luis Bilge Pump Station		The discharge of oily bilge water into marine waters is harmful to marine organisms. The project concept calls for the design and construction of a small craft bilge pump-out station at Port Luis to properly dispose of oily bilge water.
Central Coast Salmon Enhancement Inc.	Resource Management	The project proponents state that offshore energy development activities often preclude fishermen from fishing in certain areas, including the Santa Maria Basin. The project concept is to provide funding to Central Coast Salmon Enhancement Inc. to enhance the salmon fishery off the coast.
Nipomo-Guadalupe Dunes Enhancement		The development of offshore oil could have a direct impact on the Nipomo/Guadalupe Dunes. The project concept is to provide funding to protect the dunes through a variety of research, management, and outreach programs.
Monterey Pines Forest Management		The Monterey pine forests have been challenged by development, habitat loss, and disease. The project concept is to combine existing county mitigation funds for erosion control in the forest with a coordinated forest management effort.
Piedras Blancas Elephant Seal	Public Services	There is the potential for tourists to harass elephant seals and to sustain personal injury. The project concept is to provide training for volunteer

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RESTORATION PROJECTS PROPOSED FOR THE 1992 UNOCAL PIPELINE OIL SPILL AT AVILA BEACH

Project	Project Type	Description of Problem
Docent Training Program		docents so that tourists that view elephant seals will be educated and protected.
Oceano Community Center		The project proponents state that public services and recreational opportunities are impacted by offshore energy activities. The project concept is to construct a community center to help in offsetting some of these impacts in southern San Luis Obispo County.
Coastal Access Improvements		No specific problem was identified. The project concept is to increase public access to coastal resources.
Coastal Plan Data Collection	Planning	Offshore oil and gas development activities in the Santa Maria Basin directly impact the county's coastline. The project concept is to provide the County with funds to begin updating the Local Coastal Plan in the South County and San Luis Bay Areas.
Outer Continental Shelf Monitoring and Public Information Program		No specific problem was identified. The project concept is to provide funding to assess the impacts of offshore energy related activities including reviewing and commenting on Federal lease sales, oil and gas seismic and exploration proposals, and participation in meetings and other offshore energy related activities and studies.
Conservation		The County Supervisors claims that their ability to manage coastal resources *is* affected by offshore energy development. The Conservation

Appendix A2

RESTORATION PROJECTS PROPOSED FOR THE 1992 UNOCAL PIPELINE OIL SPILL AT AVILA BEACH

Project	Project Type	Description of Problem
Element Update		Element of the County's General Plan provides for the conservation, development and management of natural resources including: water, forests, soils, rivers and other waters, harbors fisheries, wildlife, minerals, and other resources. The existing element was adopted in 1974 and needs to be updated. The project concept is to provide funding to update the plan.

APPENDIX A-3

Summary of all seven restoration projects proposed by the Avila Valley Advisory Council (AVAC) for the 1992 Unocal pipeline oil spill at Avila Beach. Project proposals are identified by project type and descriptions of the problems requiring restoration actions along with brief descriptions of the project concepts are given.

Appendix A3

RESTORATION PROJECTS PROPOSED FOR THE 1992 UNOCAL PIPELINE OIL SPILL AT AVILA BEACH

Project	Project Type	Description of Problem
Outfall Extension and Diffuser	Water Quality Protection	No specific problem was identified. The existing outfall terminates in an area utilized by a substantial number of bathers. The project concept is to extend the outfall line and include a new diffuser system to lower the concentration of secondary treated effluent at the point of terminus.
Outfall Line Hydraulic Improvements		Although the outfall line has adequate capacity to meet ultimate plant capacity, several portions of the pipe near the treatment plant have hydraulic limitations that have the potential to cause effluent to be retained for long periods of time at low sewage flows. The project concept is to make hydraulic improvements at these locations that will allow higher flows to better clear out the water retained in the pipe, thus improving effluent quality to protect offshore resources.
Waste Water Disposal and Collection Improvements		There is a need to improve the Avila Beach Community Services District's (District) wastewater collection system against the intrusion of oil and other contaminants during periods of high rainfall coupled with a high tide. One project concept is to provide linings in those facilities that are most susceptible to this type of infiltration. Other project concepts include an emergency bypass connection so that during the frequent power outages in Avila, an emergency pumping connection can be made to the District's pump station to pump raw sewage to a safe point of discharge. With a dedicated pumping connection in place, one person could perform this operation rather than the three people now required, and no time would be lost in laying a temporary discharge line as currently required.

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RESTORATION PROJECTS PROPOSED FOR THE 1992 UNOCAL PIPELINE OIL SPILL AT AVILA BEACH

Project	Project Type	Description of Problem
Emergency Electrical Connection	Water Quality Protection	There are many occasions when power outages cause sewage to back-up into the District's main lift station. This situation is corrected by emergency pumping to the next downstream manhole. The project concept is to provide electrical lines and conduit from the District's emergency generator station at the treatment plant to the lift station.
Pump Replacement & Well Rehabilitation		The District's wastewater wet well and collection system is about twenty years old and portions are technologically outdated, though functionally adequate. Pump parts are difficult to obtain and the control and maintenance systems are dated and require more power consumption than does modern equipment. The project concept is to upgrade the existing system. By making these improvements, the overall reliability of the District's operation of the treatment plant will increase, thereby reducing the probability of a raw sewage spill affecting San Luis Obispo Creek and the marine environment.
Tertiary Level Waste Water Treatment		The project concept is to upgrade the District's sewage treatment process to tertiary treatment in order to meet the State Health Department's Title 22 requirement for unrestricted contact. With tertiary treatment, reclaimed water could be discharged to San Luis Creek during dry years and to partially offset the City of San Luis Obispo's planned diversion of treated wastewater from the creek, and would provide better protection against seawater intrusion.

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RESTORATION PROJECTS PROPOSED FOR THE 1992 UNOCAL PIPELINE OIL SPILL AT AVILA BEACH

Project	Project Type	Description of Problem
Technical Support & Equipment	Emergency Response	The Avila Beach Fire Department is the only emergency response agency in Avila Beach trained to handle emergencies such as the 1992 Unocal pipeline oil spill, and their emergency response equipment needs to be upgraded.. The project concept is to purchase emergency response equipment for the Avila Beach Fire Department to better respond to such emergencies..

APPENDIX A-4

Summary of four *new* restoration projects proposed by the public during the public comment period for the 1992 Unocal pipeline oil spill at Avila Beach. Projects are identified by project type and descriptions of the problems requiring restoration actions along with brief descriptions of the project concepts are given.

Appendix A4

RESTORATION PROJECT CONCEPTS PROPOSED FOR THE 1992 UNOCAL PIPELINE OIL SPILL AT AVILA BEACH

Project	Project Type	Description of Problem
Shellfish and Sea Otter Restoration	Resource Management	Shellfish populations in the area, especially abalone, are seriously reduced. The project concepts are to restore abalone and other shellfish populations and habitat around Avila Beach and to enhance the sea otter population This is to be accomplished by planting abalone, building artificial reefs, and augmenting kelp forests. It was also proposed to investigate the enhancement of sea otter reproduction as well as building enclosures to protect sea otters.
San Luis Cr. Mouth	Estuarine Habitat Enhancement	The mouth of San Luis Obispo Creek undergoes periodic flooding and bank erosion. The project concept is to stabilize the mouth of the creek by re-channelization.
Marre Dam Monitoring	Water Quality Protection	No specific problem was identified. The project concept is to remotely monitor the flow at Marre Dam to aid in managing wastewater discharges into San Luis Obispo Creek.
Seasonal Reservoirs		Low water flows, particularly during the summer, are a problem to stealhead throughout the watershed. The project concept is to construct seasonal reservoirs to trap winter run-off for use during the dry season to maintain water levels high enough for fish.

APPENDIX B-1

Summary of the 13 restoration projects proposed by the Trustee Council for the 1992 Unocal pipeline oil spill at Avila Beach that do not meet restoration evaluation criteria for implementation along with rationale for rejection. Projects are identified by project type and are listed by stream reach, from the lower watershed to the upper watershed.

Appendix B1

PROJECT PROPOSALS NOT MEETING RESTORATION CRITERIA FOR IMPLEMENTATION

Project	Project Type	Cost	Comments
Golf Course Narrows (SL-1)	Estuarine Habitat Enhancement	NA	These three project concepts have been combined because of their proximity and similarity to each other. Because of ongoing contaminant cleanup in the vicinity of Avila Beach and the estuary as a result of the Avila Beach Restoration Project and the probable disturbance to the estuarine habitat as a result of these cleanup activities, the Trustee Council has set aside funds for work in the estuary. Additionally the Trustee Council wants to coordinate all restoration projects within the estuary that may be funded by settlement dollars obtained from Unocal for impacts caused by the releases of oil and remediation at Avila Beach. Furthermore, the existence of levies bordering the estuary and the morphology of the estuary and surrounding land require the Trustee Council to examine alternatives to bank stabilization other than those presented in the project concept proposals. The Draft Plan recognized the need to examine additional alternatives to these problems for the Big Bend and Golf Course Narrows sites and recommended that a Request for Proposal be developed for planning and engineering that would only be released if and when a construction bond is secured from the landowner.
Marshall Site (SL-1)			
Big Bend (SL-1)			
Marre Dam (SL-1)	Fish Barrier Removal	NA	The City of San Luis Obispo is proposing work at this site as mitigation for their wastewater reclamation program. If done by the city, no Avila restoration funds should be spent.

Appendix B1

PROJECT PROPOSALS NOT MEETING RESTORATION CRITERIA FOR IMPLEMENTATION

Project	Project Type	Cost	Comments
Lower Devincenzo (SL-4)	Riparian Corridor Revegetation	NA	These are stream habitat maintenance projects. The Trustee Council believes that settlement money should not be spent on such projects until there is a watershed-wide plan for exotic plant species removal and stream habitat maintenance.
Bunnel/Rothman (SL-5)			
Stagecoach Rd. @ 101 (SL-16)	Fish Barrier Removal	NA	CalTrans has committed to this project as mitigation for the Cuesta Grade Project, and there is no need to expend Avila restoration funds.
Cuesta Grade Culvert SLO Cr. (SL-16)		NA	Recent inspection of the culvert by the Department of Fish and Game reveals that the problems with this culvert are relatively minor, and that sediment accumulation has resolved the problem.
See Canyon Dam (SE-1)		$100,000	The steep slope of the channel and the height make this an unlikely site for a rock fishway. The estimated cost of $100,000, the limited area for construction, and the limited benefits to be realized, do not justify funding.
Concrete Apron	Fish Barrier		Closer examination of the concrete barrier reveals that fish can pass through

Appendix B1

PROJECT PROPOSALS NOT MEETING RESTORATION CRITERIA FOR IMPLEMENTATION

Project	Project Type	Cost	Comments
Stenner Creek (ST-2)	Removal	NA	this section under most conditions and that the will not appreciably enhance fish passage.
Reservoir Canyon. Cascade Stenner Creek (RS-1)		$300,000	The project would be costly and complex. The barrier effects a small portion of the spawning habitat, and the cost to benefit does not justify the expenditure.
Vachel Ln. to Buckley Rd. E. Fork SLO (EF-2)	Riparian Corridor Revegetation	NA	The project concept was to test manual clearing methods designed to enhance the riparian corridor while addressing flooding damage and bank stability. The Trustee Council believes that settlement money should not be spent on stream habitat maintenance projects until there is a watershed-wide plan for exotic plant species removal and stream habitat maintenance.
Filiponi Wetland (EF-1)		NA	The project concept was to establish a wetland by acquiring the rights to the land, possibly through a mitigation bank. The scale of this proposal is beyond the scope of work that could be accomplished under this restoration settlement, and the basic requirements for establishing a mitigation bank have not been met.

APPENDIX B-2

Summary of eleven restoration project proposals submitted by the San Luis Obispo County Board of Supervisors for the 1992 Unocal pipeline oil spill at Avila Beach, totaling $1,505,000, that do not meet restoration evaluation criteria for implementation, with rationale for rejection. Projects are identified by project type along with estimated project costs.

Appendix B2

PROJECT PROPOSALS NOT MEETING RESTORATION EVALUATION FOR IMPLEMENTATION

Project	Project Type	Cost	Comments
Avila Beach Sewer Improvements	Water Quality Protection	$175,000	These project concepts do not fall within the categories of projects identified in the State Settlement Agreement and Federal Consent Decree and the for the Avila Beach 1992 Oil Spill. Furthermore, where permitted waste discharges cause harm to fish and wildlife resources the waste discharger is required by State and Federal laws to correct the problem.
Port San Luis Bilge Pump Station		$75,000	
Salmon Enhancement Inc.	Resource Management	$100,000	This is an on-going project that does not fall within the category of projects identified in the State Settlement Agreement and Federal Consent Decree for the Avila Beach 1992 Oil Spill.
Nipomo-Guadalupe Dunes Enhancement		$500,000	There is no nexus to the Avila Beach 1992 oil spill or to the resources impacted by the spill. These project concepts do not fall within the categories of projects identified in the State Settlement Agreement and Federal Consent Decree for the Avila Beach 1992 Oil Spill.
Monterey Pines Forest Management		$125,000	
Piedras Blancas	Public	$100,000	There is no nexus to the Avila Beach 1992 oil spill or to the resources

Appendix B2

PROJECT PROPOSALS NOT MEETING RESTORATION EVALUATION FOR IMPLEMENTATION

Project	Project Type	Cost	Comments
Elephant Seal Docent Training Program	Services		impacted by the spill. These project concepts do not fall within the categories of projects identified in the State Settlement Agreement and Federal Consent Decree for the Avila Beach 1992 Oil Spill.
Oceano Community Center		$200,000	
Coastal Access Improvements		$50,000	Restoration funding from the settlement to compensate lost human uses was directly allotted to the Harbor District and separated from funds currently proposed for improving ecological services of natural resources.
Coastal Plan Data Collection	Planning	$40,000	There is no clear nexus to the Avila Beach 1992 oil spill or to the resources impacted by the spill. These project concepts do not fall within the categories of projects identified in the State Settlement Agreement and Federal Consent Decree for the Avila Beach 1992 Oil Spill.
Outer Continental Shelf Monitoring and Public Information Program		$100,000	
Conservation Element Update		$40,000	

APPENDIX B-3

Summary of seven restoration project proposals submitted by the Avila Valley Advisory Council for the 1992 Unocal pipeline oil spill at Avila Beach, totaling $2,074,000, that do not meet restoration evaluation criteria for implementation, with rationale for rejection. Project proposals are identified by project type along with estimated project costs.

Appendix B3

Summary of Project Proposals Not Meeting Restoration Evaluation Criteria for Implementation

Project	Project Type	Cost	Comments
Outfall Extension and Diffuser	Water Quality Protection	$100,000	This project concept does not fall within the categories of projects identified in the State Settlement Agreement and Federal Consent Decree for the Avila Beach 1992 Oil Spill. Furthermore, where permitted waste discharges cause harm to fish and wildlife resources, the waste discharger is required by State and Federal laws to correct the problems.
Outfall Line Hydraulic Improvements		$150,000	These appear to be estuarine habitat improvement projects. Because of ongoing contaminant cleanup in the vicinity of Avila Beach and the estuary as a result of other pipelines spills by Unocal, the Trustee Council has set aside funds for work in the estuary. Additionally the Trustee Council wants to coordinate all restoration projects within the estuary that may be funded by settlement dollars obtained from Unocal for impacts caused by the releases of oil and remediation at Avila Beach. Furthermore, where permitted waste discharges cause harm to fish and wildlife resources, the waste discharger is required by State and Federal laws to correct the problem.
Waste Water Disposal and Collection Improvements		$100,000	
Emergency Electrical Connection		$75,000	

Appendix B3

Summary of Project Proposals Not Meeting Restoration Evaluation Criteria for Implementation

Project	Project Type	Cost	Comments
Pump Replacement & Well Rehabilitation		$75,000	
Tertiary Level Waste Water Treatment	Water Quality Protection	$1,500,000	In addition to the preceding comments, expected benefits to fish and wildlife are low relative to cost. Additionally, the total cost of this project concept is prohibitive.
Technical Support & Equipment	Emergency Response	$74,500	This project concept provides no measurable benefits to fish and wildlife. Additionally, this project concept does not fall within the categories of projects identified in the Federal consent Decree and the State Agreement for the Avila Beach 1992 Oil Spill.

APPENDIX B-4

Summary of four restoration project proposals received from the public during the public comment period without cost estimates that do not meet restoration evaluation criteria for implementation, with rationale for rejection. Project proposals are identified by project type.

Appendix B4

Summary of Project Proposals Not Meeting Restoration Evaluation Criteria for Implementation

Project	Project Type	Cost	Comments
Shellfish and Sea Otter Restoration	Resource Management	NA	At the time of settlement, the Trustee Agencies were not aware of technically feasible intertidal and nearshore restoration projects with a high expected benefit to cost relationship. Instead, the Trustee Agencies decided to evaluate off-site projects along the San Luis Obispo Creek that would restore or benefit the same types of resources injured in the Avila Beach spill. Additionally, the Trustee Agencies did not detect specific injuries to abalone or other shellfish as a result of the 1992 oil spill. Furthermore, restoration of sea otters is addressed in a separate "Sea Otter Restoration Plan". The Trustee Council remains open to other near shore restoration project concepts that meet the evaluation criteria.
San Luis Obispo Creek Mouth	Estuarine Habitat Enhancement	NA	There is no evidence that re-channelizing the mouth of the Creek would benefit estuarine habitat or fish and wildlife resources.
Marre Dam Monitoring	Water Quality Protection	NA	There is no evidence that monitoring water quality at Marre Dam will aid in managing wastewater discharges into San Luis Obispo Creek to benefit water quality.
Seasonal Reservoirs		NA	The time and anticipated cost for planning and construction of these reservoirs is beyond the scope of this restoration project.

APPENDIX C

Summary of the sixteen restoration projects proposed in the Draft Restoration Plan or added by the Trustee Council for the 1992 Unocal pipeline oil spill at Avila Beach that meet restoration evaluation criteria for implementation. Projects fall into two categories: Riparian Corridor Revegetation and Fish Barrier Removal. Project summaries are included along with estimated project costs, accumulated costs, and budget amount remaining by category.

Appendix C

(version 12/15/98)

PROJECT PROPOSALS MEETING RESTORATION EVALUATION CRITERIA FOR IMPLEMENATION

Project	Project Type	Cost	Running Total	Project Description
SL-3-1R	Riparian Corridor Revegetation	$13,000	$13,000	The project will stabilize the banks with willow material and increase the width of the riparian corridor through tree and shrub plantings, thereby reducing sediment deposition and improving water quality in the stream. Bank stabilization may require bank re-sloping.
SL-4-1R		$37,500	$50,500	Project calls for one acre of revegetation with large canopy trees. Planting will fill in gaps in riparian vegetation and enhance the width of the vegetated corridor in several spots vulnerable to erosion. The project will also involve exotic weed removal and maintenance to assure project success.
SL-6-1R		$ 119,000	$169,500	Project calls for bank revegetation along a section of the south bank measuring approximately 1,750 feet**.** Some bank resloping will likely be necessary. This project will also involve coordination with Tosco regarding the reburial of exposed oil pipelines. Funds through this program will be for activities upstream and downstream of the pipe burial project. This project may also involve the installation of instream fish habitat structures.

Appendix C

(version 12/15/98)

PROJECT PROPOSALS MEETING RESTORATION EVALUATION CRITERIA FOR IMPLEMENATION

Project	Project Type	Cost	Running Total	Project Description
SL-7-1R	Riparian Corridor Revegetation	$53,000	$222,500	Project will stabilize the outer bend of the creek, possibly with the installation of a vegetation based structure. The project will also consist of revegetation along an extended area of the north bank measuring approximately 1,100 feet. Total revegetation area is 1 acre.
EF-1-1R		$67,000	$289,500	The project is for the riparian restoration along the East Fork tributary immediately upstream of the San Luis Obispo Creek confluence. The project will include bank stabilization through vegetation based structures and planting of canopy trees along both banks. Total restoration area will be 1 acre. Some channel relocation may be necessary to repair historic damage to the riparian corridor.
Exotic Plant Species Removal and Stream Habitat Maintenance Plan		$25,000	$314,500	The project will result in a watershed-wide plan for exotic plant species removal and stream habitat maintenance. It will identify exotic species locations, removal strategies and methods, approaches to habitat improvement, and provide guidelines for future exotic species removal and stream habitat maintenance projects.

Amount Budgeted for Riparian Corridor revegetation: $425,000
Amount Remaining: $110,500

Appendix C

(version 12/15/98)

PROJECT PROPOSALS MEETING RESTORATION EVALUATION CRITERIA FOR IMPLEMENATION

Fish Barrier Projects

Project	Project Type	Cost	Running Total	Project Description
SL-16-1B	Fish Barrier Modification	$16,500	$16,500	The project plans are to construct rock weir fishways downstream of the culverts in the downstream channel to an elevation that will backwater the culverts to allow fish passage while not impeding water flow during high water events.
PR-1-1B		$74,500	$91,000	
PR-1-2B		$18,000	$109,000	
PR-1-3B		$55,000	$164,000	The project will construct a series of rock weirs along with minor modifications to the rock dam to provide for fish passage. Maintaining the agricultural equipment crossing would need to be considered in the design of the rock weir structure.
PR-2-1B		$6,000	$170,000	The project plan is to cut or chip a low flow notch into the center of the dam sill. A single rock weir below the check dams would further improve passage for smaller fish.
	Fish Barrier			

Appendix C
(version 12/15/98)

PROJECT PROPOSALS MEETING RESTORATION EVALUATION CRITERIA FOR IMPLEMENATION

Project	Project Type	Cost	Running Total	Project Description
PR-2-2B	Modification	$32,000	$202,000	The project plan is to construct a series of rock weirs down stream of the dam along with minor modifications to the crest of the rock dam. Opening this last major barrier on Prefumo Creek will open access for adult and juvenile to high quality spawning, holding, and nursery habitat.
ST-2-1B		$5,500	$207,500	The project concept is to remove the spillway section of the dam between the two abutment wing walls. This is the first barrier to fish passage on Stenner Creek. Removal of this barrier, along with the three following barriers, are essential for providing fish passage to high quality upstream habitat.
ST-2-2B		$5,500	$213,000	The Project concept is to construct a series of rock weirs in the downstream channel to an elevation that will begin to backwater the concrete crossing, thus eliminating the shallow water fish barrier.
ST-2-3B		$27,100	$240,100	The project concept is to remove the center concrete weir and leave the abutments and spillway plunge pool in place.
ST-3-1B		$3,500	$243,600	The project concept is to add one more weir to the three boulder weirs previously placed.

Amount Budgeted for Fish Barrier Removal: $250,000
Amount Remaining: $6,400

APPENDIX D

APPENDIX D

Final Plan for Restoration Actions
within the San Luis Obispo Creek Watershed
Unocal Oil Spill, Avila Beach 1992

Response to Public Comments

A. General Comments Regarding Composition and Responsibilities of the Trustee Council

1. Issues Presented by the Public

a. The Trustee Council is not "local" as it is only composed of nonresidents of Avila Beach.
b. The Trustee Council does not have the interest of the local Avila Beach citizen in mind, but the agencies the Trustee Council represents.

2. Suggestions Offered by the Public

a. There should be someone on the Trustee Council that represents the citizens of Avila Beach.
b. The Avila Valley Advisory Council represents the people of Avila Beach and can provide recommendations for an Avila Beach Representative to the Trustee Council.

3. The Trustee Council Response

a. The Trustee Council is comprised of Trustee Agencies having a trusteeship over the natural resources impacted by the Avila Beach oil spill of 1992. The basis for the council membership is not residency, rather, it is based on jurisdiction over the impacted natural resources and statutory responsibilities. The Trustee Agencies have been designated pursuant to the Oil Pollution Act (OPA), which specifies the functions of the Trustees to assess natural resource damages following an oil spill to natural resources under their trusteeship, and to develop and implement a plan for restoration, rehabilitation, replacement, or acquisition of the equivalent of the natural resources under their trusteeship. The California Department of

Fish and Game (CDFG) is the trustee for fish, wildlife, and their habitats and the U.S. Fish and Wildlife Service has trustee responsibilities for federally listed species, anadromous fish, migratory birds, and sea otters. The primary interest of the Trustee Council is restoration of the injured resources over which we have trustee responsibility. The settlement monies are not being used to fund other non related activities of the Trustee Agencies, nor can they be used to fund non-related local projects.

b. The Trustee Council will be establishing technical advisory groups to assist that Trustee Council in implementation and review of the final Restoration Plan. The Trustee Council will accept nominations for individuals that are knowledgeable about the local resources and conditions, and experienced in natural resource restoration.

B. General Comments on the Draft Plan

1. Issues Presented by the Public

a. The Draft Plan does not address the personal and economic impacts on people caused by the Unocal Oil Spill.
b. $200,000 allocated to be spent on administration seems excessive. How were the $200,000 in management funds arranged and how are they being applied?
c. More money should be spent on improving local services.

2. Suggestions Offered by the Public

a. Personal and economic impacts should be considered by the Trustees.
b. $200,000 allocated to be spent on administration would be better spent on mitigation and ground projects in Avila Beach. When projects are completed there should be little or no maintenance.
c. Improve the Avila Beach Community Services District's emergency response system and equipment.
d. Include a copy of the Consent Decree and the Settlement Agreement in the Draft Plan.
e. The San Luis Obispo County Board of Supervisors proposed a total of $1,505,000 in projects designed to improve local waste water treatment and other public services. The Avila Valley Advisory Council (AVAC) proposed a total of $2,074,000 in projects designed to improve local waste water treatment and other public services.

3. The Trustee Council Response

a. Compensation for personal and economic impacts is outside the scope of the Draft Plan or the Trustees' responsibility. The law provides for third party claims directly against the responsible party (Unocal) by those suffering personal and economic losses from the spill.
b. Monies allocated to the Trustee Agencies to develop the final restoration plan, and to oversee implementation of restoration were approved by the Court for such purposes. The monies will cover additional costs and obligations incurred by the Trustee Agencies that arose as a result of the spill. The close tracking of this restoration program over 3-plus years of implementation and 2-years of evaluation will require a considerable amount of effort and travel by agency representatives. The Trustees will make every effort to minimize administrative costs.
d. The State Settlement Agreement and Federal Consent Decree are public documents filed with the Court and are available from the California Department of Fish and Game Office of Spill Prevention and Response. The key elements and background information are summarized at the beginning of the Draft Plan.
e. The proposals from the Board of Supervisors and The Avila Valley Advisory Council were not consistent with the Trustees restoration goals as specified in the State Settlement Agreement and Federal Consent Decree. These proposals and the reasons for not funding are summarized in Appendix A2, A3, B2, and B3.

C. Restoration Actions Proposed by the Trustee Council

1. Issues Presented by the Public

a. Restoration actions proposed by the Trustee Council do not follow the direction of the Court's decree or the initial direction of Unocal.
b. Beliefs that the Trustee Council is funding the Land Conservancy of San Luis Obispo County (LCSLOC) long term goals of "City to the Sea Bikeway" and the "Transfer of Development Program."

2. Suggestions Offered by the Public

a. No specific suggestion was offered by the public, although it was implied that Unocal should have a greater voice in directing the restoration plan.

3. The Trustee Council Response

a. The Trustee Council believes that the proposed restoration projects follow the direction of the State Settlement Agreement and Federal Consent Decree that specify fish barrier removal, riparian corridor revegetation and estuarine enhancement projects. Unocal may offer comments and recommendations to the Trustee Council, however, the Trustees are not required to follow the direction of Unocal with respect to restoration actions. Moreover, the Trustee Council is not aware of what the commentor is referring to when referencing the initial direction of Unocal. Furthermore, Unocal agreed to the State Settlement Agreement and Federal Consent Decree. The Trustee Council's goal is to develop and implement restoration projects that will directly or indirectly restore the injured natural resources. The goal is not to fund the LCSLOC's long term goals, although some of these goals may be compatible with theirs.

D. Selection of the LCSLOC

1. Issues Presented by the Public

a. How did the LCSLOC become involved with the project?
b. What is the LCSLOC's role in the project?
c. There is concern that the LCSLOC does not have the staff with the proper professional qualifications necessary to be taking the lead on this important San Luis Creek mitigation project.

2. Suggestions Offered by the Public

a. Hire an independent engineer.
b. Engage local Avila-based managers.

3. The Trustee Council Response

a. The LCSLOC has worked with Trustee Agencies in the past. The LCSLOC was involved in this project for a number of reasons. It has a public outreach mechanism in place, it has experience in implementing restoration projects, and it is knowledgeable about natural resources in the area. Its role is to facilitate the implementation of projects selected by the Trustee Agencies and help oversee local contractors. The LCSLOC will coordinate with local experts who are knowledgeable concerning the local resources and restoration implementation.

b. The Trustee Agencies recognize that certain projects will require staff having professional qualifications beyond the capabilities of the LCSLOC.

Additional contracts with persons having the necessary qualifications may be necessary. The Trustee Agencies will work with local technical experts to help identify additional consultants or expertise that may be required.

E. Avila Beach: Localized vs. Regional Restoration Emphasis

1. Issues Presented by the Public

a. Restoration projects only indirectly affect Avila Beach.
b. Lack of on-site restoration projects within the intertidal zone.
c. The public challenges the assumption that intertidal and marine restoration projects are too expensive and difficult to implement.
d. In regards to the stated justification that restoration closer to the spill is technically difficult and expensive to implement, what projects are deemed technically difficult and expensive and by whom?

2. Suggestions Offered by the Public

a. Unocal spill monies should be spent in the salt water estuary in Avila Beach as that is where the spill occurred. Unocal only intended for monies to be spent on projects that help the local environment of Avila Beach. This was a local disaster in Avila Beach and has not affected property owners upstream.
b. The estuary will ultimately benefit from upstream improvements.
c. Restore the abalone and other shell fish habitat around Avila Beach.

3. The Trustee Council Response

a. The 1992 Unocal oil spill did not enter the salt water estuary. Furthermore, the responsible party does not direct where restoration monies will be spent. Natural Resource Trustees may select projects that either directly or indirectly restore natural resources injured by an oil spill. In this case the proposed San Luis Obispo Creek projects will provide direct benefits to anadromous fish and birds that were impacted by the spill and indirect benefits to the intertidal community. Additionally, Unocal carried out a terrestrial revegetation project in the ravine above Boulder Cove where the oil flowed. In addition to restoring vegetation that was removed during the spill and subsequent clean up efforts, the purpose of this project was to reduce sedimentation and erosion into Boulder Cove and provide direct benefits to the intertidal community that was primarily impacted by the spill.

At the time of settlement, the Trustees were not aware of technically feasible intertidal restoration projects with a high expected benefit to cost relationship. Natural recovery may be enhanced through projects that restore productivity such as the terrestrial revegetation project and other projects proposed by the Trustee Council. Furthermore, many of the natural resources injured by the 1992 oil spill, particularly the birds, are not necessarily local resident species. The spill impacted migratory birds, anadromous fish and other species whose range exceeds the local Avila Beach community. Moreover, the State Settlement Agreement and Federal Consent Decree call for restoration projects in and along San Luis Obispo Creek. However, the Trustees remain open too specific near shore restoration projects that meet the evaluation criteria.

b. The Trustees agree that the estuary will ultimately benefit from upstream improvements.

c. The shellfish project proposals calling for planting abalones in protective structures and creation of artificial reefs and kelp beds as a means of improving shellfish populations, primarily abalones, to support fisheries are not viable projects because of predation by sea otters. Furthermore, the Trustees did not detect specific injuries to abalone or other shell fish as a result of the 1992 oil spill. Nonetheless, the Trustees believe that rocky intertidal communities that include abalone and other shell fish, will benefit from projects that improve the productivity of San Luis Obispo Creek.

F. Restoration of Upper San Luis Creek

1. Issues Presented by the Public

a. Upper San Luis Obispo Creek is not receiving the same attention as the lower reaches of San Luis Creek

2. Suggestions Offered by the Public

a. The upper reaches of San Luis Obispo Creek that include Steelhead spawning and the Steelhead nursery need improvement before any improvements are made on the corridor and lower reaches of San Luis Obispo Creek.

3. The Trustee Council Response

a. The primary problems regarding steelhead spawning and nursery habitat in the upper reaches of the San Luis Obispo Creek watershed are fish barriers

that impede or prevent upstream and downstream migration. A sequential approach has been adopted in addressing these barriers since an individual stream is only as good as its least passable barrier. Project concepts have been tentatively, approved, subject to final approval of all required permits and easements, in San Luis Obispo Creek up to Stagecoach Road, in Stenner Creek to the Cheda Pond diversion, and in Prefumo Creek to the rip-rap barrier. Removal of these barriers will greatly increase access to the upper reaches of the San Luis Obispo Creek watershed. The Trustee Council will further evaluate the merits of placing additional restoration efforts on the upper San Luis Obispo Creek watershed and will seek input from local technical experts on this issue.

G. Restoration of Lower San Luis Creek

1. Issues Presented by the Public

a. If the City of San Luis Obispo is successful in their plan to reduce the discharge of treated effluent by 69%, San Luis Obispo creek will undergo unknown changes in its hydromorphology. The uncertainty of this issue accentuates concern with the concentration of effort currently proposed for lower San Luis Obispo Creek.

2. Suggestions Offered by the Public

a. Purchase and maintain a remote flow monitoring system at Marre Dam to record and inform the City of San Luis Obispo of discharge rates.

3. The Trustee Council Response

a. The Trustee Council has focused on current problems rather than speculate on the benefits of restoring resources that may be impacted by unknown future changes in the hydromorphology of San Luis Obispo Creek.
b. This suggestion was rejected because there is no evidence that monitoring water quality at Marre Dam will aid in managing wastewater discharges into San Luis Obispo Creek to benefit water quality.

H. Flood Control and Water Conveyance of San Luis Obispo Creek

1. Issues Presented by the Public

a. The Draft Plan is public works flood control based, rather than watershed and ecology based.
b. The Draft Plan does not address flood threats of lower San Luis Obispo Creek.
c. Considerable flooding has been caused by over planting of vegetation along San Luis Obispo Creek.

2. Suggestions Offered by the Public

a. The primary benefit of San Luis Obispo Creek is flood water conveyance. San Luis Obispo Creek needs to be cleared and maintained so that flood waters are transported to the ocean with minimum damage to property and structures.
b. San Luis Obispo Creek must continue to serve as a waste water channel for the City of San Luis Obispo.
c. Return San Luis Obispo Creek to its natural flow so it can flush out during the winter season.
d. Restoration will benefit all if San Luis Obispo Creek is clean and can flow freely to the ocean without barriers from storm refuse, litter, and Arundo bamboo.
e. Discuss bank stabilization, channelization, etc. with the San Luis Obispo Creek Task Force regarding remedies for flood control.
f. An entire drainage system plan is required for San Luis Obispo Creek. The City of San Luis Obispo and Cal Poly must be included in the plan.

3. The Trustee Council Response

a. The intent of the Trustee Council is to develop and implement a restoration plan that is watershed and ecology based rather than public works flood control based. For that reason, the Draft Plan does not address flood threats of lower San Luis Obispo Creek. Flood control requirements are contained in local, State, and Federal law.
b. The Trustee Council does not control whether San Luis Obispo Creek continues to serve as a wastewater channel for the City of San Luis Obispo. The State Settlement Agreement and Court Decree did not authorize the natural resources restoration funds to be used for measures that are otherwise required by State and Federal laws. The Trustee Council supports adequate flows to support fish, wildlife and their habitats.
c. The Trustee Council's efforts to develop and implement restoration projects in and along San Luis Obispo Creek are to provide habitat and other benefits to natural resources. The Council's goal is not to maximize the river's use for flood water conveyance. The Council will seek advice from

local technical experts to ensure that the proposed projects do not exacerbate flooding problems.

d. The Trustee Council believes that benefits from restoration will increase if San Luis Obispo Creek can flow naturally to the ocean without barriers from storm refuse, litter, and Arundo. The Trustee Council supports the development of a watershed-wide plan for exotic plant species removal and stream habitat maintenance.

e. The Trustee Council is willing to discuss the project proposals as well as implementation with the San Luis Obispo Creek Task Force. To the extent possible, the Trustee Council will ensure the projects are compatible with flood control efforts.

f. The Trustee Council will coordinate with the City of San Luis Obispo and Cal Poly in developing and implementing natural resource restoration projects in and along San Luis Obispo Creek.

I. Erosion Control and Bank Stabilization of San Luis Obispo Creek

1. Issues Presented by the Public

a. Erosion control on the banks of San Luis Obispo Creek is a major concern. Unless erosion is controlled upstream, the sedimentation cannot be controlled downstream.

b. The stream, riparian zone**,** and wildlife benefit from the natural meandering of the stream. The bank stabilization and riparian enhancement aspects of the Draft Plan are designed to work against the natural stream meandering process. Thus, eliminating many ecological benefits derived from the meandering while creating a “channelization” project.

2. Suggestions Offered by the Public

a. Due to the 1995 storms, restoration of the Avila Beach Golf Course has run into millions of dollars. As such, the Avila Beach Resort requests the allocation of monies to provide funding for the construction of an appropriate reinforcement method for San Luis Obispo Creek’s banks between Bridges 12 and 16 on the Avila Beach Golf Course.

b. Stabilize the banks of San Luis Obispo Creek that traverses through the Avila Beach Golf Course to prevent further siltation of San Luis Obispo Creek.

c. San Luis Obispo Creek should be dredged and cleaned as it is full of rock and silt from this past winter season. This would enhance sport fishing and other recreational uses of San Luis Obispo Creek.

d. San Luis Obispo Creek needs to be cleaned to allow for a healthy estuarine habitat.
e. Re-channel San Luis Obispo Creek where it meets the ocean.

3. The Trustee Council Position

a. The Trustee Council considered three bank stabilization project concepts in the estuary and bordering the golf course that were not approved for funding. Ongoing contaminant cleanup in the vicinity of Avila Beach and in the estuary as a result of the Avila Beach Remediation Project, resulting in uncertain levels of disturbance to the estuarine habitat resulting from these cleanup activities, have led the Trustee Council to temporarily set aside the cleanup funds allocated for estuary habitat enhancement.
b. The Trustee Council believes that settlement money should not be spent on stream maintenance projects such as bank stabilization until there is a watershed-wide plan for exotic plant species removal and stream habitat maintenance.
c. The Trustee Council does not wish to interfere with ongoing investigation and remediation efforts occurring at Avila Beach and there is no evidence that the rechannelization of San Luis Obispo Creek where it meets the ocean will have any beneficial effects on fish and wildlife resources.

J. Restoration of the Riparian Forest Along San Luis Obispo Creek

1. Issues Presented by the Public

a. The Draft Plan inadequately discusses what is a fairly typical riparian forest along lower San Luis Obispo Creek.
b. The Draft Plan is human friendly, but fish and wildlife unfriendly as it focuses on big trees that will shade the undergrowth and stabilization of stream banks that will result in decreased aquatic and riparian diversity, not restoration.
c. On page 23 of the Draft Plan, the authors compared irrelevant summer water temperatures to optimum salmon spawning temperatures to justify more vegetation along San Luis Obispo Creek.

2. Suggestions Offered by the Public

a. No willow elimination projects should be done under the Draft Plan. The willow riparian forest is not likely to regenerate at a maintenance level and is likely being systematically reduced.

b. Unocal monies should be spent on planting willows or studying whether the willow riparian forest is regenerating itself on lower San Luis Obispo Creek under current human centered San Luis Obispo Creek management practices.
c. Willows should be planted along lower San Luis Obispo Creek where non endemic cottonwoods and sycamores were planted along the top bank. This planting should be done soon as the opportunity will be lost due to the willow shading effect that will be created by the trees planted on the top of the bank.
d. Native cottonwoods and sycamores from the San Luis Obispo Creek Watershed (not from Orange, San Bernardino, and Eastern Sierra Counties) need to be planted.
e. Revegetate the riparian corridor of San Luis Obispo Creek.
f. Remove exotic plants, specifically the Casterbean and revegetate with German and English Ivy.

3. The Trustee Council Response

a. The Trustee Council will seek advice from local technical experts regarding the issues and suggestions presented by the public in order to evaluate and prioritize revegetation efforts, including selection of plant species.
b. Removal of exotic plant species will be based on a watershed-wide plan for exotic plant species removal and stream habitat maintenance. Revegetation with German and English Ivy will not be considered since these are exotic and invasive plant species.

K. Fill Projects within the San Luis Obispo Creek 100 Year Flood Plain

1. Issues Presented by the Public

a. People are filling the land within the 100-year flood plain of San Luis Obispo Creek and no entity is responding. This cancels out any restoration proposed.
b. Concern was expressed over the two fill projects within the part of San Luis Obispo Creek that are influenced by ocean tides. Various government agencies have been contacted, but the agencies claim to have no jurisdiction over the projects.
c. The Draft Plan does not address the problems of filling land within the 100-year flood plain of San Luis Obispo Creek that is presently occurring.

2. Suggestions Offered by the Public

a. Large amounts of money should not be spent upstream when the fill projects around Avila Beach continue unimpeded.
b. Stop the filling of San Luis Obispo Creek by developers as it creates damage and erosion to the creek.

3. The Trustee Council Position

a. The Trustee Council does not control the filling of land within the 100-year flood plain. Problems resulting from "fill projects" are outside the scope of the restoration planning process. The Trustee Council acknowledges that numerous human activities have adverse impacts on natural resources and unfortunately neither the Trustee Council nor its parent agencies are in a position to correct all of the problems affecting San Luis Obispo Creek. The Trustee Council is concerned with whether the proposed projects will directly or indirectly restore resources injured by the 1992 oil spill. The Trustee Council will seek the advice of local experts whether these activities cancel out the benefits provided by the proposed restoration alternatives.

L. The Effects of Waste Water Discharge on San Luis Obispo Creek

1. Issues Presented by the Public

a. How does the sewer effluent of San Luis Obispo waste water discharge affect the ability of salmon and steelhead to survive?
b. The Draft Plan suggests that the effluent from the Water Reclamation Facility is bad for San Luis Obispo Creek. Is this the opinion of the Trustee Council?

2. Suggestions Offered by the Public

a. Improve the Avila Beach Community Services District's waste water disposal and collection system, including upgrading the Avila Beach Community Services District's waste water treatment system to tertiary level treatment.
b. A compromise with the farmers is needed to assure that waste products will not be allowed in San Luis Obispo Creek.

3. The Trustee Council Response

a. The effects of wastewater discharges on the ability of salmon and steelhead to survive are mixed. On the one hand, a decrease in wastewater discharges from the City of San Luis Obispo waste water disposal system will result in decreased streamflow. Decreased stream flows are often detrimental to anadromous fish. On the other hand, wastewater discharges are often at a higher temperature than is optimal for anadromous fish.

b. In the event that permitted waste water discharges cause harm to fish and wildlife resources, the waste discharger is required by State and federal laws to correct the problem. Furthermore, waste water treatment projects are not consistent with the Trustees restoration goals as specified in the State Settlement Agreement and Federal Consent Decree for the Avila Beach 1992 Oil Spill. Additionally, the tertiary treatment proposal at $1,500,000 requires far more money than was allocated to the entire restoration project.

c. The Trustee agencies represented by the Trustee Council will investigate the claims that farmers are discharging waste products into San Luis Obispo Creek and take the necessary actions through the Regional State Water Resources Control Board and the United States Environmental Protection Agency to stop this practice.

M. The Removal of Fish Barriers of the San Luis Obispo Creek

1. Issues Presented by the Public

a. Why are Unocal monies being spent upstream to remove fish barriers from private and public properties?

b. Does the CDFG have the authority to enforce the removal of fish barriers on private property at the expense of the property owner?

2. Suggestions Offered by the Public

a. The greatest biological benefit to anadromous fisheries as well as the biggest bang for the buck will be derived from the removal of fish passage barriers. These projects should take priority over any others.

3. The Trustee Council Response

a. Although lands along the creek may be privately owned, ownership and control of all navigable waterways is vested in the state in trust for the people. The Trustee Council is not requiring private property owners to fund the removal of fish barriers. However, the Trustee Council will seek

landowner cooperation through conservation easements or other arrangements from willing landowners for purposes of site access.

b. The Trustee Council agrees that fish barrier removal projects provide a great biological benefit to anadromous fisheries and shall place a high priority on these projects.

N. Restoration of Historic Fish Populations in San Luis Obispo Creek

1. Issues Presented by the Public

a. The Draft Plan correctly identifies the lack of pool habitat as being the greatest obstacle to rehabilitating historic fish populations, however, no specific projects are recommended to address this issue.

2. Suggestions Offered by the Public

a. Consult with the monitoring and scientific programs that involve fisheries. See Canyon and Stenner Creek are the best spawning grounds, but they need work. Currently nothing is proposed for See Canyon Creek.

b. To maintain water levels high enough for fish, construct seasonal reservoirs that will trap water run-off in the winter. This water could be stored and used during the dry season. Two possible sites for reservoirs: Base at Cuesta Grade or the lower Higuera area near Tank Farm Road.

c. Routinely clean streams.

3. The Trustee Council Response

a. Although the Draft Plan does not contain projects that focus primarily on pooling habitat, it does contain projects that are designed to stabilize stream banks and stream beds, and create and improve pool habitat.

b. The Trustee Council welcomes proposals for See Canyon Creek. No proposals for Canyon Creek were submitted.

c. The Trustee Council believes that the time and cost for planning and construction of seasonal reservoirs is beyond the scope of this restoration project.

d. The Trustee Council believes that settlement money should not be spent on stream maintenance projects until there is a watershed-wide plan for exotic plant species removal and stream habitat maintenance.

APPENDIX D

O. The Draft Plan and the Rights of Private Property Owners Along San Luis Obispo Creek

1. Issues Presented by the Public

a. Will the easements acquired over private property along San Luis Obispo Creek be held by the State of California or the LCSLOC?
b. If the Trustee Council is using Unocal monies as leverage to gain easements over private property along the San Luis Obispo Creek, is that a taking under the Fifth Amendment to the United States Constitution?
c. Is an easement or an agreement with the LCSLOC a prerequisite for riparian benefits?
d. How does the Trustee Council justify granting only one property owner (Marshall) bank stabilization when there are four contiguous property owners in the area?

2. Suggestions Offered by the Public

a. There must be parity between the private property owners along the San Luis Obispo Creek so that no one person may gain from another's sacrifice.

3. The Trustee Council Response

a. The Trustee Council has not yet determined whether easements acquired for the long term protection of restoration projects implemented by the Trustee Council shall be held by the CDFG or a suitable non-profit organization.
b. The Trustee Council is not using the Unocal money as "leverage" to gain easements over private property along San Luis Obispo Creek. The Trustee Council intends to carry out the types of projects set forth in the State Settlement Agreement and Federal Consent Decree provided it is feasible to do so. One of the feasibility concerns of the Trustee Council is the long term protection of any revegetation or bank stabilization projects funded out of the settlement proceeds. The Trustee Council does not intend to fund projects unless long term protection is provided in the form of conservation easement or other protections from willing landowners. Because site (landowner) specific projects are not required under the terms of the State Settlement Agreement and Federal Consent Decree, no individual landowner is being forced to provide conservation easements. Moreover, if landowners are not willing to provide conservation easements, the Trustee Council will consider alternative projects elsewhere. Accordingly, there is no taking.

c. Conservation easements or similar protections must be in place prior to spending limited restoration funds on riparian restoration and fish barrier removal projects.
d. The proposed projects in the Draft Plan were developed after considering which areas along the creek were in critical need of restoration and would provide the greatest benefits to wildlife given certain cost constraints. The goal was not to "benefit" one landowner over another. Use of certain landowners' names in the Draft Plan was for ease of reference to the sites being targeted.
e. The Marshall site was not approved by the Trustee Council for restoration.

P. The Draft Plan and the California Endangered Species Act (CESA)

1. Issues Presented by the Public

a. The Draft Plan and the planning projects of the City and County of San Luis Obispo regarding the Master Drainage Plan for San Luis Obispo Creek may conflict in regards to endangered species protection.
b. Concern that the Draft Plan overlooks various endangered species.
c. The Draft Plan's neglect of willow restoration along San Luis Obispo Creek violates CESA as it affects the CESA listed Willow Flycatcher's willow habitat.

2. Suggestions Offered by the Public

a. A moratorium on any method to eliminate willows should be placed into effect in respect to the mitigation projects selected for restoration.

3. The Trustee Council Response

a. The Trustee Council will take all steps necessary to ensure that the implementation of the restoration projects do not conflict with endangered species protection.
b. The Draft Plan is not intended to benefit all endangered species in this area. However, if there is a likely potential for an adverse affect on an endangered species, the Trustee Council will either modify the proposed project to eliminate the potential for an adverse affect, or eliminate the project.
c. Not restoring a particular habitat type that would, if restored, provide benefits for an endangered species, is not in and of itself a violation of CESA. However, Trustee Council will evaluate the potential effects on Willow Flycatcher habitat before implementing any projects that might have

an adverse effect on such habitat, such as the removal of willows from certain locations along the creek.