

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.

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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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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)	Riparian Corridor Revegetation	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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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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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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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 downstream 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

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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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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.

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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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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 <i>is</i> affected by offshore energy development. The Conservation

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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.