

**RODEO GROUNDS ROAD
RESTORATION AND REVEGETATION
PLAN**

**Prepared by:
Suzanne Goode
Nat Cox
CA Department of Parks and Recreation
Angeles District
1925 Las Virgenes Road
Calabasas, CA 91302**

August 2006

INTRODUCTION.....4

PROJECT GOALS AND ACTION STATEMENTS.....5

SCHEDULE OF ACTIVITIES..... 6

SITE LOCATION.....6

 Figure 1. Rodeo Grounds Berm Project Revegetation and Restoration Plan Area7

EXISTING CONDITIONS.....8

SITE PREPARATION.....8

 Grading and Soil Work.....8

 Exotic plant removal.....8

VEGETATION RESTORATION.....9

 Mitigation Requirements.....9

 Upland/ Coastal Sage Scrub Slope.....9

 Restored Floodplain.....10

 Berm Footprint.....11

 Table 1. Species Palette for Revegetation of the Rodeo Grounds Berm Project.....12

PERFORMANCE STANDARDS AND SUCCESS CRITERIA.....12

PLANTING GUIDELINES.....14

 Local Plant Stock.....14

 Collecting Propagation Materials.....14

 Planting.....14

 Figure 2. Rodeo Grounds Berm Replanting Plan.....15

 Table 2 Recommendations for Plant Propagation.....16

 Fertilizers.....16

 Hydroseeding.....16

 Timing of Plant Installation.....16

 Mulching.....17

 Table 3. Planting Guidelines.....17

SITE PROTECTION.....18

 Signage.....18

 Site Delineation.....18

 Avoidance of Impact to Sensitive Resources.....18

 Regulatory Agency Compliance and Encroachment Permits.....18

MONITORING.....19

 Methodology.....19

 Photodocumentation.....19

 Monitoring Report.....19

RESPONSIBLE ENTITIES.....19

REFERENCES.....20

APPENDIX A. Rodeo Grounds Flora, April 2005

INTRODUCTION

The primary objective of the Rodeo Grounds Berm Removal Revegetation and Restoration Project is to restore the area currently covered by the 1.8 acre berm, (which is part of the 2.27 acre area disturbed by this project), and to integrate required tree mitigation plantings into the restoration area. Additionally, hydroseeding a portion of the presently disturbed area behind the berm will jump-start the natural restoration process. It is anticipated that restoration of the floodplain and riparian corridor in the Rodeo Grounds Road area of Topanga State Park will include natural re-alignment of the creek channel in response to storm events, re-adjustment of the channel bed as accumulated sediments are naturally entrained, and natural recruitment of riparian species.

The Rodeo Grounds Road Berm was installed without plans or permits in 1969 and rebuilt in 1980 by tenants of floodplain structures to protect their rental homes from flooding. It is located approximately 2,500 feet upstream from the ocean on Topanga Creek, and covers approximately 1.8 acres. It was built in at least 2 stages, re-aligning and replacing a lower, smaller dirt road that had been installed in the 1920's. According to local residents, asphalt and paving from the Lincoln Blvd. re-paving project were placed on the site in the late 1960's. Additional road spoils from throughout the watershed were added to raise the berm higher following the 1980 flood. Since the property was incorporated into Topanga State Park in 2001, the structures are being removed. It is anticipated that all the structures currently protected by the berm will be removed prior to the start of this project.

In order to restore the floodplain and channel of Topanga Creek to its original configuration, the berm needs to be removed. Removal will restore the natural creek channel, restore over 12 acres of wetland/ riparian floodplain, and restore above surface creek flow to provide summer rearing habitat, as well as improve over-winter habitat and critical passage links for endangered southern steelhead trout between the main stem of Topanga Creek and the ocean.

Additionally, it is anticipated that removal of the berm will allow natural storm flushing of accumulated sediments from upstream of the project area, restoring over 1,000 linear meters of creek connectivity that is critical for migrating adult and juvenile steelhead trout. The removal of these sediments should also result in a more natural diversity of geomorphologic habitat units, which should provide additional spawning and rearing habitat for fishes.

A critical component of the restoration is removal of the existing exotic and invasive species associated with the removal of the berm and structures, and re-establishment of native aquatic, coastal sage scrub and riparian woodland communities. It is anticipated that the creek channel will meander and eventually return to its more historic location and patterns.

Since the removal of the berm will require the loss of several mature native trees that have become established on the berm since 1980, as well as the probable loss of a mature cottonwood tree that was buried within the berm, planting of mitigation trees will be needed to meet California Coastal Commission and California Department of Fish and Game permit requirements. This plan incorporates those mitigation plantings within the larger matrix of overall restoration.

Preliminary archeological surveys indicate that no cultural resources will be impacted by the removal of the berm down to the native creek bed level, or slight grading of the former house locations to eliminate mounding and promote creek channel restoration.

PROJECT GOALS AND ACTION STATEMENTS

Goal: Restore native vegetation that will restore the aquatic, coastal sage scrub, and riparian woodland communities of the site, and provide high quality habitat for endangered steelhead trout following the removal of the berm.

Actions:

Eliminate exotic species:

- Remove all non-native tree species from the berm, and,
- Remove invasive species such as *Arundo donax*, fennel, black mustard, tree tobacco and cape ivy.

Promote establishment of native plant communities:

- Restore riparian woodland and coastal sage scrub species along the slopes,
- Restore aquatic and obligate wetland species within the floodplain and along the channel, and,
- Install all required mitigation plantings.

Goal: Restore the natural creek geo-morphology and hydrologic and hydraulic regimes.

Actions:

Restore natural creek grade and soil health:

- Remove the fill material and gunnite that comprise the berm,
- Evaluate soils for compaction and treat appropriately.
- Preserve soils that appear intact or contain mycorrhizae or other biotic elements that will facilitate the soil development of newly restored regions, and,
- Preserve the small areas delineated as wetlands on the perimeter of the creek channel.

Restore the western slope and floodplain area:

- Restore the western slope following the removal of the berm along the contour, matching the natural hillslope on either side of the berm,
- Install jute netting or other suitable erosion control fabric to initially stabilize the slope, and,
- Rip and decompact the areas within the footprints of previous home sites to promote increased channel width, variable scour and deposition, and encourage entrainment of the sediments that have accumulated upstream.

SCHEDULE OF ACTIVITIES

This schedule may need to be altered due to funding constraints.

Spring -Fall 2007: Collect seed and cuttings, propagate, continue exotic species removal

Fall 2007: Prepare site, install jute netting/erosion control fabric, and initiate planting

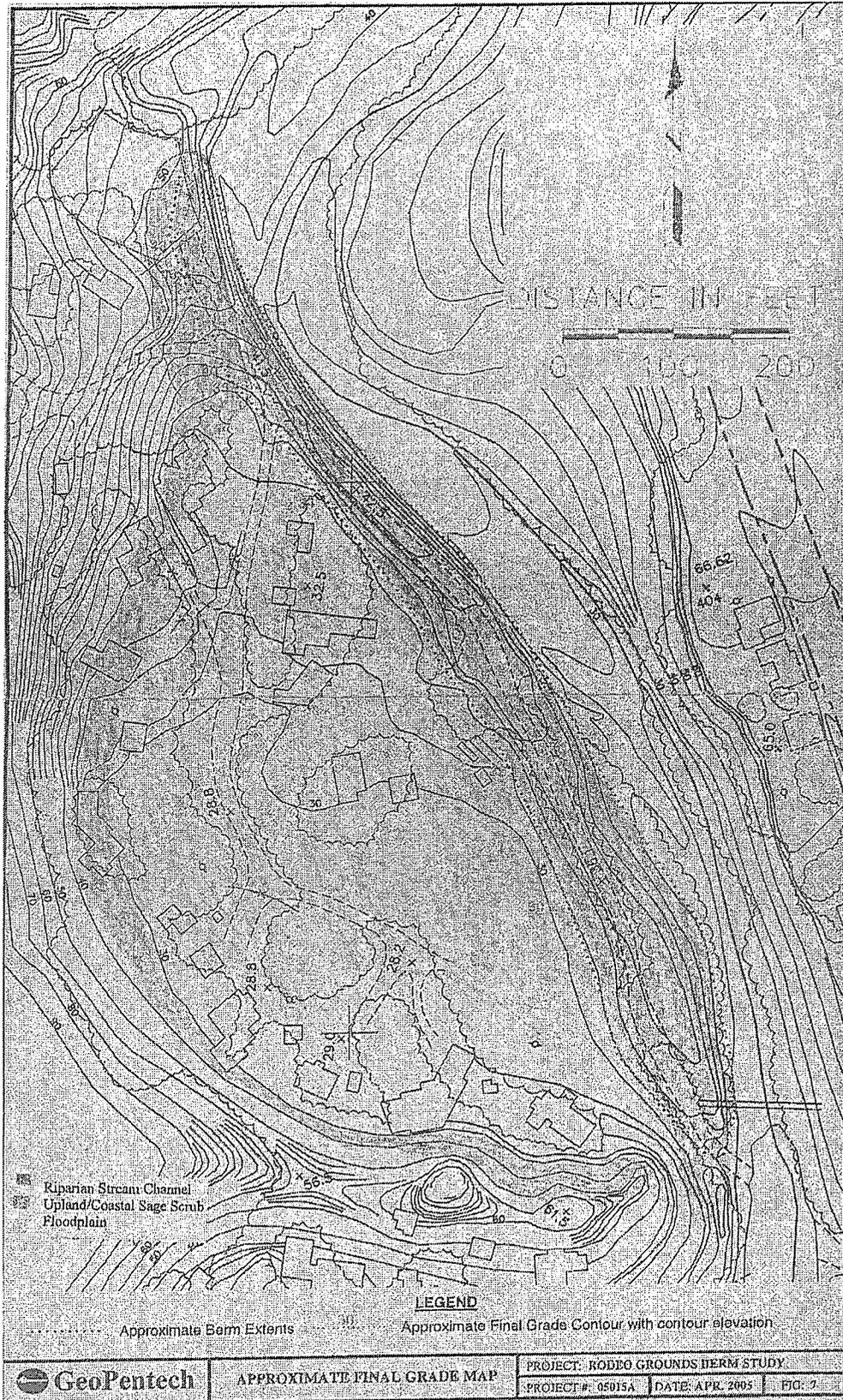
2007-2012: Monitoring and maintenance

SITE LOCATION

This project is located approximately 2,500 feet upstream from the ocean, bounded by the present creek channel on the east, and a natural hillslope on the west and southwest. The project area includes the 1.8 acre berm which will be removed down to natural creek bed level, as well as the surrounding floodplain which has experienced disturbance from a variety of development associated with the residential land uses. The total project area encompasses approximately 12.4 acres, where all exotic ornamental vegetation will be removed during excavation and structure removal.

The revegetation and restoration effort will focus on planting trees along the toe of the slope to provide additional stabilization. Willow and mulefat cuttings and seeds will be directed to the former berm footprint. The disturbed floodplain area which will be used during the excavation process for truck access and stockpiling materials will be de-compacted and at least 6 acres hydroseeded with a seed mix appropriate to the site.

Figure 1. Rodeo Grounds Berm Project Revegetation and Restoration Project



EXISTING CONDITIONS

Preliminary vegetation mapping was undertaken by staff from the California Department of Parks and Recreation Southern Service Center in 2003 (Chris Peregrin, personal communication 2005), with additional site surveys conducted in spring 2005 by biologists from Envicom, Corp. and the Resource Conservation District of the Santa Monica Mountains.

The project area consists of a mixture of remnant wetland species, disturbed riparian assemblages dominated by southern willow scrub, and coastal sage scrub on the perimeter, with non-native exotic landscape and escaped plant species surrounding the houses. Over 100 non-native trees, ranging from large Eucalyptus to smaller fruit trees are present. Several large stands of giant reed (*Arundo donax*) are also present.

In addition to the willow complex, several mature native trees, including sycamores, coast live oak, California walnut, toyon, Mexican elderberry and a single specimen Fremont cottonwood are also present. Some of these trees have grown on top of the berm and they will need to be removed along with the fill material. Others are sufficiently isolated from the fill, and every attempt will be made to preserve them during the excavation of the fill.

SITE PREPARATION

Grading and Soil Work

The site has largely retained its floodplain gradient and as a result extensive grading will not be necessary, with the exception of berm removal.

Areas with highly compacted soils may require disking or various other treatments in order to alleviate the compaction. A bulldozer will be used to disk the soil formerly under structures or driveways to a depth of 12 inches prior to planting to loosen compacted soils, allowing for better plant and seedling establishment. Soil disking must be conducted prior to plant establishment and before winter rains set in to minimize erosion problems on site.

Exotic Plant Removal

Exotic annuals and perennials are abundant throughout the project area. A list of all species identified is found in Appendix A. Of primary concern is *Arundo donax*, a highly invasive perennial species that can quickly take over an area if left uncontrolled. A manual removal effort was initiated in 2004.

Control of all exotic species will be achieved through either mechanical methods and/or herbicide treatment as needed to achieve the target performance criteria. Specific methods used will vary according to species and those methods that minimize site disturbance will be preferred. Any herbicide use in regions that are in close proximity to the creek and its riparian habitat must be approved for aquatic and wetland habitat (i.e., Rodeo®).

Ivy (*Hedera sp.*), greater periwinkle (*Vinca major*), hottentot fig (*Carpobrotus edulis*), fennel (*Foeniculum vulgare*), Cape ivy (*Delairea odorata*), and numerous mustards and grasses including Bermuda grass (*Cynodon dactylon*) and Saint Augustine grass (*Stenotaphrum secundatum*) are difficult to remove and will require a combination of mechanical and chemical treatment and frequent monitoring for regrowth.

VEGETATION RESTORATION

The selection of plant species for this project is based on the species currently found on the site, and comparable community assemblages from adjacent areas within the Topanga Creek Watershed.

Mitigation Requirements

Both the California Coastal Commission and the California Department of Fish and Game will require mitigation for the loss of the native trees described in the Rodeo Grounds Berm Removal Project: Oak Tree Report and Native Tree Preservation and Removal Plan (August 2006). Since the goal of this project is to restore the natural floodplain and restore the riparian corridor, the mitigation plantings will be included in appropriate locations within the project area. At minimum, the mitigation planting proposed includes:

- five one-gallon coast live oaks, and 10 acorns in tree tubes
- 15 stem cuttings propagated from the cottonwood
- three one-gallon California walnuts, and 10 nuts planted in tree tubes
- 15 one-gallon sycamore trees
- 100 willow stake cuttings
- 10 one-gallon toyon
- 10 one-gallon Mexican elderberry

Additionally, a ratio of 3:1 mitigation area is typically required by the CDFG for temporary streambank impacts such as the berm removal. Therefore, this plan incorporates both of these required elements in the overall restoration plan. However, it is anticipated that natural realignment of the creek channel and re-adjustment of the sediment loads will occur. It therefore makes sense to concentrate the required mitigation plantings along the toe of the slope, and within the former berm footprint, with hydroseeding of the additional areas behind the berm that have been disturbed for many years due to the impacts of the tenants.

Upland/Coastal Sage Scrub slope

The project area is bordered on the north, west and southwest by natural ridges and slopes. The fill material will be removed to an appropriate landfill and the area graded to match the contour of the existing slopes. A mix of Coastal Sage Scrub species and native trees will be planted on the stabilized slope. Jute netting or a suitable erosion control fabric will be installed to mechanically hold the slope until the plantings are mature.

Recommended species include, but are not limited to:

Baccharis salicifolia

Enceilia californica
Eriogonum cinereum
Eriogonum fasciculatum foliolosum
Eriophyllum confertiflorum
Heteromeles arbutifolia
Juglans californica
Lotus scoparius
Lupinus succulentus
Malosma laurina
Nassella pulchra
Oenothera elata hirsutissima
Populus f. fremontii
Quercus agrifolia
Rhus integrifolia
Salvia mellifera
Sambucus mexicana
Umbellularia californica

Restored floodplain

The project area includes over 12 acres of historic floodplain that has been altered by years of residential land uses. The structures and some exotic ornamental vegetation around them will be removed. The soil will be prepared to address problems of compaction and to remove the invasive plants. Since it is anticipated that the creek channel will meander according to storm events until it eventually finds its preferred alignment, the revegetation palette for this area will incorporate a mix of coastal sage scrub and riparian edge species, matching the dominant southern willow scrub community.

Recommended species include, but are not limited to:

Alnus rhombifolia
Baccharis salicifolia
Eriogonum fasciculatum foliolosum
Eriophyllum confertiflorum
Heteromeles arbutifolia
Juglans californica
Lotus scoparius
Lupinus succulentus
Malosma laurina
Nassella pulchra
Oenothera elata hirsutissima
Platanus racemosa
Populus f. fremontii
Quercus agrifolia
Rhus integrifolia
Salix exigua
Salix lasiolepis

Salix laevigata
Salvia mellifera
Sambucus mexicana
Umbellaria californica

Berm Footprint

The re-contoured are of the berm (1.8 acres) will be restored with a mix of southern willow scrub and more typical wetland associated species. Re-vegetation efforts along the stream channel must be designed to promote the establishment of a wider channel in which the creek may move about with variable flow events creating multiple smaller channels and benches, braiding, and various regions of scour and deposition. Re-vegetation is required throughout the entire stream channel with the expectation that these plants will establish a functional community and assist in creating variability in stream processes. Plants within the direct flow of flood events will likely be lost, and therefore the required cover criteria for those areas is not specifically defined.

Recommended species include, but are not limited to:

Alnus rhombifolia
Baccharis salicifolia
Elymus g. glaucus
Platanus racemosa
Populus f. fremontii
Salix exigua
Salix lasiolepis
Salix laevigata

Table 1. Species Palette for Revegetation of the Rodeo Grounds Berm Project

Scientific Name	Common Name	Upland/ CSS	Floodplain	Berm Footprint
TREES				
<i>Alnus rhombifolia</i>	White Alder		X	X
<i>Heteromeles arbutifolia</i>	Toyon	X	X	
<i>Juglans californica</i>	CA Walnut	X	X	
<i>Platanus racemosa</i>	CA Sycamore		X	X
<i>Populus f. fremontii</i>	Fremont Cottonwood	X	X	X
<i>Quercus agrifolia</i>	Coast Live Oak	X	X	
<i>Salix exigua</i>	Narrow-leaf Willow		X	X
<i>Salix laevigata</i>	Red Willow		X	X
<i>Salix lasiolepis</i>	Arroyo Willow		X	X
<i>Sambucus mexicana</i>	Mexican Elderberry	X	X	
<i>Umbellularia californica</i>	California Bay	X	X	
SHRUBS				
<i>Baccharis salicifolia</i>	Mule Fat	X	X	X
<i>Eriogonum cinereum</i>	Ashleaf Buckwheat	X		
<i>Eriogonum fasciculatum foliolosum</i>	CA Buckwheat	X	X	
<i>Malosma laurina</i>	Laurel Sumac	X	X	
<i>Rhus integrifolia</i>	Lemonadeberry	X	X	
<i>Salvia mellifera</i>	Black Sage	X	X	
HERBACEOUS PERRENIALS AND SUB-SHRUBS				
<i>Encelia californica</i>	CA Bush Sunflower	X	X	
<i>Eriophyllum c. confertiflorum</i>	Golden Yarrow	X	X	
<i>Lotus scoparius</i>	Deer Weed	X	X	
<i>Lupinus succulentus</i>	Arroyo Lupine	X	X	
<i>Mimulus aurantiacus</i>	Orange Bush Monkey Flower	X	X	
<i>Oenothera elata hirsutissima</i>	Evening Primrose	X	X	
GRASSES				
<i>Elymus g. glaucus</i>	Blue Wild Rye			X
<i>Nassella pulchra</i>	Purple Needlegrass	X	X	

PERFORMANCE STANDARDS AND MONITORING

1. Revegetation of a minimum of 2.27 acres is required, as well as replacement of all native trees lost in a ratio of 3:1, and staking of willow and mulefat in the footprint of the former berm and in the floodplain area to the west, as well as the planting of the following numbers of trees along the contours of the slopes:
 - five one-gallon coast live oaks, and 10 acorns in tree tubes
 - 15 stem cuttings propagated from the cottonwood
 - three one-gallon California walnuts, and 10 nuts planted in tree tubes
 - 15 one-gallon sycamore trees
 - 100 willow stake cuttings
 - 10 one-gallon toyon
 - 10 one-gallon Mexican elderberry

2. All plantings shall take place in the Fall, following the first wetting rains. Hand watering will be provided weekly should the rains be sparse and continued as needed to keep the plants going. All irrigation will be provided for up to two years post planting.
3. All trees and cuttings will be planted in a clumped, randomly spaced pattern to emulate natural recruitment.
4. All tree, cutting and seed materials used shall be either taken directly from the site or collected within the local watershed.
5. Success Criteria for plant establishment is as follows:
 - a) At least 80% of all planted trees and cuttings of each species shall survive the first year.
 - b) After the first year, 100% survival of all planted trees and cuttings and/or attainment of 75% cover after three years, and 90% cover of the vegetation installed after five years.
 - c) No single species shall constitute more than 50% of the vegetative cover. If the survival and cover establishment goals are not met, additional planting will occur, and replacement plant monitoring shall continue for a total of five years post planting, using the same cover and survival guidelines.
6. Success Criteria for Exotic plant removal is as follows:
 - a) Exotic trees and ornamental vegetation on the berm and near structures in the 12 acre floodplain area behind the berm will be removed by grubbing during the berm excavation and structure removal process and disposed of in an area which will prevent its re-establishment.
 - b) Additional weed control and maintenance will be conducted weekly at first, and then as needed for two years post planting.
 - c) No woody invasive species will be present in the berm footprint area, along the revegetated toe of the slope or within the hydroseeded area of the floodplain.
 - d) Herbaceous invasive cover will not exceed 5% cover in these areas.
 - e) Whenever possible, hand or hand-operated power tools will be used to remove invasive species.
 - f) If control of non-native invasive species cannot be conducted manually, then use of a herbicide will be applied in concordance with state and federal laws. No herbicides shall be used where Threatened or Endangered species occur. No herbicides shall be used if wind velocity exceeds five miles per hour. All herbicides shall be mixed with dye to monitor distribution.
 - g) In areas where there is a possibility of coming into contact with water, only those herbicides approved for aquatic use may be used.

PLANTING GUIDELINES

Local Plant Stock

All plant material and seeds used in this restoration must be of local origin stock, preferably taken from natural stocks within Topanga Canyon. They may also originate from closely adjacent lands within a 10-mile radius of the site, or as agreed upon by the State Park ecologist. Seed should be hand broadcast or the hydro seed device cleaned before use on site and between different areas to prevent unwanted species from becoming distributed in all areas.

Collecting Propagation Materials

Native seeds should be harvested according to the needs of the species. Most seeds specified will be harvested in late summer or early fall. Scarification or heat treatment will be conducted as needed according to each species needs. Seeds will be cleaned and stored appropriately until planted out in the California Department of Parks and Recreation Angeles District nursery or directly on to the site.

Cuttings of roots and shoots of native shrubs and trees will be conducted according to the needs of the species. Willow and mule fat cuttings will be a minimum of three feet long, and contain at least one viable node.

In addition to growing plants from seeds in the nursery, the use of direct seeding on the site is also recommended. The seeded areas within the project site will be covered with 2-4 inches of mulch generated from the site.

Planting

A plan that depicts the planting areas is found in Figure 2.

Preparation of the soil is recommended prior to planting. Disking or other methods deemed necessary to loosen compacted areas should be accomplished following the removal of non-native vegetation. The slope area should be stabilized using jute or other erosion control fabric prior to planting. Mulch generated by the removal of the non-invasive exotic ornamental vegetation should be spread over the area to revitalize the soil and discourage weedy growth.

All plants should be planted with minimal soil disturbance, and only when no weed re-growth occurs after mechanical removal. It is recommended that at the time of planting, there should be deep watering to aid establishment.

Figure 2. Rodeo Grounds Berm Replanting Plan

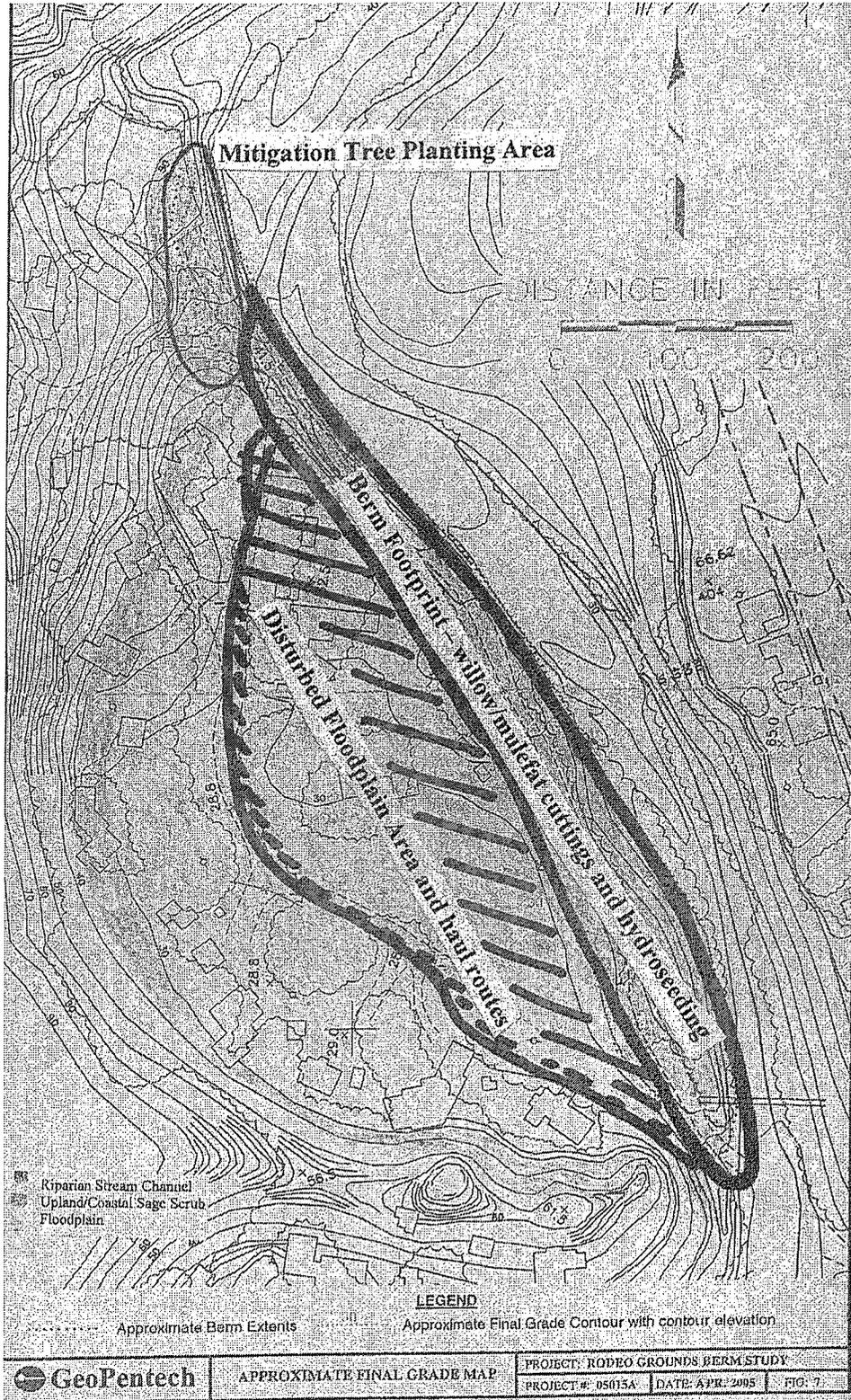


Table 2. Recommendations for Plant Propagation

Scientific Name	Common Name	Cutting	Direct Seeding
TREES			
<i>Alnus rhombifolia</i>	White Alder	X	
<i>Heteromeles arbutifolia</i>	Toyon		X
<i>Juglans californica</i>	CA Walnut		X
<i>Platanus racemosa</i>	CA Sycamore	X	
<i>Populus f. fremontii</i>	Fremont Cottonwood	X	
<i>Quercus agrifolia</i>	Coast Live Oak		X
<i>Salix exigua</i>	Narrow-leaf Willow	X	
<i>Salix laevigata</i>	Red Willow	X	
<i>Salix lasiolepis</i>	Arroyo Willow	X	
<i>Sambucus mexicana</i>	Mexican Elderberry		X
<i>Umbellularia californica</i>	California Bay		X
SHRUBS			
<i>Baccharis salicifolia</i>	Mule Fat	X	
<i>Eriogonum cinereum</i>	Ashleaf Buckwheat		X
<i>Eriogonum fasciculatum</i>	CA Buckwheat		X
<i>Malosma laurina</i>	Laurel Sumac		
<i>Rhus integrifolia</i>	Lemonadeberry		
<i>Salvia mellifera</i>	Black Sage		X
HERBACEOUS PERRENIALS AND SUB-SHRUBS			
<i>Encelia californica</i>	CA Bush Sunflower		X
<i>Eriophyllum c. confertiflorum</i>	Golden Yarrow		X
<i>Lotus scoparius</i>	Deer Weed		X
<i>Lupinus succulentus</i>	Arroyo Lupine		X
<i>Mimulus aurantiacus</i>	Orange Bush Monkey Flower		
<i>Oenothera elata hirsutissima</i>	Hooker's Evening Primrose		X
GRASSES			
<i>Elymus g. glaucus</i>	Blue Wild Rye		X
<i>Nassella pulchra</i>	Purple Needlegrass		

Fertilizers

Fertilizer should not be used on the restoration site. Exotic weeds are better able to utilize fertilizer than natives, and they are less competitive in the absence of fertilizer. Soil amendment/compost (free of weed seed) may be used where appropriate. Cultivars or native plants that do not occur within native habitats at Topanga State Park shall not be planted.

Hydroseeding

The hydroseed mix should contain seeds gathered on site or native to the site, virgin wood fiber, mycorrhizal inoculant, and M tackifier.

Timing of Plant Installation

Planting of container plants, cuttings, or seed should occur just prior to the rainy season (Fall). Plants may need to be hand watered until there is consistent precipitation or until plants become established.

Mulching

Mulch generated by the removal of the non-invasive exotic ornamental vegetation should be spread over the planting area along the toe of the slope and within the berm footprint and adjacent disturbed floodplain area to a depth of 2-4 inches, to revitalize the soil and discourage weedy growth. No mulch should be directly next to tree or cutting trunks or leaders.

Table 3. Planting Guidelines

Scientific Name	Common Name	Spacing (Feet)	Lb./acre seed	Container Size (gal)	Cutting/stakes	Cost per unit	No units	Total Cost
TREES								
<i>Alnus rhombifolia</i>	White Alder	20	0	1	3' lengths	5.00	20	100.00
<i>Heteromeles arbutifolia</i>	Toyon	4	2	1	0	10.00	2	20.00
<i>Juglans californica</i>	CA Walnut	20	0	1		1.00	10	10.00
<i>Platanus racemosa</i>	CA Sycamore	20	0	1		5.00	20	100.00
<i>Populus fremontii</i>	Fremont Cottonwood	20	0	1		5.00	15	75.00
<i>Quercus agrifolia</i>	Coast Live Oak	20	0	1		1.00	10	10.00
<i>Salix exigua</i>	Narrow-leaf Willow	5	0		3' lengths	1.00	50	50.00
<i>Salix laevigata</i>	Red Willow	10	0		3' lengths	1.00	50	50.00
<i>Salix lasiolepis</i>	Arroyo Willow	10	0		3' lengths	1.00	50	50.00
<i>Sambucus mexicana</i>	Mexican Elderberry	15	4	1		20.00	4	80.00
<i>Umbellularia californica</i>	California Bay	20	0	1		1.00	5	5.00
SHRUBS								
<i>Baccharis salicifolia</i>	Mule Fat	4	0	1	3' lengths	1.00	50	50.00
<i>Eriogonum cinereum</i>	Ashleaf Buckwheat	4	6	1		15.00	6	90.00
<i>Eriogonum fasciculatum</i>	CA Buckwheat	4	8	1		4.00	16	64.00
<i>Malosma laurina</i>	Laurel Sumac	6	2	1		15.00	4	60.00
<i>Rhus integrifolia</i>	Lemonadeberry	6	2	1		20.00	4	80.00
<i>Salvia mellifera</i>	Purple sage	4	2	1		24.00	4	96.00
PERRENIALS								
<i>Encelia californica</i>	CA Bush Sunflower	4	2	1		24.00	4	96.00
<i>Eriophyllum confertiflorum</i>	Golden Yarrow	4	2	1		24.00	4	96.00
<i>Lotus scoparius</i>	Deer Weed		4			15.00	8	120.00
<i>Lupinus succulentus</i>	Arroyo Lupine		8			9.00	16	144.00
<i>Mimulus aurantiacus</i>	Stickey Monkey Flower	6	1	1		25.00	3	75.00
<i>Oenothera hookeri</i>	Evening Primrose		2			12.00	4	48.00
GRASSES								
<i>Elymus glaucus</i>	Western Wild Rye		8			8.00	8	64.00
<i>Nassella pulchra</i>	Purple Needlegrass			plug		1.00	50	50.00

SITE PROTECTION

Signage

Initially site protection should consist of “Area Closed Habitat Restoration In Progress” signs along the creek bank and road. Should any significant damage occur to the site from vandalism or visitor usage, site fencing should be installed.

Site Delineation

Delineation of all habitat types and areas of specific restoration action included in the restoration document and plan drawings must be finalized with the State Park ecologist through on-site meetings prior to the start of work. Delineated habitats and areas of specific activities are subject to change in order to better protect any sensitive natural resources.

Avoidance of Impact to Sensitive Resources

Although the Rodeo Grounds Berm area is home to several special status species, due to the highly disturbed and developed nature of the site, no sensitive, candidate, or special status species are expected to depend on the project site to such a degree that the temporary project restoration window will have a significant effect on their survival or general behavior. All construction activity will take place outside of migration season (December – June) for federally listed southern steelhead trout, spring breeding season of amphibians, and spring nesting for raptors and migratory birds.

- Raptor trees: Eucalyptus removal on the berm will occur in the summer and fall months and should not impact any potentially nesting raptors. Surveys will be conducted by a State Park Resource Ecologist to identify any nesting occurrences prior to removal. If raptors are nesting, those trees will be left in place until young have fledged. The project area is closely associated with many existing sycamore and willow trees, which provide alternate perching and nesting opportunities.
- Disturbed upland/coastal sage scrub: In the region identified as disturbed upland/coastal sage scrub, grading will be kept to the minimum extent necessary. Herbicide use will be kept to a minimum, involving localized and discrete application if necessary.
- Stream Channel and Adjacent Riparian: Herbicide use will be kept to a minimum, involving localized and discrete application of a wetland-safe variety (e.g. Rodeo).
- Landform work associated with the berm removal and stream channel restoration will not take place during the rainy season and any flow will be suitably diverted during the berm excavation if the channel is not dry.

Regulatory Agency Compliance, and Encroachment Permits

The California Department of Parks and Recreation has been working with the CA Coastal Commission, the CA Department of Fish and Game, CA Regional Water Quality Control Board, and Los Angeles County Department of Regional Planning to acquire all foreseeable necessary environmental permits. These permits are in the process of being issued.

MONITORING

Methodology

Restoration monitoring should occur annually in May and September, according to CDFG standards. Six permanent vegetation transects should be installed and benchmarked to adequately represent the conditions of the revegetated areas, including along the toe of the slope, within the former berm footprint and the immediately adjacent floodplain area to the west. See Figure 2 for delineation of these areas. The initial condition data will be collected following site preparation and initial planting to establish a baseline. Each transect should consist of 25 meters oriented to provide adequate representation of the revegetated area. Sampling should consist of enumerating the number of individuals of each species, and the amount of canopy cover (length) of each species encountered along the tape. Height of tree species will also be measured. Bare ground should also be enumerated in this manner. Dead exotic plant material should be enumerated in the surveys.

The total number of individuals of each species will be tallied, and the percent of cover can then be calculated for each species by adding up the total number of centimeters or meters covered by each species along the transect and dividing this by 25 meters. Since there can be both on ground and above ground cover (trees), the total amount of cover for the transect can potentially be greater than 100%. These cover values will then be compared to the target performance criteria.

Note: Alternate monitoring methodology may be employed if reviewed and agreed upon with the State Park representative ecologist.

Photodocumentation

Permanent benchmarks will be established and photographs taken from a consistent orientation and field-of-view twice yearly, in May and September.

Monitoring Report

The annual monitoring report is due to be submitted to CDFG by January 1 of each calendar year. It should consist of a spreadsheet detailing the total number of individuals of each species, average height of tree species, and percent canopy cover values of individual species and growth-form categories along with a brief memo describing the results of the sampling. The report should provide recommendations for any actions needed to achieve or exceed the target success criteria set for each year. The report shall also include recommendations for actions needed to change or adapt the management strategy in order to meet the criteria, i.e., install additional plants of a particular species. Photographs should also be included. A final report must be submitted by June 2012 documenting the restoration process and evaluating achievement of the success criteria.

RESPONSIBLE ENTITIES

The California Department of Parks and Recreation, Angeles District, is responsible for developing the restoration and monitoring plan and acquiring and overseeing the contractor to

perform the restoration activities, maintenance, and monitoring. Restoration monitoring will be the responsibility of a contractor, with the Angeles District conducting additional oversight monitoring until June 2012. The contractor shall provide yearly monitoring reports to the Angeles District, who will then ensure that the success criteria are met.

REFERENCES

California Native Plant Society. 1992. Recommended List of Native Plants for Landscaping in the Santa Monica Mountains. Los Angeles – Santa Monica Mountains Chapter.

Hickman, James. Editor. 1993. The Jepson Manual: Higher Plants of California. University of California Press, Berkeley.

Peregrin, Chris. 2005. Wetland Delineation at Lower Topanga Canyon. Draft letter to Superintendent, Angeles District, Department of Parks and Recreation, May 2, 2005.

Peregrin, Chris. 2005. Vegetation Mapping in Preparation for Lower Topanga Canyon General Plan.. Draft letter to Suzanne Goode, Angeles District, Department of Parks and Recreation, May 2, 2005.

Raven, Peter H., H.J. Thompson, and B.A. Prigge. 1986. Flora of the Santa Monica Mountains, California. Second Edition. Southern California Botanists Special Publication No. 2.

S and S Seeds. 2005. Seed planting density recommendations. Ben Miller, Personal Communication.

Wishner, Carl. 2005. Vascular Plants Observed at Rodeo Grounds Restoration Area. April 20, 2005

APPENDIX A

Vascular Plants Observed at Rodeo Grounds Restoration Area

Carl Wishner, Envicom, Inc.

April 20, 2005

GROUP Family <i>Scientific Name</i>	Common Name
FERNS AND ALLIES	
Equisetaceae	
<i>Equisetum telmateia braunii</i>	Giant horsetail
CONIFERS	
Pinaceae	
* <i>Cedrus deodara</i>	Deodar cedar
* <i>Pinus</i> spp.	Pine
Podocarpaceae	
* <i>Podocarpus</i> sp.	Podocarp
FLOWERING PLANTS -- DICOTS	
Aizoaceae	
* <i>Carpobrotus edulis</i>	Hottentot-fig
Anacardiaceae	
<i>Malosma laurina</i>	Laurel leaf sumac
<i>Rhus integrifolia</i>	Lemonade berry
Apiaceae	
* <i>Conium maculatum</i>	Poison hemlock
* <i>Foeniculum vulgare</i>	Fennel
Apocynaceae	
* <i>Nerium oleander</i>	Oleander
* <i>Vinca major</i>	Greater periwinkle
Araliaceae	
* <i>Hedera</i> sp.	Ivy
Asteraceae	
<i>Ambrosia psilostachya</i>	Western ragweed
<i>Artemisia douglasiana</i>	Mugwort
<i>Baccharis salicifolia</i>	Mule fat
<i>Brickellia californica</i>	California brickellbush
* <i>Centauria melitensis</i>	toçalote
* <i>Conyza bonariensis</i>	Buenos Aires horseweed
<i>Conyza canadensis</i>	Horseweed
* <i>Chamomilla suaveolens</i>	Pineapple weed
* <i>Delairea odorata</i>	Cape-ivy
* <i>Hypochaeris glabra</i>	Smooth cat's-ear
<i>Malacothrix saxatilis tenuifolia</i>	Cliff-aster
* <i>Picris echioides</i>	Bristly ox-tongue
* <i>Sonchus asper</i>	Prickly sow-thistle
* <i>Taraxacum officinale</i>	Dandelion

<i>Venegasia carpesioides</i>	Canyon sunflower
<i>Xanthium strumarium</i>	Cocklebur
Betulaceae	
<i>Alnus rhombifolia</i>	White alder
Brassicaceae	
* <i>Brassica nigra</i>	Black mustard
* <i>Hirschfeldia incana</i>	Hoary mustard
* <i>Lobularia maritima</i>	Sweet alyssum
* <i>Raphanus sativus</i>	Wild radish
* <i>Sisymbrium officinale</i>	Hedge-nettle
* <i>Sisymbrium orientale</i>	Oriental mustard
Cactaceae	
* <i>Opuntia ficus-indica</i>	Tuna
Caryophyllaceae	
* <i>Stellaria media</i>	Common chickweed
Chenopodiaceae	
<i>Chenopodium ambrosioides</i>	Mexican-tea
Convolvulaceae	
<i>Calystegia macrostegia cyclostegia</i>	Chaparral honeysuckle
Cucurbitaceae	
<i>Marah macrocarpus</i>	Wild cucumber
Datisceae	
<i>Datisca glomerata</i>	Durango root
Euphorbiaceae	
* <i>Euphorbia terracina</i>	Terracina spurge
Fabaceae	
<i>Lupinus succulentus</i>	Arroyo lupine
<i>Medicago polymorpha</i>	Bur-clover
* <i>Melilotus indicus</i>	Yellow sweetclover
* <i>Spartium junceum</i>	Spanish broom
* <i>Trifolium hirtum</i>	Rose clover
Hydrophyllaceae	
<i>Phacelia grandiflora</i>	Large-flowered phacelia
Lamiaceae	
* <i>Mentha</i> sp.	mint
<i>Salvia mellifera</i>	Black sage
Malvaceae	
* <i>Hibiscus</i> sp.	Hibiscus
* <i>Lavatera cretica</i>	Crete weed
Moraceae	
* <i>Ficus carica</i>	Edible fig
Myoporaceae	
* <i>Myoporum laetum</i>	Myoporum
Myrtaceae	
* <i>Eucalyptus</i> spp.	Gum

Nyctaginaceae	
* <i>Bougainvillea</i> sp.	Bougainvillea
Oleaceae	
* <i>Ligustrum</i> sp.	Privet
Oxalidaceae	
* <i>Oxalis pes-caprae</i>	Bermuda-buttercup
Plantaginaceae	
* <i>Plantago lanceolata</i>	Ribwort
* <i>Plantago major</i>	Common plantain
Plumbaginaceae	
* <i>Plumbago capensis</i>	Cape plumbago
Polygonaceae	
<i>Eriogonum cinereum</i>	Ashy-leaf buckwheat
* <i>Rumex crispus</i>	Curly dock
<i>Rumex</i> sp.	Dock
Rhamnaceae	
<i>Ceanothus spinosus</i>	Greenbark ceanothus
Rosaceae	
* <i>Chaenomeles</i> sp.	Fruiting quince
<i>Rosa californica</i>	California rose
* <i>Rosa</i> sp. (cultivated)	Rose
Rutaceae	
* <i>Citrus</i> sp.	Citrus
Salicaceae	
<i>Salix exigua</i>	Narrow-leaf willow
<i>Salix laevigata</i>	Red willow
<i>Salix lasiolepis</i>	Arroyo willow
Scrophulariaceae	
* <i>Veronica anagallis-aquatica</i>	Water speedwell
Simaroubaceae	
* <i>Ailanthus altissima</i>	Tree-of-heaven
Solanaceae	
* <i>Nicotiana glauca</i>	Tree tobacco
Tropaeolaceae	
* <i>Tropaeolum majus</i>	Garden nasturtium
FLOWERING PLANTS -- MONOCOTS	
Agavaceae	
* <i>Agave americana</i>	Century plant
* <i>Yucca</i> sp. (soft tip)	Soft-tip yucca
Arecidae	
*Undetermined (? <i>Jacobeia</i>)	Palm
<i>Washingtonia</i> sp.	Fan palm
Cyperaceae	
<i>Cyperus eragrostis</i>	Tall sedge

<i>*Cyperus involucratus</i>	Umbrella sedge
Iridaceae	
<i>Sisyrinchium bellum</i>	Blue-eyed-grass
Juncaceae	
<i>Juncus patens</i>	Common rush
Poaceae	
<i>*Avena barbata</i>	Slender wild oat
<i>*Bromus catharticus</i>	Rescue grass
<i>*Bromus diandrus</i>	Ripgut grass
<i>*Bromus hordeaceus</i>	Soft-chess
<i>*Bromus madritensis rubens</i>	Red brome
<i>*Ehrharta erecta</i>	Ehrharta
<i>*Festuca arundinacea</i>	Reed fescue
<i>*Hordeum murinum</i>	Foxtail barley
<i>Paspalum distichum</i>	Paspalum
<i>*Piptatherum miliaceum</i>	Mountain-millet
<i>*Stenotaphrum secundatum</i>	St. Augustine grass

* denotes introduced species

Appendix A, Table 1
Topanga State Park Lower Topanga Canyon Acquisition Final Interim Management Plan
and Environmental Impact Report
Sensitive and Listed Plants
Known to Occur in Topanga Canyon

Scientific Name	Common Name	Status
<i>Astragalus brauntonii</i>	Braunton's milkvetch	FE; List 1B, 3-3-3
<i>Astragalus pynostachyus</i> var. <i>lanosissimus</i>	Ventura Marsh milkvetch	FE;SE; List 1B, 3-3-3
<i>Atriplex parishii</i>	Parish's brittle scale	List 1B, 3-3-2
<i>Calochortus plummerae</i>	Plummer's mariposa lily	List 1B, 2-2-3
<i>Camissonia lewisii</i>	Lewis' evening primrose	List 3, ??-2
<i>Comarostaphylis diversifolia</i> ssp. <i>planifolia</i>	summer holly	Locally rare
<i>Dichondra occidentalis</i>	western dichondra	List 4, 1-2-1
<i>Dudleya cymosa</i> var. <i>ovatifolia</i>	Santa Monica Mountains dudleya	FT; List 1B, 3-2-3
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	List 1B, 2-3-2
<i>Mucronea californica</i>	California spineflower	List 4, 1-2-3
<i>Nama stenocarpum</i>	mud nama	List 2, 3-2-1
<i>Polygala corunta</i> var. <i>fishae</i>	Fish's milkwort	List 4, 1-1-2
<i>Sidalcea neomexicana</i>	salt spring checkerbloom	List 2, 2-2-1
See Appendix A, Tables 3, 4, and 5 for listing code definitions Information compiled from CNDDDB records (2001), RCDSMM reports on watershed and canyon surveys, species observations by State Park ecologists, and Topangaonline.com.		

Appendix A, Table 2
Topanga State Park Lower Topanga Canyon Acquisition Final Interim Management Plan
and Environmental Impact Report Sensitive and Listed Animals
Known to Occur in Topanga Canyon

Scientific Name	Common Name	Status
Fish		
<i>Gila orcutti</i>	arroyo chub	FSC;CSC; FS sensitive
<i>Eucycloglobius newberryi</i>	tidewater goby	FE; Critical habitat designated
<i>Oncorhynchus mykiss irideus</i>	southern steelhead trout	FE, CSC; Critical habitat designated
Amphibians		
<i>Taricha torosa torosa</i>	California newt	CSC
Reptiles		
<i>Anniella pulchra pulchra</i>	silvery legless lizard	CSC
<i>Clemmys marmorata pallida</i>	southwestern pond turtle	FSC; CSC; DFG Protected; FS sensitive; BLM sensitive
<i>Cnemidophorus tigris multiscutatus</i>	coastal western whiptail	FSC
<i>Lampropeltis zonata pulchra</i>	San Diego Mountain kingsnake	FSC; CSC; DFG Protected; FS sensitive
<i>Lichamura trivirgata</i>	rosy boa	FSC; BLM sensitive
<i>Phrynosoma coronatum blainvillei</i>	San Diego coast horned lizard	FSC;CSC; DFG protected (full species); FS sensitive
<i>Phrynosoma coronatum frontale</i>	California horned lizard	CSC; DFG protected (full species); BLM sensitive
<i>Salvadora hexalepis virguleta</i>	coast patch-nosed snake	FSC; CSC
<i>Thamnopsis hammondi</i>	two-striped garter snake	CSC; DFG Protected; FS sensitive; BLM sensitive
Mammals		
<i>Euderma maculatum</i>	spotted bat	FSC; CSC; BLM sensitive; WBWG High Priority
<i>Eumops perotis</i>	western mastiff bat	FSC; CSC; BLM sensitive; WBWG High Priority
Birds		
<i>Accipiter cooperi</i>	Cooper's hawk	CSC
<i>Aquila chrysaetos</i>	Golden eagle	CSC
<i>Asio otus</i>	Long-eared owl	CSC
<i>Circus cyaneus</i>	Northern harrier	CSC
<i>Dendroica petechia</i>	Yellow warbler	CSC
<i>Icteria virens</i>	Yellow-breasted chat	FWS: MNBMC; PIF; Audubon Ca WL
<i>Lanius ludovicianus</i>	Loggerhead shrike	FSC; CSC; FWS: MNBMC
<i>Pelecanus erythrorhynchos</i>	American white pelican	CSC; Audubon Ca WL
<i>Pelecanus occidentalis</i>	Brown pelican	FE; DFG Fully protected
Insects		
<i>Danaus plexippus</i>	monarch butterfly	CSC
<i>Coelus globosus</i>	globose dune beetle	FSC
<i>Neduba longipennis</i>	Santa Monica shieldback katydid	CR; FSC
See Appendix A, Tables 3, 4, and 5 for listing code definitions.		
Information compiled from CNDDDB records (2001), RCDSMM reports on watershed and canyon surveys, species observations by State Park ecologists, and Topangaonline.com.		

Appendix A, Table 3
Topanga State Park Lower Topanga Canyon Acquisition Final Interim Management Plan
and Environmental Impact Report
Plant and Animal Sensitivity Guidelines
State and Federal Listed Species Designations

*FE	Federal Endangered species	Listed as federally Endangered under the Federal Endangered Species Act (ESA), 1973 as amended. Taxa are in danger of becoming extinct throughout all or a significant portion of their range.
FT	Federal Threatened species	Listed as federally Threatened under the Federal Endangered Species Act (ESA). Taxa, which are likely to become endangered in the foreseeable future in the absence of special protection.
FP	Federally proposed for listing	Taxa that are Proposed in the Federal Register to be listed as Endangered or Threatened under Section 4 of the ESA.
*FSC	Federal Species of Special Concern	The United State Fish and Wildlife Service (FWS) suggests that this term, because it holds no official status under the Federal ESA, be considered as a "term-of-art" that describes the entire realm of taxa whose conservation status may be of concern to the Service.
*SE	State listed Endangered	Native California taxa, which are in serious danger of becoming extinct throughout all or a significant portion of its range. Listed as Endangered under the California Endangered Species Act (CESA).
ST	State listed Threatened	Native California taxa, which although not presently threatened with extinction, is likely to become an Endangered species in the foreseeable future in the absence of special protection and management efforts. Listed as Threatened under the CESA.
SR	State listed Rare	Native California taxa, which although not presently threatened with extinction, is likely to become a Threatened species in the foreseeable future in the absence of special protection and management efforts. Listed as Rare under the CESA.
SC	State Candidate for listing as Endangered, Threatened, or Rare.	Native California taxa, which are not presently threatened with extinction. However, the species, subspecies or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens.
CSC	California Species of Special Concern	The California Department of Fish and Game (DFG) provides a list of those species that may not warrant an official listing under the CESA, but do warrant watching closely due to declining habitat availability or a restricted distribution in California.
*DFG	California Fully protected or Protected species	Fully protected species may not be possessed or taken without a permit from the Fish and Game Commission and/or the California Department of Fish and Game.
<p>*FE: The official Federal listing of Endangered, Threatened, or Proposed animals is published in the Federal Register, 50 CFR 17.11.</p> <p>*FSC: Plants and animals with the FSC status were once compiled in the Category 2 (C2) Candidate list. The C2 designation was reclassified and eliminated in 1996 (61 FR 7457; February 28, 1996) and many of the species on that list were then defined under the term "Federal Species of Concern." However this too has been eliminated by the Service and is only included here following the DFG lead as provided for informational purposes only. California State Parks believes that using these species in sensitive species list it furthers our effort towards natural resource protection.</p> <p>*SE: The official California listing of Endangered and Threatened for animals is contained in the California Code of Regulations, Title 14; Section 670.5. State listing is pursuant to §1904 (Native Plant Protection Act of 1977) and §2074.2 and 2075.5 (California Endangered Species Act of 1984) of the Fish and Game Code, relating to listing of Endangered, Threatened, and Rare species of plants and animals.</p> <p>*DFG: Information on Fully protected species can be found in the Fish and Game Code (birds at §3511, reptiles and amphibians at §5050, and fish at §5515). Information on Fully protected fish can be found in the Fish and Game Code of Regulations, Title 14, Division 1, Chapter 2, Article 4, §5.93. Information on native amphibians can be found in Chapter 5, §41 and Protected native reptiles at §42.</p>		

Appendix A, Table 4
Topanga State Park Lower Topanga Canyon Acquisition Final Interim Management Plan
and Environmental Impact Report
Plant and Animal Sensitivity Guidelines
Additional State, Federal, Local Species Conservation and Sensitivity Designations

BLM sensitive	The Bureau of Land Management (BLM) defined sensitive species	BLM defines sensitive species as “ those species that are under (1) status review by the Service; or (2) whose number are declining so rapidly that Federal listing may become necessary; or (3) with typically small and widely dispersed populations; or (4) those inhabiting ecological refugia or other specialized or unique habitats.”
FS sensitive	Forest Service (FS) defined sensitive species.	The FS participates in recovery programs with DFG and the FWS to restore declining populations and protect habitats. A FS “sensitive species” programs identifies and manages species whose populations are declining.
FWS: MNBMC	FWS Migratory Nongame Birds of Management Concern	Species of migratory nongame birds that are considered to be of concern in the US because of (1) documented or apparent population declines, (2) small or restricted populations or (3) dependence on restricted or vulnerable habitats.
Audubon: Cal WL	The Audubon Society's state WatchList for California.	The state WatchLists were developed using the Partners in Flight (PIF) data and prioritization process. The state lists are an additional tool designed to help conserve local bird populations.
PIF WatchList	Partners in Flight (PIF) WatchList for California	PIF compiles a watch list, which identifies North American bird species that are faced with population decline, limited geographic range, and/or threats such as habitat loss on their breeding and wintering grounds.
WBWG high priority	Western bat working group (WBWG)	The WBWG designates species as High Priority that are imperiled or are at high risk of imperilment based on available information on distribution, status, ecology, and known threats.

Appendix A, Table 5
Topanga State Park Lower Topanga Canyon Acquisition Final Interim Management Plan
and Environmental Impact Report
Plant and Animal Sensitivity Guidelines
California Native Plant Society (CNPS) Sensitivity Lists and Rarity (R), Endangered (E),
and Distribution (D) [R-E-D] Codes

List 1A	Species presumed extinct in California
List 1B	Plants rare, threatened, or endangered in California and elsewhere
List 2	Plants rare, threatened or endangered in California, but more common elsewhere
List 3	Plants about which more information is needed
List 4	Plants of limited distribution. A watch list for species that need to be monitored.
Rarity (R)	
1	Rare but found in sufficient numbers and distributed widely enough that the potential for extinction or extirpation is low at this time.
2	Distributed in a limited number of occurrences, occasionally more if each occurrence is small
3	Distributed in one to several highly restricted occurrences, or present in such small numbers that it is seldom reported.
Endangered	
1	Not Endangered
2	Endangered in a portion of its range
3	Endangered throughout its range
Distribution	
1	More or less widespread outside California
2	Rare outside California
3	Endemic to California

RODEO GROUNDS BERM RESTORATION
FIELD NOTES

WETLANDS DELINEATION SURVEY

20 April 2005

Revised
7 December 2005

Observers:

Josh Burnam and Ken Wong, US Army Corps of Engineers
Carl Wishner, Envicom
Rosi Dagit, RCD of the Santa Monica Mountains

Objective: Delineate the waters of the US and any jurisdictional wetlands within the proposed Rodeo Grounds Berm Restoration project area.

Location: The Rodeo Grounds Road Berm is located on Topanga Creek, approximately 2,500 feet upstream from the Pacific Ocean, in Topanga Creek State Park, Topanga, CA.

Background: The berm was constructed between the late 1960's and 1980. According to local informants, the fill materials were obtained from the re-paving of Lincoln Blvd in 1969 and from along Topanga Canyon Blvd. following the 1980 flood.

The berm extends roughly north to south, forming a barrier to natural flood inundation patterns and has re-directed the flow of the creek channel to the east. Elevation within the project area remains flat, however a large area of sediment buildup causes a slight rise in channel elevation upstream of the berm.

The berm is approximately 1,000 feet long and varies in width from 40-100 feet. Portions of the banks are covered with concrete covered riprap. The surface area of the berm is estimated to be 1.8 acres (80,000 square feet). The volume of the berm is estimated to be 19,000 cubic yards. Preliminary soils characterization found that the upper 8 feet in the north section of the berm qualifies as CA Hazardous Waste for lead contamination.

Restoration Proposal: In order to restore the natural creek hydrology, provide access to the entire floodplain, and restore access and habitat for endangered southern steelhead trout, the landowner, CA Department of Parks and Recreation (CDPR) has determined that removal of the berm is necessary.

Funding from the CA Coastal Conservancy has been obtained to develop the Mitigated Negative Declaration (MND) documents and permit applications related to the berm removal and restoration.

In order to complete these documents, the areas of waters of the US, jurisdictional wetlands and any necessary mitigation requirements are needed.

Site Observations: We started at the south end of the berm where it crosses Topanga Creek at an instream crossing. We walked along the berm to the north end. Due to the installation of the berm and impacts related to the structures protected by the berm, it was felt that the likelihood of any wetlands remaining to the west of the berm was slim. Efforts were thus focused on the east side along the berm bank, within the creek channel and over to the eastern creek bank.

Rosi offered to provide copies of the in-stream habitat mapping data collected since 2001 to document previous conditions of this reach. This data is being compiled for incorporation into the MND and documents that the channel is usually dry, with only sub-surface flows for much of the previous 4 years.

Since October 2004, the Topanga Creek Watershed received approximately 62 inches of rain, raising the creek level and causing above normal flows. This is the highest precipitation ever recorded for this area since the 1920's.

We hiked to the north end of the large *Arundo* patch on the northwest bank and started our investigation. Ken and Josh tried digging into the banks, but found mostly cobble and gravel beds, with no hydric soils.

Josh noted that some riffle-pool complexes currently present might qualify as a special aquatic site under the Clean Water Act.

We crossed to the east side of the channel, and found the same sediment mix, with no hydric soils.

Hiking back to the upstream end of the berm, we concentrated on examining the banks on the east side, given that the berm is concrete on the west bank.

Soils at all sites were predominantly coarse grain materials with evidence of oxidized root channels and organic deposits scattered throughout. True hydric soils (evidence of redox, sulfidic odor and gleying) adjacent to a willow/sycamore cover were noted on the east bank, between the wetted channel edge and the elevated sand deposit. Theoretically, the root complexes may have retained fine sediments during the prior storm events, whereas more exposed sections of the channel may have been scoured. This narrow strip was marked Site 1 and a field survey form completed. The vegetation development on the upland sand deposit was limited to *Arundo donax*. Rosi agreed to return and try to GPS the perimeter of the willow thicket

(*Salix lasiolepis*), in order to estimate the area of the marginal wetland. Carl noted that the vegetation would be characterized as riparian hydrophytic habitat.

Removing the large *Arundo* patch with heavy equipment was discussed as a possible mitigation measure, in case temporary construction impacts to wetlands occurred at the site.

Continuing downstream in a small side channel along the east bank, we found another location with hydric soils, again associated with a willow thicket. This was marked as Site 2 and a survey form completed.

The main channel did not have any wetland development in this reach.

We continued down the small side channel to where it re-connected with the main channel at a small cascade. In this segment of the creek, the east bank is lined with concrete debris, with some on the west side as well. Willows (*Salix lasiolepis*) and mulefat (*Baccharis salicifolia*) are the dominant vegetation, although we did note some wetland species, including cattails (*Typha latifolia*) (OBL), *Cyperus alternifolius*, (non-native) (OBL), *Datisca glomerata* (FACW) and Alder (*Alnus rhombifolia*) (FACW). The native, obligate (OBL) wetland grass *Paspalum distichum* was also found.

This entire segment was tested for hydric soils. Again, these soils exhibited some wetlands features, including organic deposits and oxidized root channels, but material was predominantly coarse-grained. Initially, we designated the first location below the cascade to have some hydric soil characteristics as Site 3, but on continuing downstream, we found that this site probably extended down to the bank below the mature cottonwood tree buried in the berm at the south end. We delineated this site as wetland due to the obligate plant species present in combination with the preponderance of other evidence.

We discussed ways to calculate area of wetlands, and agreed that it made sense to define the two separate channels as waters of the US, with the east bank segments and the small side channel along the western bank described as marginal wetlands. Carl marked these on the aerial photo and took it back to the office to make the calculations.

At this point, Josh and Ken left, and Carl and Rosi explored the area behind the berm to see if there was anything else that might qualify as a wetland. There was not.

WETLANDS AFFECTED

Thanks to the efforts of Jack Blok, cartographer at Envicom, and Carl's mapping, it appears that the following acreages are involved:

1.8 acres of fill removal and restoration of the berm footprint

1.5 acres of waters of the US are included in the project area slightly upstream to the southern end of the berm

0.3 acres of the project area qualifies as marginal wetlands. The marginal wetlands are broken up into two larger segments (.29 acres total) along the eastern bank of the channel and one smaller segment (0.01 acres) west of the channel along the berm.

The calculation of the area of floodplain behind the berm to be restored is not yet complete.

ATTACHMENTS:

1. Survey forms for Sites 1-4
2. List compiled by Carl Wishner for species noted on or within the berm restoration area
3. Photographs of the sites
4. Aerial Map showing site locations and boundaries of waters of US and marginal wetlands

Notes prepared by Rosi Dagit, 25 April 2005.

Reviewed and approved by Josh Burnam, Ken Wong and Carl Wishner.

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>Tupacigah Legn Creek #1</u> RODENT ^{GROUP} RETURN Applicant/Owner: <u>CDPR</u> Investigator: <u>JOEL BUANAM + KEN WINE</u>	Date: <u>4/20/05</u> County: <u>LA</u> State: <u>CA</u>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential Problem Area? <input type="radio"/> Yes <input type="radio"/> No (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: _____

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Arundo donax</u>			9. _____		
2. _____			10. _____		
3. _____			11. _____		
4. _____			12. _____		
5. _____			13. _____		
6. _____			14. _____		
7. _____			15. _____		
8. _____			16. _____		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: _____

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input checked="" type="checkbox"/> Water Marks <input checked="" type="checkbox"/> Drift Lines <input checked="" type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	
Remarks: _____	

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>Rodero Grounds Basin Top Arroyo Creek</u> Applicant/Owner: <u>CDPR</u> Investigator: <u>JOSH BULWAIN + KEN WONG</u>	Date: <u>4/20/05</u> County: <u>LA</u> State: <u>CA</u>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the area a potential Problem Area? <input checked="" type="radio"/> Yes <input type="radio"/> No (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: _____

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. _____	_____	_____	9. _____	_____	_____
2. _____	_____	_____	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). _____

Remarks: _____

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>0</u> (in.) Depth to Free Water in Pit: <u>12</u> (in.) Depth to Saturated Soil: <u>3</u> (in.)	
Remarks: _____	

SOILS

Map Unit Name (Series and Phase): _____		Drainage Class: _____	
Taxonomy (Subgroup): _____		Field Observations Confirm Mapped Type? Yes No	
Profile Description:			
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)
0-12"		2.5YR 3/2	2.5YR 3/2
12-15" ?			
Hydric Soil Indicators:			
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input checked="" type="checkbox"/> Reducing Conditions <input type="checkbox"/> Gleyed or Low-Chroma Colors		<input type="checkbox"/> Concretions <input checked="" type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input checked="" type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)	
Remarks: Cannot penetrate 12-15" / Debris in sandy soils			

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	(Circle)
Wetland Hydrology Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	
Hydric Soils Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	
Is this Sampling Point Within a Wetland? Yes No	
Remarks:	

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>30000 Grounds Bar, Tappan Creek</u> Applicant/Owner: <u>COPI</u> Investigator: <u>JOSIA BURMAN + KEN WONG</u>	Date: <u>4/20/05</u> County: <u>LA</u> State: <u>CA</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the area a potential Problem Area? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: _____

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. _____	_____	_____	9. _____	_____	_____
2. _____	_____	_____	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: _____

HYDROLOGY

<p><input type="checkbox"/> Recorded Data (Describe in Remarks):</p> <p style="margin-left: 20px;"><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p style="margin-left: 20px;"><input type="checkbox"/> Aerial Photographs</p> <p style="margin-left: 20px;"><input type="checkbox"/> Other</p> <p><input type="checkbox"/> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p>Depth of Surface Water: <u>0</u> (in.)</p> <p>Depth to Free Water in Pit: <u>4</u> (in.)</p> <p>Depth to Saturated Soil: <u>2</u> 4 (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p style="margin-left: 20px;"><input type="checkbox"/> Inundated</p> <p style="margin-left: 20px;"><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</p> <p style="margin-left: 20px;"><input type="checkbox"/> Water Marks</p> <p style="margin-left: 20px;"><input type="checkbox"/> Drift Lines</p> <p style="margin-left: 20px;"><input type="checkbox"/> Sediment Deposits</p> <p style="margin-left: 20px;"><input type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p style="margin-left: 20px;"><input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</p> <p style="margin-left: 20px;"><input type="checkbox"/> Water-Stained Leaves</p> <p style="margin-left: 20px;"><input type="checkbox"/> Local Soil Survey Data</p> <p style="margin-left: 20px;"><input type="checkbox"/> FAC-Neutral Test</p> <p style="margin-left: 20px;"><input type="checkbox"/> Other (Explain in Remarks)</p>
<p>Remarks: _____</p>	

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>J. Pinedo Grande Dam, Topanga</u> Applicant/Owner: <u>CDPR</u> Investigator: <u>JOSEPH BURHAM + KEN WONG</u>	Date: <u>4/20/05</u> County: <u>LA</u> State: <u>CA</u>						
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is the area a potential Problem Area? (If needed, explain on reverse.)	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><input checked="" type="radio"/> Yes</td> <td style="text-align: center;"><input type="radio"/> No</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="radio"/> Yes</td> <td style="text-align: center;"><input type="radio"/> No</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="radio"/> Yes</td> <td style="text-align: center;"><input type="radio"/> No</td> </tr> </table> Community ID: _____ Transect ID: _____ Plot ID: _____	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Yes	<input type="radio"/> No
<input checked="" type="radio"/> Yes	<input type="radio"/> No						
<input checked="" type="radio"/> Yes	<input type="radio"/> No						
<input checked="" type="radio"/> Yes	<input type="radio"/> No						

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>S. lasiolepis</u>	<u>S/T</u>		9. _____		
2. <u>B. glandulosa</u>	<u>S/T</u>		10. _____		
3. <u>A. rhombifolia</u>	<u>S/T</u>		11. _____		
4. _____			12. _____		
5. _____			13. _____		
6. _____			14. _____		
7. _____			15. _____		
8. _____			16. _____		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: _____

HYDROLOGY

<p><input type="checkbox"/> Recorded Data (Describe in Remarks):</p> <p style="margin-left: 20px;"><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p style="margin-left: 20px;"><input type="checkbox"/> Aerial Photographs</p> <p style="margin-left: 20px;"><input type="checkbox"/> Other</p> <p><input type="checkbox"/> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p>Depth of Surface Water: <u>0</u> (in.)</p> <p>Depth to Free Water in Pit: <u>3</u> (in.)</p> <p>Depth to Saturated Soil: <u>3</u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input checked="" type="checkbox"/> Inundated</p> <p><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</p> <p><input type="checkbox"/> Water Marks</p> <p><input checked="" type="checkbox"/> Drift Lines</p> <p><input type="checkbox"/> Sediment Deposits</p> <p><input type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</p> <p><input type="checkbox"/> Water-Stained Leaves</p> <p><input type="checkbox"/> Local Soil Survey Data</p> <p><input type="checkbox"/> FAC-Neutral Test</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
<p>Remarks: _____</p>	

Vascular Plants Observed at Rodeo Grounds Restoration Area
April 20, 2005

GROUP	Family	Scientific Name	Common Name
FERNS AND ALLIES			
Equisetaceae			
		<i>Equisetum telmateia braunii</i>	horsetail
CONIFERS			
Pinaceae			
		* <i>Cedrus deodara</i>	Deodar cedar
		* <i>Pinus</i> spp.	pine
Podocarpaceae			
		* <i>Podocarpus</i> sp.	Podocarp
FLOWERING PLANTS -- DICOTS			
Aizoaceae			
		* <i>Carpobrotus edulis</i>	Hottentot-fig
Anacardiaceae			
		<i>Malosma laurina</i>	Laurel leaf sumac
		<i>Rhus integrifolia</i>	Lemonade berry
Apiaceae			
		* <i>Conium maculatum</i>	Poison hemlock
		* <i>Foeniculum vulgare</i>	Fennel
Apocynaceae			
		* <i>Nerium oleander</i>	Oleander
		* <i>Vinca major</i>	Greater periwinkle
Araliaceae			
		* <i>Hedera</i> sp.	ivy
Asteraceae			
		<i>Ambrosia psilostachya</i>	Western ragweed
		<i>Artemisia douglasiana</i>	mugwort
		<i>Baccharis salicifolia</i>	Mule fat
		<i>Brickellia californica</i>	California brickellbush
		* <i>Centaurea melitensis</i>	toçalote
		* <i>Coryza bonariensis</i>	Buenos Aires horseweed
		<i>Coryza canadensis</i>	Horseweed
		* <i>Chamomilla suaveolens</i>	Pineapple weed
		* <i>Delairea odorata</i>	Cape-ivy
		* <i>Hypochaeris glabra</i>	Smooth cat's-ear
		<i>Malacothrix saxatilis tenuifolia</i>	Cliff-aster
		* <i>Picris echioides</i>	Bristly ox-tongue
		* <i>Sonchus asper</i>	Prickly sow-thistle
		* <i>Taraxacum officinale</i>	Dandelion
		<i>Venegasia carpesioides</i>	Canyon sunflower
		<i>Xanthium strumarium</i>	Cocklebur

Betulaceae	
<i>Alnus rhombifolia</i>	White alder
Brassicaceae	
* <i>Brassica nigra</i>	Black mustard
* <i>Hirschfeldia incana</i>	Hoary mustard
* <i>Lobularia maritima</i>	Sweet alyssum
* <i>Raphanus sativus</i>	Wild radish
* <i>Sisymbrium officinale</i>	Hedge-nettle
* <i>Sisymbrium orientale</i>	Oriental mustard
Cactaceae	
* <i>Opuntia ficus-indica</i>	Tuna
Caryophyllaceae	
* <i>Stellaria media</i>	Chickweed
Chenopodiaceae	
<i>Chenopodium ambrosioides</i>	Mexican-tea
Convolvulaceae	
<i>Calystegia macrostegia cyclostegia</i>	Chaparral honeysuckle
Cucurbitaceae	
<i>Marah macrocarpus</i>	Wild cucumber
Datisceae	
<i>Datisca glomerata</i>	Durango root
Euphorbiaceae	
* <i>Euphorbia terracina</i>	Terracina spurge
Fabaceae	
<i>Lupinus succulentus</i>	Arroyo lupine
<i>Medicago polymorpha</i>	Bur-clover
* <i>Melilotus indicus</i>	Yellow sweetclover
* <i>Spartium junceum</i>	Spanish broom
* <i>Trifolium hirtum</i>	Rose clover
Hydrophyllaceae	
<i>Phacelia grandiflora</i>	Large-flowered phacelia
Lamiaceae	
* <i>Mentha</i> sp.	mint
<i>Salvia mellifera</i>	Black sage
Malvaceae	
* <i>Hibiscus</i> sp.	Hibiscus
* <i>Lavatera cretica</i>	Crete weed
Moraceae	
* <i>Ficus carica</i>	Edible fig
Myoporaceae	
* <i>Myoporum laetum</i>	Myoporum
Myrtaceae	
* <i>Eucalyptus</i> spp.	gum
Nyctaginaceae	
* <i>Bougainvillea</i> sp.	Bougainvillea

Oleaceae	
* <i>Ligustrum</i> sp.	privet
Oxalidaceae	
* <i>Oxalis pes-caprae</i>	Bermuda-buttercup
Plantaginaceae	
* <i>Plantago lanceolata</i>	ribwort
* <i>Plantago major</i>	Common plantain
Plumbaginaceae	
* <i>Plumbago capensis</i>	Cape plumbago
Polygonaceae	
<i>Eriogonum cinereum</i>	Ashy-leaf buckwheat
* <i>Rumex crispus</i>	Curly dock
<i>Rumex</i> sp.	dock
Rhamnaceae	
<i>Ceanothus spinosus</i>	Greenbark ceanothus
Rosaceae	
* <i>Chaenomeles</i> sp.	Fruiting quince
<i>Rosa californica</i>	California rose
* <i>Rosa</i> sp. (cultivated)	rose
Rutaceae	
* <i>Citrus</i> sp.	citrus
Salicaceae	
<i>Salix exigua</i>	Narrow-leaf willow
<i>Salix laevigata</i>	Red willow
<i>Salix lasiolepis</i>	Arroyo willow
Scrophulariaceae	
* <i>Veronica anagallis-aquatica</i>	Water speedwell
Simaroubaceae	
* <i>Ailanthus altissima</i>	Tree-of-heaven
Solanaceae	
* <i>Nicotiana glauca</i>	Tree tobacco
Tropaeolaceae	
* <i>Tropaeolum majus</i>	Garden nasturtium
FLOWERING PLANTS -- MONOCOTS	
Agavaceae	
* <i>Agave americana</i>	Century plant
* <i>Yucca</i> sp. (soft tip)	Soft-tip yucca
Arecidae	
*Undetermined (? <i>Jacoba</i>)	palm
<i>Washingtonia</i> sp.	Fan palm
Cyperaceae	
<i>Cyperus eragrostis</i>	Tall sedge
* <i>Cyperus involucratus</i>	Umbrella sedge
Iridaceae	

<i>Sisyrinchium bellum</i>	Blue-eyed-grass
Juncaceae	
<i>Juncus patens</i>	Common rush
Poaceae	
* <i>Avena barbata</i>	Slender wild oat
* <i>Bromus catharticus</i>	Rescue grass
* <i>Bromus diandrus</i>	Ripgut grass
* <i>Bromus hordeaceus</i>	Soft-chess
* <i>Bromus madritensis rubens</i>	Red brome
* <i>Ehrharia erecta</i>	Ehrharta
* <i>Festuca arundinacea</i>	Reed fescue
* <i>Hordeum murinum</i>	Foxtail barley
<i>Paspalum distichum</i>	paspalum
* <i>Piptatherum miliaceum</i>	Mountain-millet
* <i>Stenotaphrum secundatum</i>	St. Augustine grass

* denotes introduced species

Rodeo Grounds Berm Removal & Restoration Project

- Berm (1.8 acres)
- Project Area (12.4 acres)
- Area of Potential Effect (21.4 acres)
- Waters of the US (1.5 acres)
- Marginal Wetlands (0.3 acres)



Map Created: May 2005
Revised: December, 2005
Data Source: USGS Aerial Photo from 2003
UTM NAD 83

WETLANDS DELINEATION PHOTOGRAPHS

20 April 2005

Figure 1. Upstream end of the Proposed Rodeo Grounds Berm Removal and Restoration Project Area

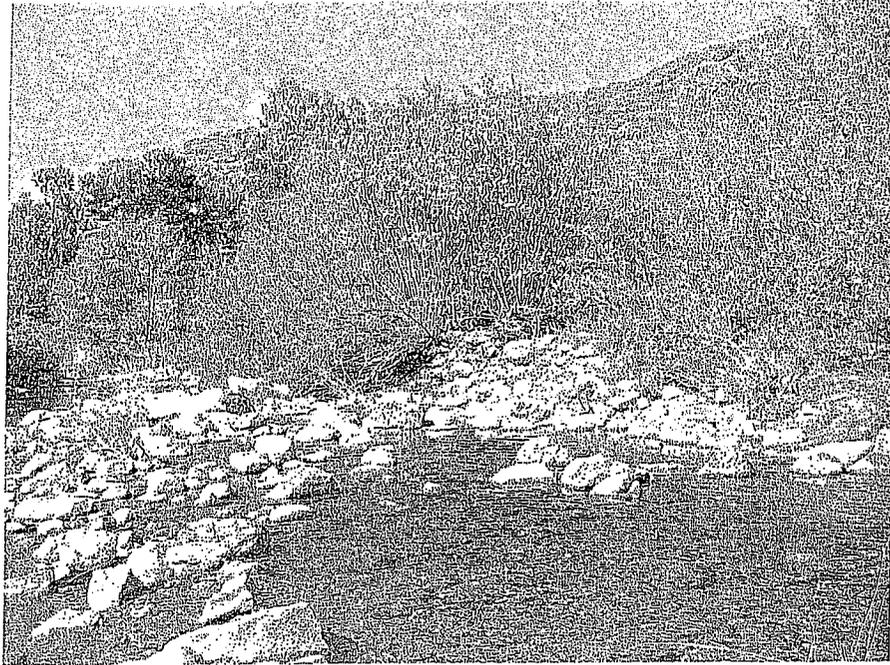


Figure 2. Arundo patch at North end of Project Area



Figure 3. Upstream end of the Rodeo Grounds Berm, looking downstream



Figure 4. North end of Rodeo Grounds Berm, looking upstream

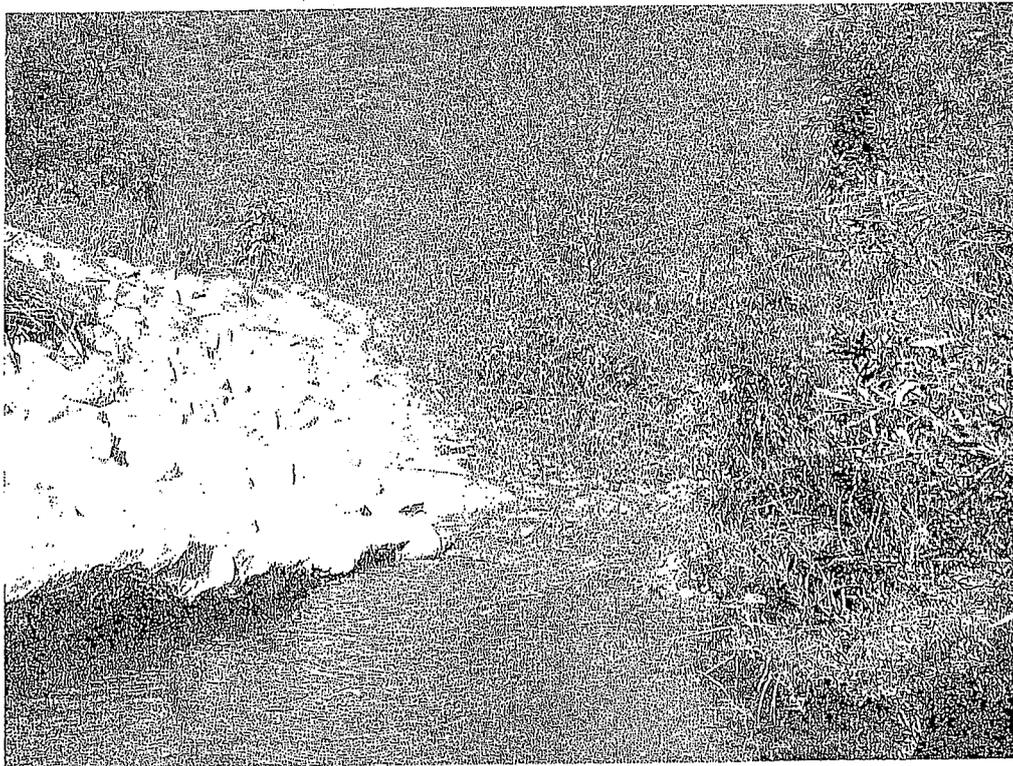


Figure 5. Undercut portion of the Rodeo Grounds Berm



Figure 6. Stream Reach looking upstream from south end of Rodeo Grounds Berm



Figure 7. Site 1 on east bank in willow thicket



Figure 8. Site 1 soil test pit



Figure 9. Site 2 on east bank



Figure 10. Site 3 west bank in reach lined with concrete debris



Figure 11. Site 3 soil test pit



Figure 12. Site 4 west bank downstream of Site 3

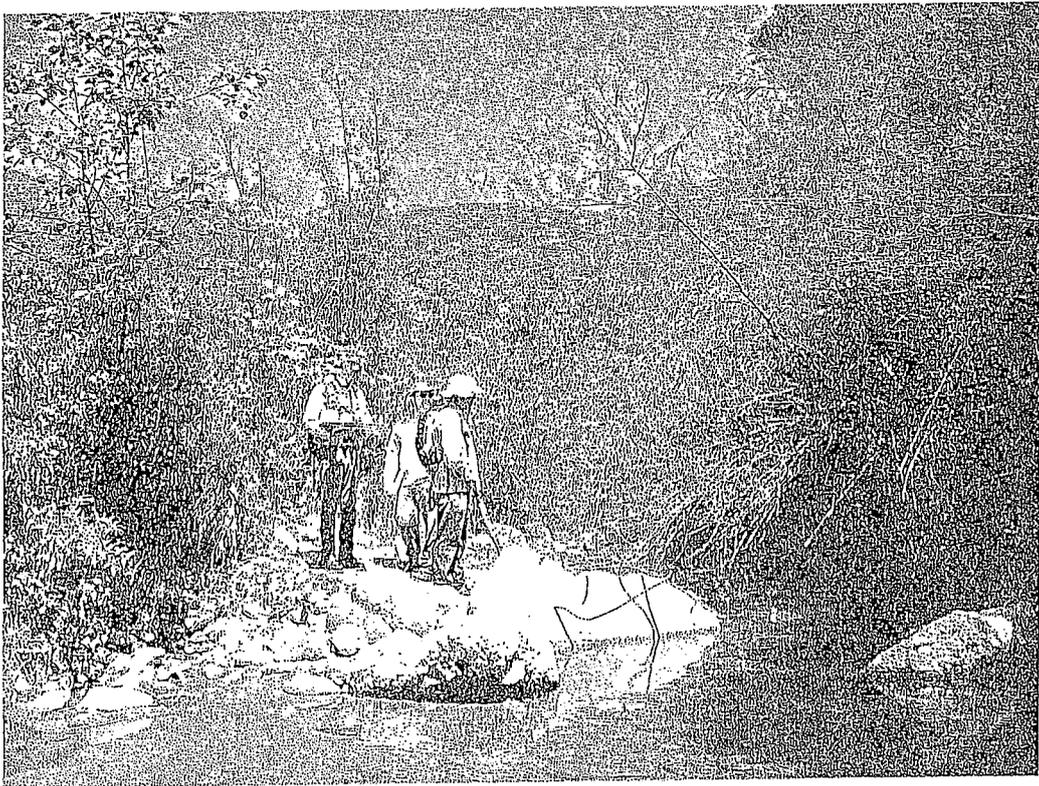


Figure 13. Site 4 Soil test pit



Figure 14. View of Rodeo Grounds Berm road crossing looking upstream

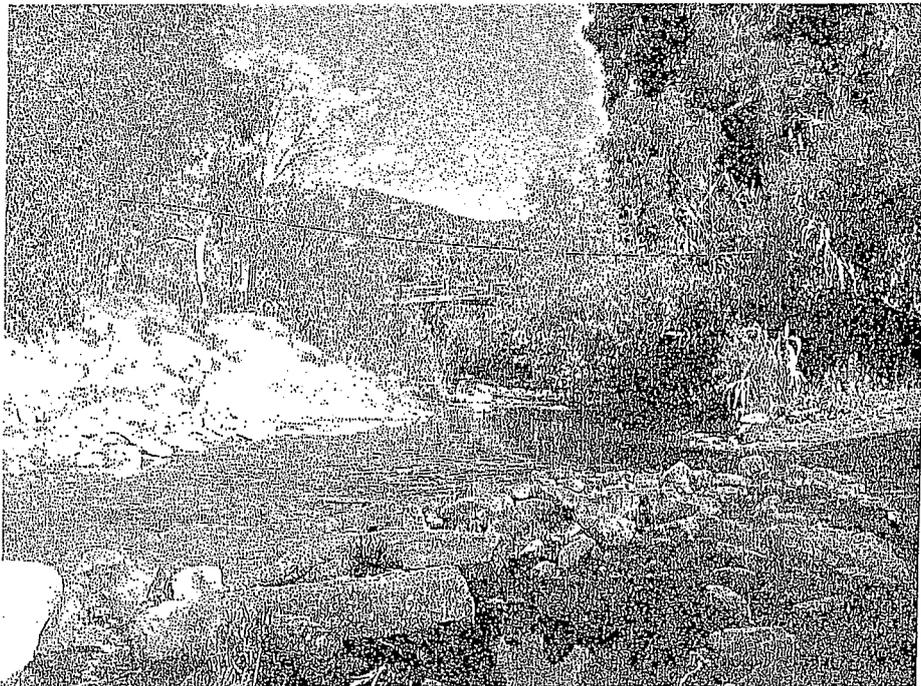
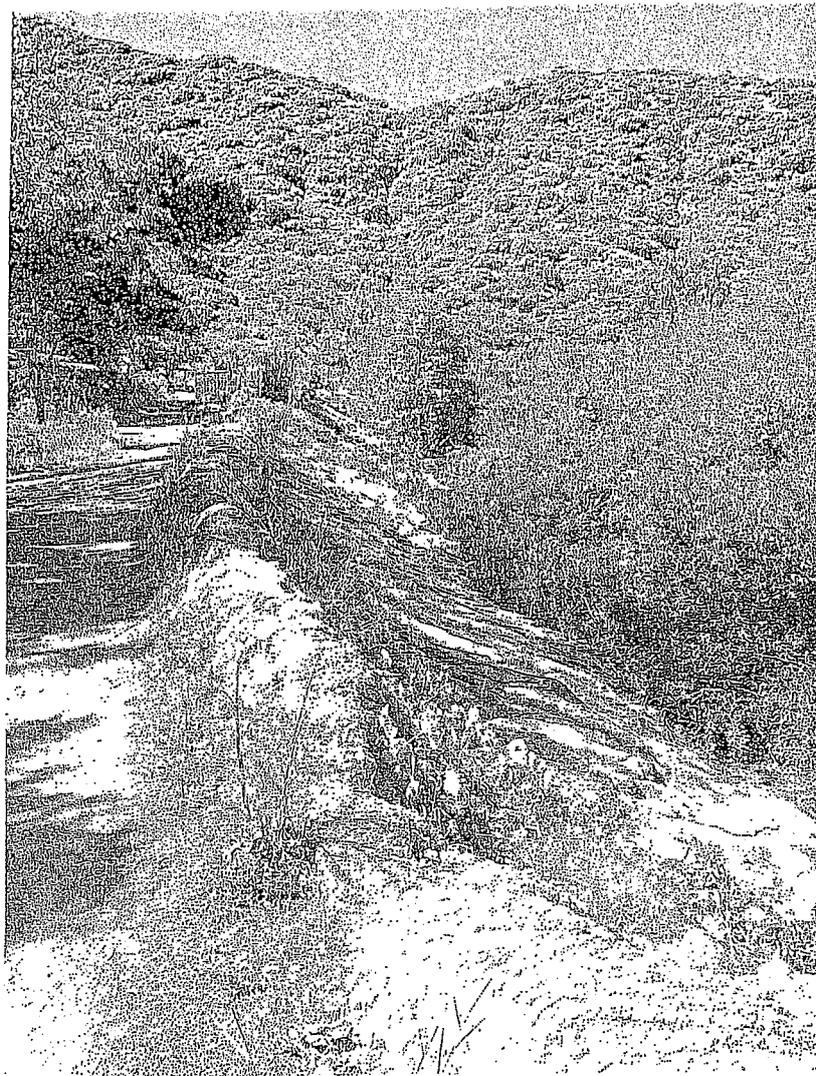
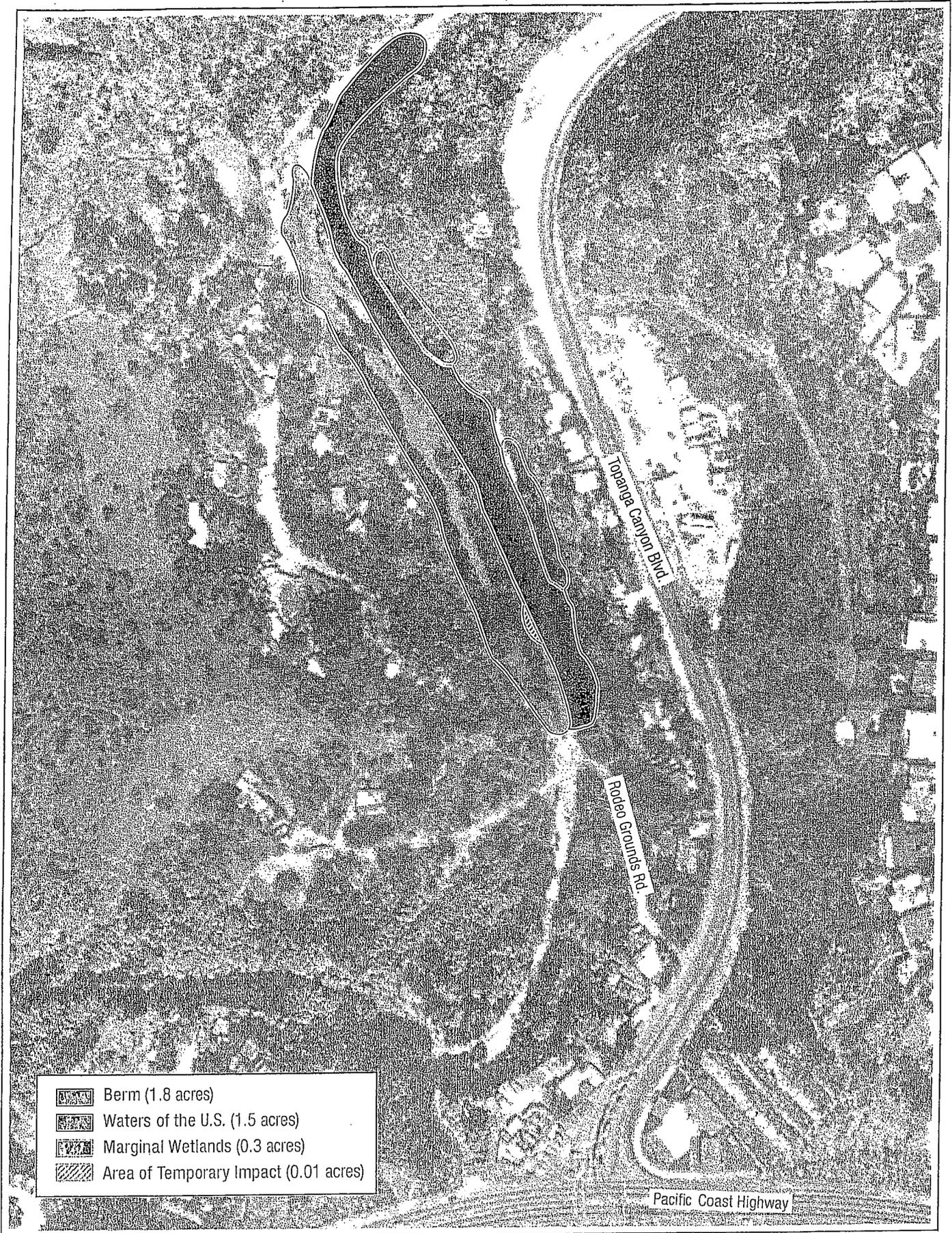


Figure 15. View of the top of the berm looking west towards slope





Source: Resource Conservation District of the Santa Monica Mountains. Aerial Photograph, I.K. Curtis, 1997.

RODEO GROUNDS BERM REMOVAL AND RESTORATION PROJECT

ENVICOM CORPORATION

Impact Areas

0
FEET

100

200



FIGURE A