

ARUNDO AND EXOTIC WEED REMOVAL WITHIN BULL CREEK,
SEPULVEDA DAM FLOOD CONTROL BASIN

Submitted to:

Rivers & Streams Competitive Grant Program
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May 2, 1994,

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PROJECT DESCRIPTION.....	1
Significance.....	1
Location and Work Plan.....	2
Management.....	2
Duration.....	3
Results.....	3
PROJECT PROPOSAL.....	3
Need for the Project.....	3
Employment of Youth.....	4
Suitability to site.....	7
Sustainability.....	9
Applicant Factors.....	11
Cost Effectiveness.....	12
Community Support.....	13
Readiness of the Project.....	14
Other Benefits.....	15
COST ESTIMATE.....	16
PROJECT TIME TABLE.....	17
ATTACHMENTS	
Authorizing Resolution	
Project Location Map	
Evidence of Land Ownership/Permission to Perform the Project	
Site Plan	
Supplemental Information	
Articles of Incorporation, Bylaws, Determination Letter	
and Federal Form 990	

PROJECT DESCRIPTION

The Los Angeles City Department of Recreation and Parks and the Los Angeles Audubon Society are requesting \$195,937 from the Rivers & Streams Competitive Grant Program to restore and enhance the natural riparian woodland along 750 m of Bull Creek in Balboa Park between the Los Angeles River and Victory Boulevard in the Sepulveda Dam Flood Control Basin. Bull Creek's habitat quality will be significantly improved through the complete removal and control of giant reed and other exotic weeds, such as castor bean and tree tobacco, which have established themselves in and along much of Bull Creek. In addition, a cleanup campaign will be carried out to remove trash such as shopping carts and plastic materials. These actions will help to restore the high potential of this site as a wildlife habitat and enhance its desirability as an easily accessible recreational environment for the enjoyment of flora, fauna, and the typical landscape of southern California's riparian forests.

Significance

Giant reed (*Arundo donax*), castor bean (*Ricinus communis*) and tree tobacco (*Nicotiana glauca*) are extremely invasive, exotic weeds that invade native riparian communities of southern California. They crowd out native plants and increase the fire risk and intensity in these communities, thereby changing the natural successional processes in riparian areas. As a result, these species threaten the remaining areas of riparian habitat in the southern part of the state, including Bull Creek, a tributary of the Los Angeles River that runs through Balboa Park in the Sepulveda Basin.

The current degraded state of Bull Creek is an eyesore in the otherwise well manicured landscape of Balboa Park. In addition, several of the dominant weeds, such as

tree tobacco and castor bean, have poisonous properties and should not be tolerated in and adjacent to recreation areas frequented by families with children.

Removing trash and exotic weeds from Bull Creek will greatly enhance its suitability for passive environmental recreational activities. The creek bottom lies about 5 m below the terrain of Balboa Park. Walking along the bank of the creek, visitors can overlook the entire riparian habitat, and observe flowers, insects, and birds in the foliage of willows, alders, and sycamores at eye level. This makes bird and wildlife watching extremely easy and suggests Bull Creek as an excellent outdoor education site for thousands of school children and adults in Los Angeles.

Project Location and Work Plan

Following a survey of vegetation at the 750 m Bull Creek site and the securing of permits, all giant reed, castor bean and tree tobacco will be cut by hand. The biomass will be burned/disposed of, and the resprouting reed killed by multiple applications of herbicide (Rodeo). The site will be monitored regularly and follow-up treatment with herbicide will be administered as needed. The site will be maintained to avoid reemergence of these exotic weeds over a five-year period during which existing native vegetation is expected to begin reestablishing itself.

Project Management

The Los Angeles City Department of Recreation and Parks will provide up-front capital, administrative oversight and on-site project management. The Los Angeles Conservation Corps, under the guidance of the City Department of Recreation and Parks and the U.S. Army Corps of Engineers, will be subcontracted to remove trash from the Creek; and to cut, remove and burn/dispose of the giant reed, castor bean and tree tobacco and apply Rodeo. The Los Angeles Audubon Society, representing the Sepulveda Basin

Wildlife Consortium, will recruit volunteers from member organizations to help prepare the site, help supervise removal of the giant reed and other exotic plants, and help monitor the site to prevent trash buildup and reemergence of exotic weeds.

Project Duration

The project's first phase of survey, weed control and trash removal will be completed in four months. The second phase consisting of habitat monitoring (preventing the resprouting of weeds through additional applications of herbicide) will last for another eight months of follow-up work.

Results

We anticipate that removal of giant reed and other exotic plants along the banks of Bull Creek will provide meaningful employment for young people, have significant benefits for wildlife, and enhance recreational opportunities for people of all ages in Los Angeles.

PROJECT PROPOSAL

1. Need for the Project

Bull Creek is a tributary of the Los Angeles River, arising in the Santa Susanna Mountains at the north end of the San Fernando Valley. For most of its path to the river it is channelized but when it emerges into the Sepulveda Basin at Victory Boulevard, it becomes a natural, soft-bottomed stream. Its borders are thickly vegetated with shrubs, grasses and willows. For many years it has been a significant corridor for migrating birds and has attracted much attention from birding enthusiasts. In a letter to the U. S. Army Corps of Engineers from the California Department of Fish and Game (Dec. 2, 1986),

Regional Director Fred Worthley said, "This area has high wildlife values and has supported a high density of both nesting and migrating birds ." (Figure 1)

Unfortunately Bull Creek, like many riparian areas in Southern California, has suffered considerable neglect. It is an aesthetic eyesore, a potential hideout for vagrants and a severely degraded habitat. The greatest threat to the area today is the invasion of exotic plant species. Giant reed (*Arundo donax*), castor bean (*Ricinus communis*) and tree tobacco (*Nicotiana glauca*) have taken over whole sections of the creek bank, driving out native plants and with them important wildlife habitat for many birds, insects and small mammals.

Restoration of Bull Creek and good management of the remaining habitat surrounding it is of profound importance for wildlife survival and enhancement. An aggressive program of trash and giant reed/exotic plant removal on this site will help provide habitat for more than 90 bird species and many invertebrate species. Situated in close proximity to beautiful Balboa Lake, Bull Creek can and should be restored to its full potential as a rich and pleasant riparian woodland of southern California.

2. Employment of Youth

The restoration of Bull Creek is an ideal project in which to involve youth. The majority of the work can be done by hand, and the project offers significant opportunities for young people to learn skills, while developing an understanding and appreciation of the natural world.

The project will utilize the efforts of the Los Angeles Conservation Corps (LACC) which will recruit and supervise young people to perform the majority of the project work. The Los Angeles Conservation Corps has a seven-year history of demonstrated effectiveness in recruiting young adults to perform conservation and community improvement work. For young people who have not completed high school

Figure 1: Birds of Bull Creek

HERONS

Great Blue Heron
Great Egret
Snowy Egret
Green-backed Heron
Black-crowned Night-Heron

SWANS, GEESE, DUCKS

Wood Duck
Mallard

NEW WORLD VULTURES

Turkey Vulture

HAWKS

Black-shouldered Kite
Sharp-shinned Hawk
Cooper's Hawk
Red-shouldered Hawk
Red-tailed Hawk

FALCONS

American Kestrel
Merlin

SANDPIPERS

Solitary Sandpiper

PIGEONS & DOVES

Spotted Dove
White-winged Dove
Mourning Dove

TYPICAL OWLS

Short-eared Owl

SWIFTS

Vaux's Swift
White-throated Swift

HUMMINGBIRDS

Black-chinned Hummingbird
Costa's Hummingbird
Anna's Hummingbird
Rufous Hummingbird
Allen's Hummingbird

KINGFISHERS

Belted Kingfisher

WOODPECKERS

Nuttall's Woodpecker
Downy Woodpecker
Northern Flicker

FLYCATCHERS

Willow Flycatcher
Pacific-slope Flycatcher
Black Phoebe
Say's Phoebe
Cassin's Kingbird
Western Kingbird

SWALLOWS

Tree Swallow
Violet-green Swallow
Northern Rough-winged Swallow
Cliff Swallow
Barn Swallow

JAYS & CROWS

Scrub Jay
American Crow
Common Raven

TITMICE

Mountain Chickadee

BUSHTITS

Bushtit

WRENS

Bewick's Wren
House Wren

THRUSHES

Ruby-crowned Kinglet
Blue-gray Gnatcatcher
Swainson's Thrush
American Robin

THRASHERS

Northern Mockingbird

WAXWINGS

Cedar Waxwing

VIREOS

Warbling Vireo

**WOOD WARBLERS,
TANAGERS, BUNTINGS,
SPARROWS, BLACKBIRDS,
ORIOLES**

Nashville Warbler
Virginia's Warbler
Yellow Warbler
Yellow-rumped Warbler
Black-throated Gray Warbler
Townsend's Warbler
Blackpoll Warbler
MacGillivray's Warbler

Common Yellowthroat

Wilson's Warbler
Western Tanager
Black-headed Grosbeak
Blue Grosbeak
Lazuli Bunting
Indigo Bunting
California Towhee
Brewer's Sparrow
Savannah Sparrow
Fox Sparrow
Song Sparrow

Lincoln's Sparrow

Golden-crowned Sparrow
Bobolink
Red-winged Blackbird
Tricolored Blackbird
Yellow-headed Blackbird
Brown-headed Cowbird
Hooded Oriole
Northern Oriole

FINCHES

House Finch
Pine Siskin
Lesser Goldfinch
American Goldfinch

ADDITIONAL SPECIES

Ringed Turtle-Dove

and/or have little work experience, LACC provides an opportunity to develop basic work habits and life skills. Corps members work on urban forestry and landscaping projects, day care and senior citizen center improvements, recycling programs and park greenery-development activities. In addition to work experience, the Corps provides extensive training, counseling, leadership development, educational and placement programs through which young adults learn team work, communication skills, self esteem, and respect for cultural differences.

The Corps currently has an enrollment of 150 young adults participating in a year-long program, and 200 junior high school students in a part-time program. These young adults are predominantly Latino (60%) and African American (40%), with a small number (less than 1%) of White/Anglos and Asian Pacific Islanders. Seventy percent are males; 30% are females. More than 70% are high school dropouts; 32% speak little or no English. In addition, 40% have criminal records, primarily for offenses committed as juveniles. Many (60%) have children, and 30% are custodial parents.

Corps members often come from areas of the city where limited access to the out-of-doors and low environmental awareness go hand-in-hand. The project offers an exciting opportunity for these young people to learn new work skills, including removal of non-native vegetation and safe application of herbicides, at the same time they learn about the ecology of riparian areas and the natural history of southern California. A formal training seminar, offered by the U.S. Army Corps of Engineers, will instruct them on proper and safe techniques for cutting and burning/disposing of *Arundo donax* and other exotic plants and applying Rodeo with backpack sprayers. Informal presentations by Audubon, Native Plant Society and other conservation organization volunteers will cover native and non-native vegetation, wildlife species and their habitat needs, and restoration techniques.

The LACC will recruit youth to participate in the program. LACC provides a full-time recruiter, with a corpsmember assistant, who actively provides outreach to low-income communities throughout Los Angeles by speaking at schools, youth fairs, other community-based organizations, and social service agencies. Twelve corpsmembers will be employed on the project, working 8 hours a day, 4 days a week for 20 weeks. The Los Angeles Conservation crews are covered by worker's compensation and liability insurance. All LACC crews provide their own transportation to and from the work site, and most hand working tools.

3. Suitability to site

The impact of the project on habitat is entirely positive. Currently, about 50% of Bull Creek is ugly, degraded, and filthy. Trash removal and removal of exotic plants will lead to a relatively pure stream environment, increasing its benefits for wildlife and its aesthetic value.

Likewise, the local ecosystem will benefit greatly. Site inspection has revealed the presence of a healthy number of riparian plant species, often as individual specimens, such as ceanothus, coyote brush, some elderberries, sycamores, and alders. By slowing the encroachment of exotic weeds, these plant species will increase naturally, and the richness of the vertebrate and insect fauna will increase by several magnitudes. The strongly linear riparian woodland will also act as a natural windbreak in the open Balboa Park landscape (Figure 2).

No studies have been done by agencies with jurisdiction over the site to assess the project's compatibility with other uses. However, this cleanup and major weed control effort will lead to the rehabilitation and renewal of a once beautiful creek environment which will complement the Los Angeles River environment in terms of habitat and recreational opportunities. Bull Creek is part of the large lawn and lakeside habitat of

Figure 2: Trees, Shrubs and Vines of the South Coast Riparian Forest

1. TREES

a. Common:

<i>Alnus rhombifolia.</i>	white alder.
<i>Platanus racemosa.</i>	native sycamore, aliso. (dominant)
<i>Populus fremontii.</i>	cottonwood, alamo.
<i>Quercus agrifolia.</i>	coast live oak, encina.
<i>Salix laevigata.</i>	willow, sauce.
<i>Salix lasiandra.</i>	willow, sauce.

b. Uncommon:

<i>Acer macrophyllum.</i>	big-leaf maple.
<i>Acer negundo</i> subsp. <i>californicum.</i>	box elder.
<i>Juglans californica.</i>	native black walnut, nogal.
<i>Populus trichocarpa.</i>	black cottonwood, alamo.
<i>Umbellularia californica.</i>	California laurel, bay tree.

2. SHRUBS

a. Common:

<i>Artemisia douglasiana.</i>	mugwort.
<i>Baccharis emoryi.</i>	baccharis.
<i>Baccharis glutinosa.</i>	water-wally, seep willow.
<i>Baccharis pilularis</i> subsp. <i>consanguineus.</i>	coyote bush.
<i>Baccharis sarothroides.</i>	broom baccharis.
<i>Baccharis viminea.</i>	mule fat.
<i>Cornus occidentalis.</i>	red osier dogwood.
<i>Phoradendron tomentosum</i> subsp. <i>macrophyllum.</i>	big mistletoe. (parasite)
<i>Phragmites communis</i> var. <i>berlandieri.</i>	common reed, carrizo.
<i>Rosa californica.</i>	wild rose, rosa.
<i>Rubus ursinus.</i>	wild blackberry.
<i>Salix hindsiana.</i>	willow, sauce.
<i>Salix lasiolepis.</i>	willow, sauce. (the most common willow in s. Calif.)
<i>Sambucus mexicana.</i>	elderberry, sauco.

b. Uncommon:

<i>Atriplex lentiformis</i> subsp. <i>breweri.</i>	quail bush. (n. from Orange Co.)
<i>Baccharis douglasii.</i>	mule fat, false willow.
<i>Berberis nevinii</i> (syn. <i>Mahonia</i> n.).	San Fernando barberry.
<i>Cornus glabrata.</i>	brown dogwood.
<i>Cornus stolonifera.</i>	red osier dogwood.
<i>Forestiera neomexicana.</i>	desert olive.
<i>Myrica californica.</i>	wax myrtle.
<i>Ribes aureum</i> var. <i>gracillimum.</i>	golden currant.
<i>Salic goodingii</i> var. <i>variabilis.</i>	willow, sauce.

3. VINES

<i>Clematis ligusticifolia.</i>	wild clematis.	
<i>Lonicera hispidula</i> var. <i>vacillans.</i>	wild honeysuckle.	(n. from W. Riverside Co., uncommon)
<i>Rhus diversiloba.</i>	poisonoak.	
<i>Vitis girdiana.</i>	wild grape, uva cimarrona.	

From: Robert, W. G., J. G. Howe, and J. Major. 1980.
 A survey of riparian forest flora and fauna in California. Pp. 3 — 19
 in *Riparian Forests in California* (ed. A. Sands). Agricultural Sciences
 Publication no. 4101, University of California, Berkeley, CA 94720

Balboa Park adjacent to the Los Angeles River. Because Bull Creek is narrower and easier to access than other sections of the River, it is an ideal site for passive recreational activities such as walking or bird watching. The restored site will enhance the park significantly, adding a pleasant riparian woodland scene to the other attributes of this important recreational facility. Existing alders, sycamores, and willows will provide pleasant natural shade along Bull Creek (Figure 3). People can walk along the banks of the creek or sit on benches overlooking the always flowing creek and its water-loving vegetation. Visitors can walk on even terrain up and down the creek for a 20 to 30 minute hike.

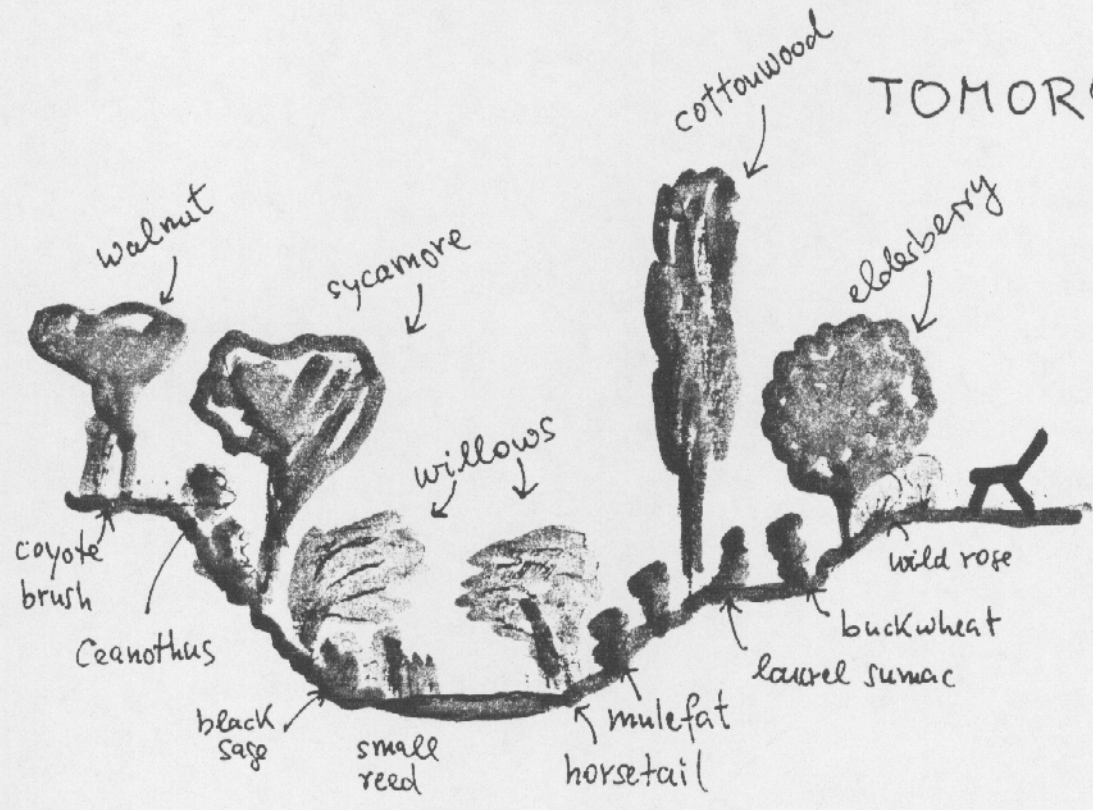
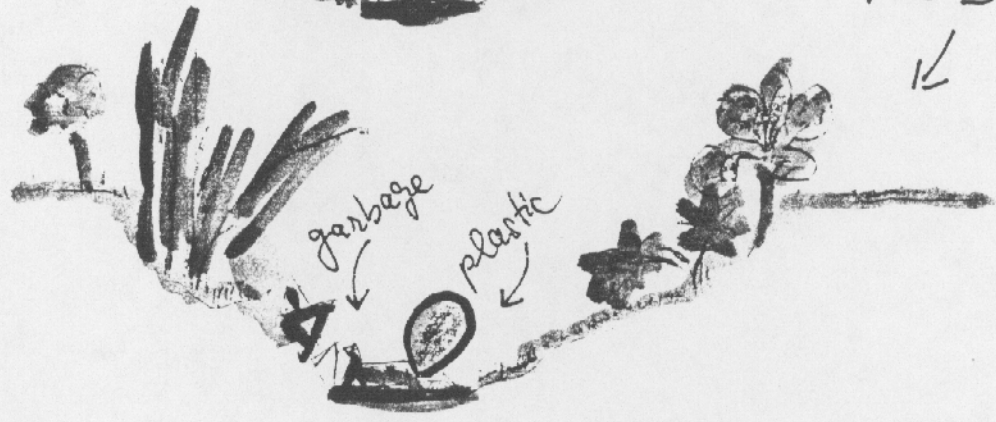
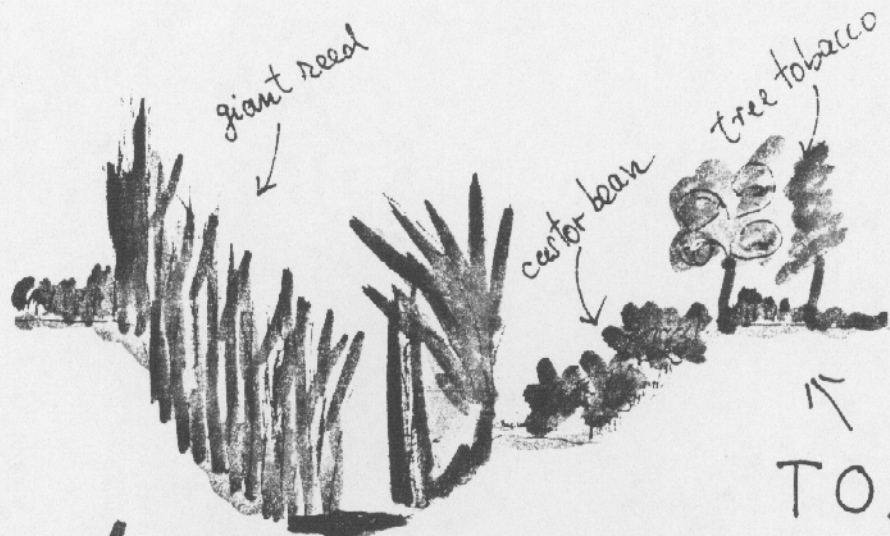
4. Sustainability

Removal and control of *Arundo donax* and other invasive exotic plants is considered to be a long-term process of monitoring and, if necessary, follow-up treatments. Once the initial trash removal and exotic plant eradication has been completed, the City Department of Recreation and Parks will adopt a management program in association with staff landscape architects to prevent reemergence of exotic vegetation and remove it if it reappears.

The City Department of Recreation and Parks, has a \$90 million annual operating budget, a significant portion of which goes to maintain its operated facilities including Balboa Park. Their work will be coordinated with the Board of Public Works, which manages the channel, and Flood Control.

Environmental factors, such as droughts and floods, will not effect the initial clean-up and removal of exotic weeds. Further studies will need to be done to determine the impact of these environmental factors on the site after the project is completed. However, the succession of plants in a riparian community is controlled to some extent by natural flooding.

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5. Applicant Factors

The Los Angeles City Department of Recreation and Parks and the Los Angeles Audubon Society have a long and established relationship. For the past several years, Los Angeles Audubon Society and a consortium of local conservation organizations¹ have been working with Recreation and Parks to restore and preserve the 108-acre Sepulveda Basin Wildlife Area, a small part of the 2100-acre Sepulveda Basin. The Wildlife Area is one of the last major refuges for birds, mammals and other wildlife in the San Fernando Valley. The U.S. Army Corps of Engineers is also working on a management plan for the Wildlife Area, as well as a conceptual design for revegetation and provision of educational and recreational facilities there.

Los Angeles Audubon Society and the Sepulveda Basin Wildlife Consortium are concerned about preservation and enhancement of wildlife habitat throughout the Sepulveda Basin. The poor condition of Bull Creek is a natural concern for them, as it is for Recreation and Parks which manages the flat area along Bull Creek's banks. (Public Works manages the Creek channel.) This proposal brings together the combined strengths of our organizations in the service of habitat restoration and enhancement of recreational resources.

The Los Angeles Department of Recreation and Parks is an independent agency of the City of Los Angeles that operates under Charter Section 170. The Department manages the Sepulveda Basin Recreation Area under a long-term lease from the U.S. Army Corps of Engineers. The current lease is a signed document and stands alone.

¹ The Sepulveda Basin Wildlife Consortium is a committee of the Los Angeles Audubon Society. Its member organizations include the California Native Plant Society, Sierra Club, San Fernando Valley Audubon Society, Friends of the Los Angeles River and the Topanga-Las Virgenes Resource Conservation District.

The Department has operated for more than 100 years within and around the City of Los Angeles. It has an annual operating budget of \$90 million and 1,800 full-time employees. It maintains a capital expenditure improvement program in excess of \$200 million. It is funded from federal, state and local sources.

The Department has received Federal grants under the Public Works Employment Act for the restoration and naturalization of MacArthur Park and Reseda Park Lakes. Further, previous grants under the State Urban Fishing program have funded restoration and naturalization of lakes at Echo Park, Lincoln Park, and Harbor Regional Park. The Department recently received a grant of \$564,000 from ISTEPA for the restoration of Hollenbeck Lake.

The Los Angeles Audubon Society, a non-profit conservation organization, acting for the Consortium, has received funds for habitat restoration and enhancement at the Sepulveda Basin Wildlife Area within the last two years from the State Water Resources Control Board and from the City of Los Angeles City Attorney. Monies came from fines levied against an electroplating company and Anheuser Busch for spilling toxics into Haskell Creek.

6. Cost Effectiveness

This project is cost-effective in terms of the wildlife area that will be enhanced, the number of people who will benefit from it, the percentage of project funds spent to employ youth, and the minimal site preparation and non-restoration costs involved.

More than 750 m of creek bank will be cleared of debris and noxious weeds, significantly enhancing the quality of riparian habitat for native wildlife in the Sepulveda Basin. This area will also be an important recreational resource. Tens of thousands of people visit Balboa Park each year, and the clean-up of Bull Creek will add to their

enjoyment of the area, providing excellent opportunities for people of all ages to view native plants and animals and enjoy a natural setting

In addition, more than 65% of project funds will be spent on direct labor by at-risk youth. Trash removal and eradication of exotic plants can all be done by young people with a minimum of expensive machinery or employment of professionals.

Site preparation will be minimal and inexpensive. Los Angeles Audubon Society and Consortium volunteers, with assistance from Dr. Hartmut Walter, Professor of Geography at the University of California at Los Angeles, will tag native vegetation and alert the Los Angeles Conservation Corps workers to sensitive areas of the creek banks and channel.

The only non-development costs included in the cost estimate are those necessary to support the development—project management, project design and project payment.

7. Community Support

Support for the project has come from elected officials, scientists, and a wide and varied range of conservation organizations. Congressman Anthony Beilenson, Los Angeles City Council members Zev Yaroslavsky, Laura Chick and Marvin Braude, and Dr. Hartmut Walter, professor of Geography at the University of California at Los Angeles have enthusiastically endorsed the project. So have the organizations making up the Sepulveda Basin Wildlife Consortium (California Native Plant Society, Los Angeles Audubon Society, San Fernando Valley Audubon Society, Sierra Club, Friends of the Los Angeles River, Topanga-Las Virgenes Resource Conservation District).

Volunteer labor, provided by Los Angeles Audubon Society and Consortium members, will be important to the site preparation, and to on-going monitoring and up-keep. Volunteers will help tag native vegetation at the site before the clean-up begins. They will also offer a series of presentations for LACC workers, during and after their

training, on native and non-native vegetation, wildlife species and their habitat needs, and restoration techniques. Volunteers will organize and participate in future clean-ups, providing the catalyst for involving the maintenance help of the City Department of Recreation and Parks. Consortium member organizations will also provide volunteers to lead periodic nature and bird walks along Bull Creek to involve the community in educational and recreational activities.

In addition, the Los Angeles Audubon Society, the Department of Recreation and Parks and the U.S. Army Corps of Engineers will also be contributing significant in-kind services to the program, including project planning assistance, training of Los Angeles Conservation Corps workers in safe application of herbicide (Corps of Engineers), and on-going site monitoring.

8. Readiness of the Project

This project can be put into motion rapidly and at any time of the year. The following steps describe the tasks and how they will be accomplished.

Objective 1: Remove trash and all giant weed and other exotic plants from 750 meters of Bull Creek

Task 1. Remove trash and all standing giant reed, tree tobacco and castor bean. Crews from the Los Angeles Conservation Corps will cut the plants by hand and remove them to a central site to be burned/disposed of.

Task 2: Treat resprouting giant reed with herbicide. Rodeo is the only herbicide licensed for application over "wetlands" areas. Rodeo is effective on giant reed in a foliar treatment using a 5% solution in water with conventional spray equipment or as a concentrate with micro droplet applicators. The herbicide will be applied by LACC ground crews with back-pack sprayers.

Objective 2: Prevent re-infestation of exotic weeds through integrated monitoring and follow-up treatment

Task 1: Regular monitoring on at least a yearly basis. This will be required to prevent re-invasion of the site by giant reed. Any reed or exotic plant which reinvades will need to be killed by follow-up treatment with herbicide. The entire site will be inspected bi-annually for the first three years after initial removal, and annually thereafter, to monitor for the reinvansion of giant reed. Weeds which are found on-site will be treated in summer or fall by hand with a 5% solution of Rodeo in water using a backpack sprayer.

9. Other Benefits

Improvement of this site will have significant benefits. A small part of the 750 m long riparian belt still looks quite attractive today. The restoration of the degraded portion will greatly enhance the overall scenic value of Bull Creek. It will possibly become the most easily accessible riparian woodland site in Los Angeles.

Historically, riparian habitats were the key environments for the survival of native Americans and the wildlife of southern California; during the long summer drought perennial streams provided crucial sustenance. Bull Creek today is mostly channelized, not much more than a large gully. Only this small section in Balboa Park will show its natural richness and beauty, something many children in L.A. have never seen. Its restoration and easy access from the abundant parking lots of Balboa Park make it an important educational, geographical, and environmental asset of the San Fernando Valley.

Finally the project will improve the public health environment of the San Fernando Valley, by removing toxic weeds (particularly tree tobacco and castor bean) from a public park; and contribute to the highly desirable restoration of one of the most endangered ecosystems in California, the small riparian forest.

COST ESTIMATE

Site Preparation

1. Biological consultant/
environmental documentaion \$4,000

2. Supplies/Consumables \$1,000

Site Improvements

3. LACC labor (384 crew
hours/wk X 20 weeks
@\$16/hr) \$122,880

4. Equipment (saws, sprayers,
safety equipment) \$2,500

5. Herbicide \$5,000

6. Biomass removal
(containers and hauling) \$15,000

Project Administration

7. Project management, project
design, project payment \$20,000

8. Contingency (15%) \$25,557

TOTAL \$195,937

PROJECT TIME TABLE

September 1994: Document and tag native plants and sensitive areas of the site. Begin trash and exotic weed removal and initial treatment of weeds with herbicide.

October 1994 - January, 1995: Continue to remove trash and exotic weeds, and treat with herbicide.

March 1995: Assess weed control success.

April 1995: Follow-up application of herbicide to resprouts.

May - September 1995 (and bi-annually for the next three years, annually thereafter): Continued trash removal, exotic plant monitoring and spot treatment to resprouts.