

COASTAL CONSERVANCY

Staff Recommendation

January 17, 2008

**SANTA MONICA BAY RESTORATION PLAN:
MALIBU CREEK HABITAT ENHANCEMENT, PHASE II**

File No. 00-117-38

Project Manager: Bob Thiel

RECOMMENDED ACTION: Authorization to disburse up to \$52,785 to the Mountains Restoration Trust for removal and control of *Arundo donax* and other invasive plant species along Malibu Creek in the Santa Monica Mountains.

LOCATION: Malibu Creek watershed, Los Angeles County (Exhibits 1 and 2).

PROGRAM CATEGORY: Resource Enhancement

EXHIBITS

Exhibit 1: [Regional location map](#)

Exhibit 2: [Map of project area](#)

Exhibit 3: [SMBRC Resolution 06-17](#)

Exhibit 4: [Letters of support](#)

RESOLUTION AND FINDINGS:

Staff recommends that the State Coastal Conservancy adopt the following resolution, pursuant to Sections 31251-31270 of the Public Resources Code:

“The State Coastal Conservancy hereby authorizes disbursement of an amount not to exceed fifty-two thousand seven hundred eight-five dollars (\$52,785) to the Mountains Restoration Trust (MRT) for removal and control of *Arundo donax* and other invasive plant species along Malibu Creek to implement the Santa Monica Bay Restoration Plan, approved by the Conservancy on August 2, 2001. This authorization is subject to the condition that prior to the disbursement of any funds, the MRT shall submit for the review and written approval of the Conservancy’s Executive Officer a work program, budget, and schedule and the names of any contractors to be employed in carrying out the work.”

Staff further recommends that the Conservancy adopt the following findings:

“Based on the accompanying staff report and attached exhibits, the State Coastal Conservancy hereby finds that:

1. The proposed project is consistent with the purposes and criteria of Chapter 6 of Division 21 of the Public Resources Code (Sections 31251-31270) regarding enhancement of coastal resources.
 2. The proposed project is consistent with the Project Selection Criteria and Guidelines adopted by the Conservancy on January 24, 2001.
 3. The project area has been identified in the certified Local Coastal Program of Los Angeles County as requiring public action to resolve existing or potential resource protection problems.
 4. The Mountains Restoration Trust is a nonprofit organization existing under Section 501(c)(3) of the U.S. Internal Revenue Code, and whose purposes are consistent with Division 21 of the California Public Resources Code.”
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PROJECT SUMMARY:

Conservancy staff recommends that the Conservancy authorize disbursement of up to \$52,785 to the Mountains Restoration Trust (MRT) to remove *Arundo donax* and several other invasive species along a 9.1-mile reach of Malibu Creek to help restore and enhance stream and riparian habitat. The grant would fund the second phase of an *Arundo* eradication effort that began in 2000 along a 4.2 mile reach from the bridge at Pacific Coast Highway to the bridge at Las Virgenes and Malibu Canyon roads. The proposed project will re-treat a number of *Arundo* clumps in the initial project area, but will also expand the treatment area upstream to Malibou Lake. The focal area for eradication and restoration will be a 50-foot wide riparian corridor on either side of the stream and encompass about 135 acres. All work will be performed on property owned and managed by the California Department of Parks and Recreation.

Conservancy funds will be used for project coordination, staff and management costs (including biological monitors and grant and project managers), equipment, permitting, and contractor services. The MRT would contribute about a third of the project costs through in-kind donations of equipment and labor from volunteers and partner agencies.

The work will be done using a combination of hand tools, gas-powered tools and herbicides approved for use in wetlands and riparian areas. The work will be managed by the MRT but performed in part by a contractor experienced in eradication of *Arundo* and other invasive species. In addition to *Arundo*, the project will target removal of castor bean, pampas grass, sweet fennel, tree tobacco, Peruvian pepper, myoporum and Spanish broom. The control or eradication of all of these exotics would allow native riparian species---such as sycamore, willow, and mulefat---to recolonize and form a natural riparian canopy along this acreage, improving habitat for such species as migratory birds and steelhead trout.

Arundo donax (or giant reed) is one of the most significant causes of habitat degradation

along Southern California rivers and streams. It is extremely invasive, infilling stream channels and creating a vertical monoculture that aggressively displaces native riparian vegetation and nesting habitat. *Arundo* alters channel morphology, increases flooding risks, and consumes prodigious amounts of water. *Arundo* infestations also increase fuel load as well as fire frequency and intensity along riparian corridors by producing an abundant flammable biomass that accumulates during summer and fall, the region's prime wildfire season. Healthy, natural riparian areas usually act as firebreaks because of the high moisture content of native vegetation. But wildfires burn rapidly through stream corridors infested with *Arundo*, spreading across watersheds and along riparian systems.

Prior to Phase I of the project, *Arundo* had been present along Malibu Creek in abundances ranging from scattered clumps to dense stands. It had grown expansively along the creek, due to its ability to reproduce vegetatively from underground rhizomes or plant fragments, which are carried downstream during floods and become rooted, forming new colonies. During the treatment cycle of the 5-year Phase I of this project, the MRT and its contractors treated more than 414 patches of *Arundo*. Some of the clumps targeted in that effort are still producing leaves and new canes, which if left untreated will continue to expand to create large patches that will crowd out native species. Continued treatment of those areas is therefore necessary.

During the proposed Phase II of the project, the remaining live canes along the project reach will be cut twice a year and daubed with full-strength glyphosate approved for aquatic use (but without a surfactant, or wetting agent). Foliar spraying was not originally expected to be an option during this phase because of the rapid growth of willows and other native vegetation; however, because of the impacts of the October 2007 Malibu Canyon fire, foliar treatment might be used in some locations. The MRT and its contractors will also remove any new infestations that emerge from cane fragments or rhizomes carried by high streamflows. Eradication of *Arundo* along the project reach would reduce the future establishment of *Arundo* in Malibu Lagoon and along the shoreline and beaches of Santa Monica Bay by removing its potential to propagate downstream and into the Bay. As a result, the proposed project will complement the Malibu Lagoon Restoration Plan and riparian and upland restoration projects in Malibu Creek State Park.

The October 2007 Malibu Canyon fire has created a new urgency for this project. Within weeks after that fire, the MRT staff discovered that many *Arundo* canes along Malibu Creek have begun to resprout. According to a recent study by Dr. Gretchen Coffman, fire actually increases the ability of *Arundo* to invade natural riparian systems in Southern California. (G. C. Coffman, *Factors influencing invasion of giant reed (Arundo donax) in riparian ecosystems in Mediterranean-type climate regions*, unpublished PhD dissertation, University of California, Los Angeles, 2007). After being burned in a 2003 fire along the Santa Clara River near Santa Paula, *Arundo* regenerated immediately, while native riparian plants remained dormant for several months. *Arundo* also grew three to four times faster than native species. Less than a year after the fire, Dr. Coffman found that *Arundo* had increased in abundance by almost 25 percent and comprised more than 99 percent of the vegetative cover at her study sites. Its density was nearly 20 times

higher and its productivity 14-24 times greater than that of native plants.

Her study indicates that because of the much higher biomass and productivity of *Arundo* following a fire, *Arundo* can eventually exclude native riparian trees and shrubs in fire-prone riparian systems, altering vital ecosystem process and increasing the risk of later fires spreading to surrounding shrublands and communities. On the other hand, the immediate post-fire removal of *Arundo* reduces both future fire risk and the amount of biomass removal that is required to eradicate the plant. Thus an immediate response by the MRT and its partners to *Arundo* regrowth following last year's fire is critical.

At its October 19, 2006 meeting, the Governing Board of the Santa Monica Bay Restoration Commission (SMBRC) authorized a grant to the MRT of \$52,785 of Proposition 12 funds administered by the Conservancy for projects within the Santa Monica Bay watershed (Exhibit 3).

The MRT is a 501(c)(3) organization, formed in 1981 with assistance from the Conservancy. The MRT's mission is preserve, protect and enhance the natural resources of the Santa Monica Mountains, which it accomplishes through land acquisition, cooperative planning, restoration, education, and recreation programs. Since its inception, the MRT has protected over 6,000 acres and has managed several significant restoration programs, including the planting of 2,500 oaks and other native trees in Malibu Creek State Park. As demonstrated by its successful completion of several projects funded by the Conservancy, the MRT has the requisite experience and expertise to implement the proposed project.

SITE DESCRIPTION:

The Santa Monica Bay watershed covers approximately 400 square miles and includes 28 separate sub-watershed drainages. It includes two major topographic areas: the Los Angeles coastal plain and the Santa Monica Mountains. The Santa Monica Bay watershed is one of the nation's most highly urbanized regions. It encompasses residential developments, commercial and industrial areas, and undeveloped open space, primarily within the Santa Monica Mountains. It is bordered on the north by the Santa Monica Mountains divide, on the east by Griffith Park, on the south by Point Fermin, and on the west by the eastern portion of Ventura County.

The Malibu Creek sub-watershed--the largest in the Santa Monica Mountains---is located about 35 miles west of the City of Los Angeles. The creek and its tributaries drain a 109-square mile area of the Santa Monica Mountains and Simi Hills into Malibu Lagoon and Santa Monica Bay. The creek and lagoon each provide important habitat for birds migrating along the Pacific Flyway, as well as habitat for southern steelhead (*Oncorhynchus mykiss*), a federally-listed endangered species. Tidewater goby, Pacific lamprey, striped mullet and arroyo chub also inhabit Malibu Creek or its lagoon. A significant portion of the watershed is in public ownership, including 6,700 acres in the Santa Monica Mountains National Recreation Area and 8,500 acres owned by California Department of Parks and Recreation. The entire work area for the proposed project lies within a protected riparian corridor owned by California Department of Parks and

Recreation, which manages both Malibu Lagoon State Park and Malibu Creek State Park.

PROJECT HISTORY:

Santa Monica Bay Restoration Plan: In recognition of the need to protect Santa Monica Bay and its sub-watersheds, in May 1988, the State of California and the U.S. Environmental Protection Agency (US EPA) nominated Santa Monica Bay for inclusion in the National Estuary Program. Established under the Water Quality Act of 1987 and managed by US EPA, the program includes more than two dozen significant estuaries and coastal water bodies nationwide. As a National Estuary Program, the Santa Monica Bay Restoration Project is charged with assessing the Bay's pollution problems and with producing a Bay Restoration Plan to serve as the blueprint for the Bay's long-term recovery. The Santa Monica Bay Restoration Plan was approved by the State of California and US EPA in 1995 and identifies 250 actions, including ones focusing on habitat conservation, enhancement and restoration, pollution prevention and treatment control, assessment, education and monitoring.

The goals of the Bay Plan include: (1) reducing pollutant loadings to and prevent degradation of the waters of Santa Monica Bay; (2) reducing human health risks associated with swimming in or harvesting seafood from the Bay; and (3) restoring, rehabilitating and protecting the marine ecosystem, living resources and biodiversity of the Bay and its watersheds. The Bay Plan also identifies the protection, restoration, and creation of wetlands within the Bay as a major objective.

The Safe Neighborhood Parks, Clean Water, Clean Air and Coastal Protection Bond Act of 2000 (Proposition 12) earmarked \$25,000,000 to the Conservancy for restoration of Santa Monica Bay in accordance with the goals and priorities of the Bay Plan. The Conservancy approved the Bay Plan on August 2, 2001. Proposition 12 requires the Bay Watershed Council, the stakeholder board of the Restoration Project, to determine project eligibility and grant priorities. Working with Conservancy staff, the Santa Monica Bay Restoration Project staff has solicited project proposals that would achieve the goals of the Bay Restoration Plan and address its water quality and natural resource protection objectives. The project being recommended for funding here has been approved for funding by the Bay Watershed Council and Santa Monica Bay Restoration Commission (Exhibit 3).

Malibu Creek Habitat Enhancement Project: The initial phase of this *Arundo* eradication effort began in 2000. Utilizing a combination of foliar spraying and cut-and-daub application of glyphosate, the MRT and its partners worked along a 4.2 mile stretch of lower Malibu Creek between the Pacific Coast Highway Bridge and the bridge at Malibu Canyon and Las Virgenes Roads. Its project partners included the National Park Service, Student Conservation Association, Outward Bound Adventures, Heal the Bay, California Native Plant Society and California Department of Parks and Recreation. Initial funding for the project came from a \$54,000 grant from the County's Habitat Conservation Fund and a \$49,800 grant to the National Park Service. In 2001, the Conservancy awarded the MRT a grant of \$189,000 to expand the effort, under the Proposition 12 grant program that the Conservancy administers for projects to implement the Santa Monica Bay Restoration Plan.

A 2006 survey by Sapphos Environmental, Inc at the end of Phase I of the project found that “99.5 percent of the giant reed patches located in the study area was either completely eradicated or displayed significant mortality (greater than 80 percent)” and that native species were recolonizing almost half of the patches in the project area. In its final report to the Conservancy and the SMBRC, however, the MRT cautioned that its efforts would not reflect the common assumption that *Arundo* infestations can be eliminated by a five-year treatment effort. Based on the MRT’s own observations, consultations with experts, and experience on the project, it said, a much longer treatment cycle would be essential to assure that none of the existing colonies of *Arundo* recover along Malibu Creek.

Experts on plant physiology had advised the MRT that *Arundo* growing in the channel of perennial streams (such as Malibu Creek) can be expected to last up to 10 years before they can be completely eradicated by herbicide use. Root masses may extend underground for 3 meters, depending on the age of the colony. In such cases, applied herbicide may be insufficient to reach all living material; after several years a seemingly dead clump will send up a healthy cane, soon to be followed by many more. As a result, the MRT has sought additional funding for follow-on monitoring and eradication efforts, noting that “it is imperative that this project be continued for at least another five years” following Phase I.

PROJECT FINANCING:

Coastal Conservancy grant (Proposition 12, Santa Monica Bay Restoration program)	\$52,785
Volunteer labor and other in-kind matching funds	\$23,841
Total Project Cost	\$76,626

The source of Conservancy funds is an appropriation to the Conservancy from Proposition 12, the "Safe Neighborhood Parks, Clean Water, Clean Air and Coastal Protection Bond Act of 2000," for projects to implement the Santa Monica Bay Restoration Plan.

CONSISTENCY WITH CONSERVANCY'S ENABLING LEGISLATION:

The proposed project would be undertaken pursuant to Chapter 6 of the Conservancy’s enabling legislation, Division 21 of the Public Resources Code (Sections 31251-31270), regarding enhancement of coastal resources.

Under §31251, the Conservancy may award grants for enhancement of coastal resources that, because of natural or human-induced events, or incompatible land uses, have suffered loss of natural and scenic values. Consistent with this section, the proposed project would lead to improvements in the quality and availability of degraded habitat in the Malibu Creek watershed of Santa Monica Bay and is therefore consistent with this section.

The proposed authorization is consistent with §31253, which states that the Conservancy may provide up to the total cost of any coastal resource enhancement project. For the project proposed here, the Conservancy's contribution would represent about 68 percent of the funds needed to carry out the project.

CONSISTENCY WITH CONSERVANCY'S STRATEGIC PLAN GOALS & OBJECTIVES:

Consistent with **Goal 5, Objective A**, the proposed project will help promote local capacity to plan and implement resource enhancement projects in the coastal watersheds of the Santa Monica Mountains.

Consistent with **Goal 5, Objective B**, the proposed project will help restore and enhance 135 acres of important riparian habitat and stream corridor along Malibu Creek, an important watershed of Santa Monica Bay.

Consistent with **Goal 5, Objective C**, the proposed project will help enhance and restore a critical wildlife corridor that links coastal and upland habitats in the Santa Monica Mountains.

Consistent with **Goal 5, Objective D**, the proposed project will target the prevention, control and eradication of *Arundo donax* and other non-native invasive species that threaten important coastal habitat in the Santa Monica Mountains.

Consistent with **Goal 6, Objective B**, the proposed project would assist in restoring portions of Malibu Creek, a critical coastal watershed that drains to Santa Monica Bay.

CONSISTENCY WITH CONSERVANCY'S PROJECT SELECTION CRITERIA & GUIDELINES:

The proposed project is consistent with the Conservancy's Project Selection Criteria and Guidelines, last updated on September 20, 2007:

Required Criteria

1. **Promotion of the Conservancy's statutory programs and purposes:** See the "Consistency with Conservancy's Enabling Legislation" section above.
2. **Consistency with purposes of the funding source:** As discussed above, this project will be funded with monies appropriated to the Conservancy from Proposition 12 for implementing the Santa Monica Bay Plan. The proposed project is consistent with the Bay Plan and this project has been approved by the Santa Monica Bay Restoration Commission (Exhibit 3).
3. **Support from the public:** Implementation of the Santa Monica Bay Restoration Plan has widespread public and agency support. The Santa Monica Bay Watershed Council includes members from private industry, the general public, community environmental organizations, as well as local, regional, state and federal agencies. Non-native invasive species are a continuing threat to the ecological health of the

Santa Monica Bay watershed, and the restoration of native watershed habitats has been identified as a priority objective by the Council. Letters of support for this project are attached as Exhibit 4.

4. **Location:** The proposed project is located within the coastal zone, Santa Monica Bay and the Malibu Creek sub-watershed drainage.
5. **Need:** The project will help restore an important wildlife corridor in the Santa Monica Mountains, as well as prevent *Arundo donax* from further infesting Malibu Lagoon. Conservancy funding is critical to implementing this project.
6. **Greater-than-local interest:** The Malibu Creek watershed is the largest watershed in the Santa Monica Mountains National Recreation Area, the world's largest urban national park. The watershed lies along Santa Monica Bay, which has been identified by both the State of California and US EPA as a coastal water body of national significance. Restoration of native vegetation and protection of riparian habitat within the Malibu Creek and other Santa Monica Bay watersheds is also one of the priorities of the Southern California Wetlands Recovery Project.

Additional Criteria

7. **Urgency:** Because of the risk of increased *Arundo* infestation in the watershed following the October 2007 Malibu Canyon fire, immediate implementation of an eradication effort along Malibu Creek is critical.
8. **Resolution of more than one issue:** The project will address coastal resource protection, habitat restoration and species protection, invasive species control and eradication, and watershed resource protection.
9. **Leverage:** See the "Project Financing" section above.
10. **Readiness:** By its implementation and completion of previous projects funded by the Conservancy (including Phase I of the Malibu Creek Habitat Enhancement Project), the MRT has demonstrated its ability to start and finish this project in a timely manner.
11. **Realization of prior Conservancy goals:** The Conservancy has been involved in resource protection, enhancement and restoration projects within the Santa Monica Bay watershed for more than a decade, including projects focused on improving coastal water quality and coastal nearshore resources within the Bay. The Conservancy has also provided staff and financial resources for a number of acquisition, habitat restoration and coastal access projects within the Santa Monica Mountains, including restoration of Malibu Creek and Malibu Lagoon. Implementation of this project will contribute to the fulfillment of long-standing Conservancy goals.
12. **Cooperation:** The Santa Monica Bay Restoration Project is a cooperative venture involving a broad range of interested and affected stakeholders including private industry, citizens, environmental groups, and local, regional, state and federal agencies.

CONSISTENCY WITH LOCAL COASTAL PROGRAM POLICIES:

Malibu Creek and its surrounding habitat are designated as an Environmentally Sensitive Habitat Area (ESHA) in the existing certified County of Los Angeles Malibu/Santa Monica Mountains Land Use Plan (1986). Those areas are similarly designated in the County's proposed update of its local coastal plan for the Santa Monica Mountains. Both plans recognize the importance of protecting and restoring core habitat areas, wildlife corridors and riparian buffers along Malibu Creek.

**CONSISTENCY WITH LOCAL WATERSHED MANAGEMENT PLAN/
STATE WATER QUALITY CONTROL PLAN:**

The Malibu Creek watershed is the subject of a 1995 *Malibu Creek Watershed Natural Resources Plan*, developed by the Resource Conservation District of the Santa Monica Mountains and the Natural Resources Conservation Service. Removal of *Arundo* and other invasive species along the riparian corridor of Malibu Creek would help implement at least four of the 44 action items identified in that plan: (1) Enhancing and protecting lagoon, creek, beach and intertidal habitats for threatened and endangered species, native biodiversity and riparian habitat; (2) developing weed abatement programs to reduce erosion and fire risk; (3) controlling non-native invasive species in the wilderness areas of the watershed; and (4) maintaining, restoring, and enhancing wetlands.

In addition, a study prepared for the California Coastal Commission, identified eradication of *Arundo* and associated invasive species as the "most effective restoration activity" of all biota and habitat management alternatives considered for lower Malibu Creek. (R. Ambrose and A. Orme, *Lower Malibu Creek and Barrier-Lagoon System: Resource Enhancement and Management*, 1999). The study concluded that such an action would significantly enhance riparian habitat and result in improved water purification capacity of the riparian zone and reduced pollutant loading in Malibu Lagoon and the lower creek.

COMPLIANCE WITH CEQA:

The proposed project is categorically exempt from review under the California Environmental Quality Act (CEQA) pursuant to Section 15304 of the CEQA Guidelines (14 California Code of Regulations §15304). Section 15304 exempts minor public or private alterations in the condition of land, water and/or vegetation that do not involve the removal of mature, scenic trees (except for forestry or agricultural purposes). Upon approval, staff will file a Notice of Exemption for the project.