



What Trust projects are currently active at Mountain Lake?

The Trust is currently working on several projects at Mountain Lake. These include the Mountain Lake Enhancement Project and the Mountain Lake Remediation Project.

What is the Mountain Lake Enhancement Project?

In 2001, the Presidio Trust (Trust), National Park Service (NPS), and Golden Gate National Parks Conservancy (Parks Conservancy) completed a planning effort with public review, that identified a number of strategies for enhancing the health of Mountain Lake. The Mountain Lake Enhancement Project is a multi-year, multi-phase effort to improve the health of Mountain Lake by removing sediment to deepen the lake and improve water quality, expanding wildlife habitat through landscape restoration, and enhancing the visitor experience. The first phase of the Enhancement Project, which included habitat restoration and new trails and benches along the south and east shores of the lake, was implemented by the Trust, Parks Conservancy and thousands of community volunteers in 2002 and 2003 with funding from the San Francisco International Airport. The 2000 Mountain Lake Enhancement Plan also identified the removal of sediment to deepen the lake as one of the key actions needed to restore the health of Mountain Lake. Deepening the lake will increase the volume of water in the lake and keep the lake water cooler, which will minimize the likelihood of algae blooms and fish kills. Plans to remove sediment from the lake were put on hold in 2002 when it was discovered that the sediment in the lake was contaminated.

What is the Mountain Lake Remediation Project?

Following the discovery of contaminated sediments, the Trust began working with the California Department of Toxic Substances Control (DTSC) to further identify the nature and extent of contaminants in sediment and identify remedial alternatives to address the contamination consistent with the future use of the lake for native habitat and recreational purposes. Dredging the lake to remove the contaminated sediments is the DTSC's approved remedy.

What are the contaminants in Mountain Lake? Is the lake dangerous?

Sediment in the lake contains elevated concentrations of lead and motor oil that historically entered the lake in storm water runoff from Highway 1 and adjacent areas. The contaminants are buried in the lake sediment and do not pose a risk to human health, however they do pose a potential risk to the freshwater aquatic habitat of the lake. Recent tests of sediment and imported sand at the beach area confirm that the beach area is safe for human use and meets ecological standards.

How will the lake be cleaned up?

The Trust will remove contaminated sediment from the lake by dredging. The sediment will be transported via pipeline to a staging area north of the lake where it will be dewatered. The clean water will be returned to the lake and the dried sediment will be transported to and disposed of in a permitted, offsite landfill. The Trust anticipates removal of approximately 15,600 cubic yards of sediment to ensure the lake is healthy for freshwater plants and aquatic organisms. After dredging, the bottom of the lake will be graded to a stable and natural lake configuration.

How will the remediation project impact use and enjoyment of the park?

Construction on the remediation project began in September 2012 and is expected to continue through Spring 2013. The Trust expects that most park areas will remain open for public use for the duration of the project. The following impacts to the park are expected:

- Trees and vegetation will be removed from work areas, including the staging area north of the lake and the east shore spur trail and overlook.
- The staging area north of the lake, the east shore spur trail and overlook, and Mountain Lake beach will be closed for the duration of the project.
- Segments of Mountain Lake Trail and Park Trail around the lake and through the golf course will be intermittently closed during heavy operations. The Trust expects these trails to remain open most days and weekends.

Doesn't run-off from Highway 1 still enter the lake?

Run-off from Highway 1 will be diverted to ensure that untreated run-off from the highway does not re-contaminate lake sediments. The Presidio Golf Course has changed its management practices to reduce the use of pesticides, and run-off from the golf-course is monitored to prevent future contamination. The lake will continue to be monitored for nutrient runoff. Areas with increased levels of sediment or nutrient inflows will be addressed as necessary.

Why is Caltrans working on the roadway?

Caltrans has determined that Highway 1 needs to be reinforced prior to the dredging of Mountain Lake. This work involves the installation of below-grade, stone-filled support columns within the roadway to the west of the Lake. Caltrans is also installing filtration systems within catch basins on the highway to prevent untreated water from entering Mountain Lake. The construction began in July 2012 and is expected to continue until November 2012.

What is the relationship between the remediation project and the broader effort to enhance Mountain Lake?

As described above, the 2000 Mountain Lake Enhancement Plan identified the removal of sediment to deepen the lake as one of the key actions needed to restore the health of Mountain Lake. The removal of contaminated sediment from Mountain Lake for the remediation project is consistent with the Enhancement Plan goal of deepening the lake to enhance the lake's health.

The 2000 Enhancement Plan identified the removal of approximately 11,500 cubic yards of sediment to deepen the lake as a key action. The remediation project will remove approximately 15,600 cubic yards of contaminated sediment. After dredging, the bottom of the lake will be graded to create a stable and more natural lake profile and allow for a slope to discourage undesired plants and encourage submerged aquatic vegetation which will help the lake's water quality and wildlife habitat. Native wildlife will be re-introduced to the lake after it is dredged. The initial stages of non-native turtle and fish relocation to a Sonoma county refuge began in June 2012 and will continue into the next year.

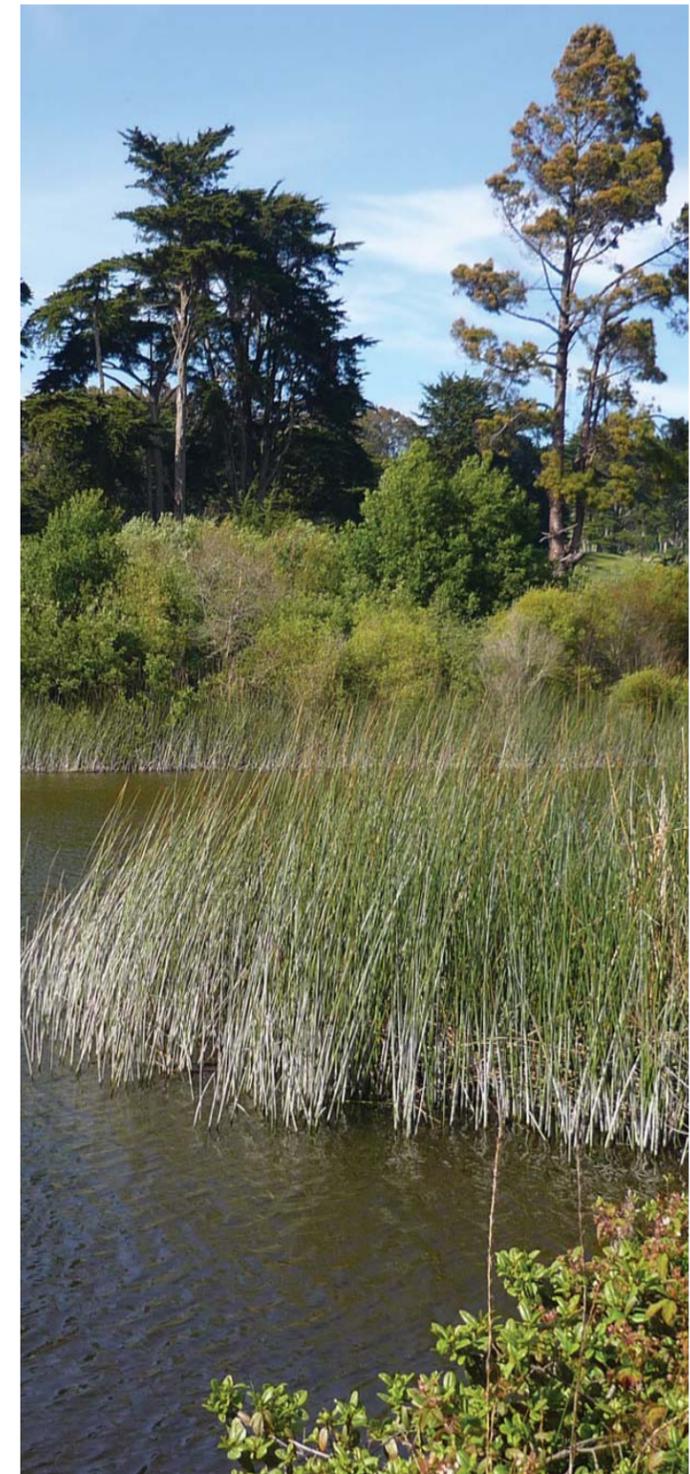
Areas where vegetation is removed to provide access for equipment used as part of the remedial effort will be replanted to restore native habitat, restore forest areas, and buffer views of and noise from Park Presidio. All of these actions, though undertaken as part of our effort to remove contamination from the lake, are consistent with the actions identified in the Enhancement Plan and other Trust land management planning documents.

What other elements of the Enhancement Plan will be implemented following the remediation?

Other actions that will be undertaken include habitat restoration in the north arm and along the west shore of the lake; historic forest preservation along Park Presidio north of the lake and along West Pacific; sediment removal, wetland restoration, and habitat enhancement in the east arm; soil stabilization and drainage improvements along West Pacific and the golf course; introduction of native lake wildlife and submerged aquatic plants; and installation of mechanical aeration to improve water quality in the lake. Interpretative strategies regarding the ecological enhancement actions will be implemented to tell the lake story.

What is the East Arm Project?

As part of the Mountain Lake Enhancement project, the East Arm will be restored to freshwater wetland and riparian woodland. In June 2012, a small amount of soil was moved to improve water flow. In fall 2012, an archaeology project will search for the inlet of a long-buried tunnel that historically extended from the East Arm to an area above El Polín Spring. In 2013, the East Arm wetland will be enlarged. Trees will be removed and the wetland will be graded and planted.



The Future of Mountain Lake



September 2012



Upcoming Activities at Mountain Lake

Coniferous Woodland

After remediation this area will be restored as woodland using a mix of oak, pine, and cypress underplanted with native shrubs such as toyon and coffeeberry.

North Arm Willow Riparian Woodland

Native wetlands and woodland will be restored in the north arm by removing exotics and planting native species such as lady fern, American dogwood, wax myrtle, arroyo willow, and shining willow.

West Shore Buffer

After roadway stabilization and dredging, a dense buffer of shore pine, Bishop pine, native trees, and native shrubs will be planted along the west shore to buffer views of and noise from Park Presidio and to provide wildlife habitat.

East Shore

The east shore overlook disturbed for remediation will be restored with the same mix of wetland, willow woodland, and oak woodland species planted in 2002–2004. The trail and benches will be replaced.

Mountain Lake

15,600 cubic yards of sediment will be dredged to remove contaminants. Native submerged aquatic plant species and native fauna will be reintroduced, mechanical aeration installed, and other adaptive management actions undertaken to improve water quality and enhance the health of the lake.

South Shore Riparian Woodland

Native wetland and willow woodland along the south shore will be protected during construction. After dredging, habitat values in this area will be enhanced through removal of invasive exotics and infill planting of native species such as red alder, American dogwood, wax myrtle, willow, and blue elderberry.

Historic Eucalyptus Forest

Existing historic eucalyptus groves along the south and west edge of the golf course will be preserved. Trees will be pruned to improve their structure and open up their canopy to allow more sunlight into the groves. Invasive understory species will be replaced with native and/or non-invasive horticultural species.

West Pacific

The West Pacific multi-use trail will remain. Gaps in existing forest plantings along the north edge of the historic brick swale will be infilled. Sedimentation in the East Arm will be reduced by stabilizing bare soil and installing bioswales to capture and treat water before it flows into the lake. New opportunities to stop along the trail and view the East Arm will be created.

Preserve Eucalyptus Wind Break In Place

North Arm Wetland

Mountain Lake

South Shore Wetland

East Arm

Sediment and eucalyptus will be removed from the bottom of the east arm to improve air movement, improve drainage, and expand wetland habitat. Native wetland and riparian woodland species such as arroyo willow, red alder, California honeysuckle, and blue elderberry will be planted.

