

## *Horseshoe/Lion Creek Restoration*

*By Eckhart Beatty*

After much research, restoration on Horseshoe Creek (also known as Lion Creek) in the Oakland Hills has finally begun. On October 5, 1995, a contingent of some eighty community volunteers joined together for an annual creek cleanup event. The next day, a group of students enrolled in Dr. Gary Scott's Creek Restoration class at Merritt College spent another full day working on the upper creek channel.

The creek begins at the northern border of Merritt College whose landfill construction some thirty years ago seriously disrupted the creek's natural flow. The head of the creek is accessible via the historic York Trail, which winds down a considerable hill. Here a concrete channel begins and continues down several dozen yards to an energy dissipator installed to decelerate the water that is sent hurtling down the hill by the culvert and channel.

This is a very narrow channel, which UC Berkeley professor Matt Kondolf described as a "straight jacket on a criminally insane person." On either side of the channel grow vigorous stands of French broom, some of the most dense stands found in the Bay Area. Given the plant's density and size near this channel, taking water flow measurements was a challenge. Despite the broom, careful measurements were recorded by groups of Dr. Scott's students at various sites along the upper channel and the creek bed below the dissipator, beyond whose banks changing vertical and horizontal dimensions (signifying ranges of creek flow hydrodynamics under widely varying rainfall patterns) were also recorded.

Brendon DeTemple, a graduate student of creek restoration in one of Dr. Kondolf's classes, joined the students to discuss his plans to conduct a survey and analysis of the concrete channel and the severely eroded bank sides below the dissipator. Using his data, he hopes to demonstrate the feasibility of

removing or modifying the concrete channel with boulders and stabilizing the creek further downstream.

Regardless of the approaches taken toward stabilizing the channel, the goal is to restore the relatively narrow wildlife corridor the creek flows through as closely to its original condition as possible.

Restoration efforts should ideally be site-specific in design. That means that prior to starting any major work, none of the recorded conditions of the Creek's complex ecosystems should be ignored. A key obstacle in the Horseshoe project is finding historical records that indicate as possible the ecosystem's composition before the redwood forest was disrupted by clear-cutting in the 1860s. Only one original-growth redwood in the area is left, although a vigorous stand of second-growth trees lines the channel near the dissipator. It is hoped that someday many more redwoods can be returned to this area.

The work-day in October revolved around removing broom, principally near designated replanted trees. The group used the ingenious newly modified Weed Wrench, which was designed especially to remove broom with relative ease. Given the growth rate of this plant, removing it completely will be a major challenge of this project. A serious fire hazard, broom needs to be removed quickly and completely before the creek restoration can be considered to be complete. The native plants can then thrive, and so too can the animal life which has in effect been banished from its home in this wildlife corridor.

Once completed, the project could be dedicated as a sanctuary to be used as an "outdoor laboratory" with an interpretative trail for the enjoyment of the public and by students at the newly dedicated David Brower / Ron Dellums Self-Reliant House. Students could examine a thriving ecosystem, one that is



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