

Status Report on Native Plant Revegetation Project Dimond Canyon, Oakland, California



Summary

During the dry season of 2001, a creek channel restoration project was constructed on Sausal Creek in Dimond Canyon. Project goals include improving the hydrological functioning of the creek, enhancing aquatic habitat, and replacing invasive exotic vegetation with local native plants.

Failing concrete structures were removed, the creek channel was reconfigured, creekbanks were protected with bioengineering techniques, and areas of adjacent slope were cleared of invasive exotic vegetation. During the rainy season of 2001-2002, neighborhood volunteers placed approximately 20,000 nursery containers representing approximately 60 species of local native plants on the slopes of the canyon.

One year after planting, some areas are almost covered with native vegetation, and some are poised to fill in the next year. Other areas have failed to establish and will need to be replanted this season. While trampling took a major toll, the primary cause of plant mortality appears to be competition from hydroseeded plantings. These introduced species have produced a second generation that is now germinating aggressively, presenting a challenge for the future.

Vegetation was cleared from the creekbanks and from an upslope area of approximately 70,000 square feet. At the conclusion of channel reconstruction in November of 2001, the contractor planted willow brush mats and pole cuttings adjacent to the stream in the channel reconstruction area, supplemented by volunteer grown nursery stock.

Design specifications called a blanket of wood chip mulch to be applied to the land above the creek channel for erosion control. The mulch layer was to

absorb the impact of heavy rains and prevent water from moving quickly downslope, forming channels, and transporting sediment into the creek. A windrow of mulch was to be placed along the upslope side of the trail to catch and filter any small concentrated flows that might develop.

The area between the creek and trail was covered lightly with mulch, as originally specified, but a decision was made during the construction process to use a different approach on the slope above the trail. The slopes were hydroseeded with a mixture of Regreen (a sterile wheat hybrid) and Red Clover, and then covered with an erosion control blanket.

Two small areas of unprotected creekbank suffered minor erosion during the rainy season. Volunteers and city staff replanted both areas. No significant erosion was observed on the upper slopes, except from a tributary stream fed by a storm drain on a city street above.

Throughout the previous year, members of the Friends of Sausal collected seed and cuttings from the local native plant populations and grew nursery stock in the native plant nursery in Joaquin Miller Park. As soon as the canyon was reopened to the public, FOSC began the process of moving container stock into the canyon, where a series of volunteer planting events took place throughout the rainy season.

The upslope replanting effort was hampered by the erosion control blanket, which had to be cut with utility knives for each plant. Synthetic fibers caught on volunteers' shoes, causing difficulty of movement on the slopes. One year later, the organic component of the blanket is beginning to degrade, but the synthetic fiber remains intact. The blanket now presents a barrier to cultivation of emerging annual weeds and resprouting ivy.

Plant loss due to trampling by humans and dogs

began immediately after planting. FOSC volunteers responded by posting signs at the trailhead and in the canyon, and by piling logs and brush on either side of the trail to form a physical barrier. Both actions had notable positive effect. Dense brush piles were particularly effective.

As the season progressed, the wheat grass grew aggressively on the slope above the trail. It blocked sunlight from reaching the young nursery stock, collapsed in dense mats on top of some plants, and competed effectively for remaining soil moisture at the end of the rainy season.

Project specifications called for removal of exotic trees and their stumps in the project area. Most of the exotic trees in the project area were treated in this manner, and resprouting has been minimal. A notable exception is the stand of American Elm that had colonized an area of slope shortly upstream from the El Centro trailhead. These trees were cut to the ground, but were not dug or ground out. They have resprouted aggressively, and have been attacked by volunteers. Continued resprouting is anticipated.

By the end of the dry season, a clear pattern emerged. The areas treated with mulch were relatively well covered with new native plants that had effectively established themselves during the rainy season and had gone into a dry season dormant state. The plantings on the blanketed and hydroseeded slopes had suffered significant (more than half) mortality, and the surviving plants were severely stunted compared to their mulched neighbors.

FOSC designers made plans to replant the failed areas this season with a combination of nursery stock and direct seeding. Those plans are now changing as we see strong germination of both red clover and wheat grass following the first rain of the season. It is clear that there was an error in production, labeling, ordering, or shipping of the wheat grass. The grasses in the canyon are not sterile-in fact, they have produced a strong crop of viable seed. These two newly introduced weeds will limit the effectiveness of direct seeding. New container stock will have to be protected with circles of wood chip mulch, and the entire site will be weed whipped at the end of the growing season in an attempt to prevent the weeds from forming another generation of seed. Repeated grubbing of Elm suckers will also be required,

perhaps for several years.

To conclude, large areas of the revegetation project are clearly successful, and present a model for future projects of this type. In other areas, the use of hydroseed and erosion control blanket, while effectively controlling erosion, has significantly hampered efforts to establish native plants. FOSC has coordinated thousands of volunteer hours in the last year. There is a clear need for continued effort to achieve the goal of a stable, dynamic native plant community.

Michael Thilgen
Friends of Sausal Creek
December 1, 2002