

## 2012 Annual Report Update Irish Canyon Riparian Restoration Project

Over the past three years Save Mount Diablo (SMD) has worked to restore riparian woodland habitat on the 320-acre Irish Canyon property located south of Kreiger Peak in Contra Costa County. Work has been done on behalf of the East Contra Costa Habitat Conservancy (Conservancy) following the conceptual restoration plan designed by HT Harvey and Associates which aims to expand riparian woodland vegetation and enhance habitat for California red-legged frog.

The plan called for planting and caging a mix of oaks and buckeyes at three Channel Enhancement Areas (CEAs) totaling 150 individual sites. Two caging techniques were used. At the largest CEA perimeter fencing was installed around the 100 sites while at two smaller CEAs trees were individually caged. By the end of 2010 we installed tree tubes around the oaks to promote vertical growth and protect the base of their trunks from being girdled by rodents.

At the end of each dry season failed sites are re-planted to bring the total number of trees in each location up to the number set forth in the plan. A series of strong Fall storms in 2011 were followed by a December and January that received barely any moisture so the third year planting was delayed until January 26<sup>th</sup>, 2012. Until then, irrigation flags had been used to mark trees but it became clear that a more permanent solution was needed to keep accurate records of the plantings so the tree tubes and rebar identifying the plants were painted.

Spring rainfall made up for what the winter lacked in moisture meaning access to the site was limited in March and April. Annual grasses and other weeds bolted at the end of March so a considerable amount of weed removal was needed during the spring. A combination of hand-pulling individual sites and mechanical removal around and between sites was an effective way to reduce competition on the plantings. First a 2' area was cleared around each cage (3' area was cleared around each tree tube in CEA 1 since the oaks aren't individually caged) and then volunteers methodically removed all non-native vegetation around and inside the tree tubes.

During two May site visits volunteers cleared weeds around each of the plantings and watered them at all three sites. Initial observations of year 3 plantings showed that newly planted buckeyes in all three of the CEAs germinated. On the contrary many of the year 3 oaks didn't seem to germinate at all. Oaks that had carried over from year 1 and year 2 showed signs of new growth but only a small number of year 3 oaks germinated and began to leaf out. It is likely that the lack of winter rains contributed to the poor germination rate but other potential factors could have been a bad acorn crop, disease or frost.

CEA condition summaries for May:

- CEA 1 had significant mustard growing along the bottom of the ephemeral drainage. The area was mowed to allow volunteer access through the site. Medusahead (*Taeniatherum caput-medusae*) control in June 2011 appears to have reduced the amount of its germination through previous years thatch but additional areas were mowed on May 31<sup>st</sup>, 2012.
- CEA 2 (in channel seep / spring) had experienced a proliferation of bull thistle but hand removal efforts in 2011 and 2012 showed promising signs of improvement. Oaks on western side of channel have shown rapid growth in height and circumference. Buckeyes planted along the margins of the seep/spring show rapid growth.

- CEA 3 is located along a heavily used cattle trail so weeds are less of a problem there compared to the other CEAs. All but one site on the north side of the creek failed – no additional plantings will occur there.

In May there was considerably more rodent activity on the property and within all three CEAs compared to when this project started.

By July the seep at CEA 2, the drainage through CEA 3, and all other tributaries to Irish Creek no longer had surface flow. Additionally the water level at the main pond on the property dropped significantly (it was near capacity throughout the dry season in 2011). Sites were watered every three weeks from May through October with at least one gallon of water per planting. Vole, gopher and ground squirrel activity increased in the late summer and fall months. During July, August and September rodents girdled several 4' oak saplings in all three CEA areas. Only one buckeye sapling was girdled by a small mammal.

In anticipation of replanting over the winter, oak acorns and buckeye seeds were collected from trees along Irish Creek then moved to cold storage at the SMD office. Acorn collection happened on October 4<sup>th</sup> and 10<sup>th</sup> and Buckeyes were collected by David Ogden on November 7<sup>th</sup>, 2012. Failed sites will be replanted in the first week of January 2013.

In November 2012 a total of 106 sites (71%) were occupied by healthy saplings. Breakdown by site: CEA 1 – 50 oaks, 20 buckeyes; CEA 2 – 12 oaks, 6 buckeyes; CEA 3 – 9 oaks, 9 buckeyes. Forty four sites will be re-planted in January 2012.

The HT Harvey plan suggested that restoration areas should be protected and maintained during a three year plant establishment period. Three year old saplings may not need supplemental water in average rainfall years but non-native weeds in and around the planting must be maintained to give the trees better chances for survival. Overgrown sites not only provide cover for rodents which could lead to increased frequency of girdling, but the non-natives compete directly with plantings for space, sun and water. Continued maintenance at the project is recommended to ensure tree establishment.

In the past three years 250 volunteers have worked nearly 2,000 hours on the project. The majority of volunteers who planted trees in early 2010 have returned to most workdays throughout the life of the project and are committed to the success of the planting project.

A reimbursement check from the Conservancy was received for most of the staff time and overhead associated with the project in 2012. A final invoice will be issued to the Conservancy once fourth year planting has taken place in early 2013.

<b>Name of Planting</b>	<b>Date of Planting</b>
First Year Planting	January 24 & 27, 2010
Second Year Planting	December 18, 2010
Third Year Planting	January 26, 2012



# 2011 Annual Report Images

## Irish Canyon Riparian Restoration Project

Prepared by Save Mount Diablo on behalf of the  
East Contra Costa County Habitat Conservancy





Jan 2012 - CEA #3, buckeye planting



Jan 2012 - CEA #1, oak planting





Jan 2012 - CEA #1, native bunchgrass  
within the fenced area



May 2012 - Oak planting hidden by sea  
of annual grass





May 2012 - CEA #3, mechanical weed removal around each caged site



May 2012 - CEA #1, mechanical removal along ephemeral drainage for access





May 2012 - CEA #3, hand pulling weeds within protection cage



May 2012 - CEA #1, newly sprouted buckeye sapling





May 2012 - CEA #1, one of the few year 3 oaks that germinated



May 2012 - CEA #1, year two oak sapling





June 2012 - CEA #3, oak sapling above the tree tube



June 2012 - CEA #3, two year old buck-eye





June 2012 - CEA #1, Medusahead to the right of fenced area



June 2012 - CEA #1, small patch of medusahead mowed within fenced area





Aug 2012 - CEA #2, watering a healthy year one oak sapling



Aug 2012 - CEA #3, two or three year old oak girdled by a vole





Sep 2012 - CEA #2, project volunteer lead, David Ogden



Sep 2012 - CEA #1, the majority of the Irish Canyon Watering Team