

Stabilization and Restoration of Elkhorn Slough Reserve

The Elkhorn Slough Foundation (ESF) is stabilizing and restoring two degraded sand-hills farms in the Elkhorn Slough Watershed. These properties, recently acquired by the Elkhorn Slough Foundation, encompass 125 acres. The Iniguez Ranch drains directly onto the Elkhorn Slough National Estuarine Research Reserve (ESNERR) and the California State Ecological Reserve, managed by the California Department of Fish and Game. The second property, the Renteria Ranch, drains into Carneros Creek – the primary source of fresh water to the estuary.



Planting and watering native grasses (left) and equipment removing buried agricultural plastic on the Iniguez property (right)

The portion of the restoration funded by the California Department of Fish and Game, Office of Spill Prevention and Response (CDFG-OSPR) involved cleaning up old farm debris, recontouring and cover cropping the farm fields, stabilizing eroding land forms, and beginning the process of restoration by planting 4,000 native perennial plants.

The Iniguez property drains directly into a freshwater pond on the reserve that is a known critical breeding area for both the federally threatened California red-legged frog and the federal and state endangered Santa Cruz long-toed salamander. Declines in the frog population were attributed to runoff from previous farm operations. The work on these ranches is both restoring key upland and riparian habitat and eliminating a major threat to the amphibian populations downstream.

Elkhorn Slough, in the central Monterey Bay Area, is an extraordinary coastal environment. It supports remarkable biological diversity and harbors a dozen rare, threatened or endangered species. It is one of the largest tracts of tidal salt marsh remaining in California. The adjoining uplands encompass great diversity of natural habitats, including riparian corridors, oak woodlands, coastal prairie grasslands, central maritime chaparral, coastal sage scrub and coastal dunes.

CDFG, the California Wildlife Conservation Board, ESNERR, ESF, and The Nature Conservancy have collaborated over the past 30 years to acquire, conserve and restore key lands in the Elkhorn Watershed. Collectively, over 15% of the total 45,000 acres in the watershed have been protected.

The project funded by DFG-OSPR involved the following tasks on the Iniguez Ranch and Renteria Ranch properties:

1. Mapping both properties using GIS and identifying key features including:
 - Existing intact habitat
 - Erosional features needing repair
 - Weed infestations
 - Slope and aspect to identify likely restoration target plant communities
 - Historic land use (based on historical aerial photos)

2. Disking farm fields and re-contouring to reduce or eliminate furrows, rills or other impediments to natural water flow. Debris from former operations was removed.
3. Where appropriate, past farm infrastructure such as underground irrigation lines and above ground sediment basins were removed. Lands were re-contoured to a more natural slope.
4. Fields were seeded and mulched with a cover crop of non-invasive plants to stabilize the soil and prevent erosion while preparing for restoration plantings.
5. Invasive non-native plant species were controlled using a combination of manual and chemical means. ESF has a program in place for the follow-up of eradication efforts to insure that the initial investment is maintained.
6. Seed collection for growing native plant restoration material was conducted at reference sites in the watershed owned by ESF and done in accordance with standards set by the California Native Plant Society.
7. Propagation of native plants was performed both in-house in the ESNERR greenhouse and contracted out with a local commercial grower.



Volunteers planting chaparral plants on the Renteria property