

REFLECTIONS ON RESTORING DAMAGED LAND

By Laura Kummerer

“Once the prairie has been restored, it has been understood in a new more accurate way and in an emotional and spiritual way.” William Jordan



West Struve Slough

There are many theories and scientific research papers that provide guidelines of how to restore land. But ultimately the restoration of the land is guided by a deep and ongoing relationship between a human community and the natural world. The Watsonville Wetlands Watch restoration committee has been forming that type of relationship with 110 acres of Ecological Reserve land that surrounds the upper reaches of West Struve slough.

When I bring first time visitors to West Struve slough, they are surprised to see how much life lives and thrives here, wedged between a superhighway, farm fields and machine shops. The water is filled with multitudes of local and migrating birds and the grassy uplands are teeming with meadow voles, ground squirrels and raptors. We all seem to feel that if we could just close our eyes and shut out the sound of the freeway we could put ourselves back in time when the grizzly and the elk roamed the grassy meadows of the Pajaro Valley. The invasive weeds that cover the land, however, are a reminder of the fact that the days of the grizzly and the elk are long past. In looking at the field infested with Harding grass, bristly ox tongue, a blanket of European annual grasses and a myriad of other invasive species, it is hard to believe that this land had once been home to a *coastal prairie* ecosystem which contained the most plant diversity of any grassland in North America. What has happened to the rich past of this land?

Our initial answer to this question was that the rich botanical past of this land is not really gone, it is just smothered by a proliferation of invasive weeds. This view has guided our restoration work. Working with community members, local restoration crews and hundreds of school children, we have removed the weeds from this rich habitat and replanted sensitive areas with local natives. Our efforts are beginning to show results. We are close to eliminating all of the Harding grass and fennel on the property. We have had about an 85-90% survival rate with the areas we have replanted with locally collected coastal prairie plant species. Unfortunately, in areas where we haven't replanted once one invasive species is removed another invasive species is ready to take its place. The slow ability of the rich array of plant species that once dominated this land to bounce back after weed removal has brought us to seek out more answers about the land use history of the Ecological Reserve.

Research has shown that once land has been tilled and fertilized for agriculture, the seeds and plant species that existed before tilling may be lost forever. Essentially intensive agriculture erases the historical 'memory' held by the soil. When Fish and Game purchased the Ecological Reserve for protection in the 1970's it was a cattle ranch; but seeing how so few natives were coming back after the invasive plants have been removed I suspected that the land been tilled before that time, eliminating much of the lands ability to bring back its own richness.

A visit to the UC Santa Cruz map library to look at historic aerial photos of the Ecological Reserve confirmed my fears. The oldest photo was taken in the 1930's. At that time, the uplands of the Ecological Reserve seemed to be grazed but untilled except for a small hay baling operation on its most Northern Peninsula. The 1963 aerial had the clearest resolution of all; it had faint lines delineating row crops where the hay baling operation had been and along the most westerly boundary of the reserve. So although the

Ecological Reserve has been untouched by human activity since the 1970's, the scars of its past may mar it forever, bringing up many questions of how to restore the land.

If the land doesn't have much of its historic memory left to guide us in its restoration, what do we restore this land to? We can look to the small pockets of coastal prairie that remain in the Pajaro Valley watershed to guide us in the restoration. But, the answer to this question is more spiritual and philosophical than it is factual. Since we as humans will never be able to recreate the complex interrelationships between the soil, plants and animals that create a healthy ecosystem, we can only turn to the relationship we are forming with the land we are working on to answer these questions.

In the process of removing weeds from the Ecological Reserve little vestiges of the rich past of this land have been revealed. We have found the graceful leaves of the hill dweller sedge nested under a coyote bush dominated hillock and small patches of two different species of native California bunch grasses are still thriving on the edge of the property. Each day and each season we are out on the land more and more small plants have caught our eye. My favorite is the bloom of the unassuming dainty broomrape. This plant is a saprophyte: it lacks chlorophyll and must form a mutually beneficial relationship with a nearby photosynthesizing plant to receive sugars giving minerals in return. The plant blooms in late August and just sits low to the ground with 20 or so little white/lilac flowers each one as intricate as an orchid.



Little Hill Dweller Sedge

In seeing small pockets of native plants that had once dominated this land, I am still hopeful that we can seek a balance between encouraging the native plant diversity that once thrived along with reintroducing some of what had been lost. The line between restoring the land to a natural and thriving ecosystem and creating a human centric garden is a tough line to walk. The first step I see is that we can continue to encourage the spread of the scattered pockets of native plants on the Reserve through sensitive hand removal of weeds or low impact grazing or a controlled burn in those targeted areas. The second step is to take samples of the first inch of soil from parts of the Ecological Reserve that have not suffered the damage done by agriculture. We can "grow" this soil up in a nursery to see what native plant seeds may be lying dormant in the soil. The natives we find in the "seed bank" will be a guide for our next steps. The final step and most controversial is to expand our replanting efforts by walking every nook and cranny of the slough system to find more and more pockets of coastal prairie species that still thrive to grow up and reintroduce at the Ecological Reserve.

In my heart I am saddened by how damaged the Ecological Reserve land is, and I know that each step in restoring the land is filled with questions and incredible lessons. I know that all of us who have worked and played on this land have been taught priceless lessons about this fragile ecosystem in our backyard. I know we are also being challenged as to how to best be stewards of this land. I would love to hear the thoughts, concerns, doubts and inspiration of others on this topic. One thing I know for sure, restoring the land is not something completed by one small group in a lifetime. It is something that goes on for generations and generations guided by the love, care and sensitivity of many.