

**EXCERPTS FROM**

**FINAL  
AZEVEDO AGRICULTURAL AND NATURAL  
RESOURCE SITE  
MANAGEMENT PLAN**

**February 2000**

## WETLANDS AND NATURAL RESOURCE ENHANCEMENT PROJECTS

There are several planned and ongoing natural resource enhancement projects at the Azevedo site.

### Azevedo Pocket Marsh Enhancement/Santa Cruz Harbor Mitigation Project

The building of the Santa Cruz Harbor resulted in the loss of coastal salt marsh and created a need to re-create three acres of tidal wetland at another location as mitigation. The Elkhorn Slough Wetland Management Plan has also suggested that cleaning material from the existing culverts under the railway dike and excavating deeper ponds in the marshes would create major improvements for the hydrology and wildlife in the pocket marshes.

Philip Williams and Associates completed a hydrologic survey on the pocket marsh areas to evaluate options to implement the mitigation project. The report concluded that by

restoring full tidal circulation to the north marsh, 2.2 acres of new wetland could be created. By removing an earthen berm and failing culvert on the north end, and removing the berm on the south end, the north marsh would be provided with full tidal flushing. According to the report, another 1.7 acres of wetland area could be created in the south marsh by installing two 24-inch diameter culverts at the north end and removing an earthen berm at the south end. The resulting muted tidal regime in the south marsh would have better circulation and water quality than at present, but would have more ponded water than under a fully-tidal regime. The increase in tidal circulation would provide increased concentrations of dissolved oxygen, nutrient exchange, and improved habitat for invertebrates, small fish, and some birds.

To address concerns regarding salt-water intrusion of the site irrigation wells, tidal inflows would not be restored to the middle marsh. Under this scenario, the only inflow into the middle marsh would be rain and runoff from the surrounding areas and upslope pond, making the marsh a fresh/brackish water wetland. Even under these conditions the middle marsh would continue to show salt marsh characteristics due to the soil salinity levels. The soil salts will persist and continue to support salt marsh vegetation until they are adequately leached by the fresh water input. Retaining the middle marsh as a brackish system will increase the biodiversity of the Azevedo site.

Since the preparation of the Phillip Williams and Associates study in 1993, the berm and culvert located at the north pocket marsh have eroded away and the tidal prism in the northern marsh has increased. Additional analysis of the hydrologic regime is being completed by the Elkhorn Slough Foundation and the California State Coastal Conservancy.

### **Revegetation of Upland Buffers**

Once the strawberry cultivation was removed from the steep slopes at the Azevedo property in 1995, the resulting area became a buffer zone between the agricultural activities and the pocket marshes. These buffer areas are owned by The Nature

## 12. Wetland enhancement: creation of new salt marsh

- As part of the enhancement of the Azevedo pocket marshes create three new acres of salt marsh wetlands.

### Recommendations:

- ❑ This concept would be applied to the north and potentially portions of the south marsh. The middle marsh will remain brackish/freshwater to protect irrigation water wells and increase biodiversity. Due to changes in the berm and culvert system at the north marsh, this wetland may already be receiving full tidal inflows and some of the three acres has naturally been restored. The need to restore additional acreage is being evaluated by the ESF and the Coastal Conservancy.
- ❑ The wetland enhancement will use funds set aside from the Port of Santa Cruz. This effort will need to be closely coordinated with the Coastal Conservancy as they are working to get final construction designs done and implement this project.