

Visit report 19/10/16: South Bay Salt Pond Restoration Project

By: Daan Kling

On the 19th of October we visited Eden Landing one of the areas part of the South Bay Salt Pond Restoration Project. Over the last century San Francisco Bay has lost more than 85% of its tidal wetlands. Losing precious habitats and a buffer for flood protection. This project is the largest tidal wetland restoration effort on the west coast and will restore 15,100 acres of former industrial salt ponds to various wetland habitats. The Restoration Project has three main goals: the restoration and enhancement of habitats, providing wildlife-oriented recreation and public access and, improving flood risk management in the South Bay.

The area around the San Francisco has been intensively used by the salt evaporation industry. This industry has its roots with the native Americans who manipulated the marshes to delve salt for trading purposes. This business grew larger and larger exaggerated by the Gold Rush. Until the 1970's this bay was used by multiple smaller scale companies. These companies were bought up by Cargill, Inc. This monopoly in this area made it possible for Cargill to become more efficient and use less land. Under the leadership of Senator Diane Feinstein 15,100 acres of unused ponds could be purchased from Cargill for \$100 million. The areas are now under the federal and state ownership.

The projects first step in Eden Landing was to stop the production of salt in the ponds. Because the salt extraction ponds were a closed system where the water evaporated, these systems had to be opened to let water flow through. Because of a limited budget and the need of the system being sustainable the water control systems have to be reliant on tidal movement. The salt ponds were divided in 56 water control systems.

The second step of the project is experimental. The biologists are trying to build different habitats for the different bird species. Ponds will be artificially kept at different salinity levels. Apart from the difference in salinity the depths and various island are tried out to find out which habitats are most preferable. One of the ponds is even completely drained and leaves a salt plane serving a bird species that settled while the salt industry was booming.

During our visit we could see the result of this first step of the project. The area we visited included many restored ponds in various stages of completion. We saw the ponds with different salinity and also how these wetlands can be used for recreation. The area included a kayak route and a system of walking tracks. The tour also showed the remnants of an old salt company previously owned by the Oliver family. These included remains of an Archimedes screw and foundation of the plants. These wooden structures were well preserved by the salt.

The project faced many difficulties. Firstly, getting the areas designated as wildlife refuge area was hard. This is understandable in an area this densely populated and highly valued. Private developers lobbying efforts were however overthrown by Feinstein. Another problem the project faced were regulations. To prevent the bay from being filled up regulations were put in place. These regulations now prevent the project from putting 30:1 levee slopes in place. These slopes are needed for a gradual transition from tidal wetland to urban area. This problem has not been solved yet and ponds in the area have a slope of 7:1. The third big problem is getting the sediment to the site. The amount of sediment coming in from the rivers is going down but to compensate for the subsidence that has happened in the area. This remains a problem but the project is working on multiple solutions. These include working drenching companies and construction dirt brokers. The final big problem was dealing with an invasive grass species. This grass species was introduced for erosion but soon became

a problem. This grass species is indistinguishable from a native species. This led to the eradication of both species in the project area. The eradication is 90% complete.