

NOTES FROM PRESENTATION: "Creating Wildlife Habitat, Pier 94 San Francisco, Wetlands Restoration"

Following are the notes from the Pier 94 Wetland Enhancement presentation made to the BBCAG on January 20, 2009 by Ms. Noreen Weeden, Chair, S.F. Conservation Committee Golden Gate Audubon Society. For questions and information please contact Noreen Weeden at: noreen@naturetrip.com.

Pier 94 is located On Cargo Way off Third Street on San Francisco's Southern Waterfront. Pier 94 can be reached by Highways 101 and 280 using the Cesar Chavez Street exit.

Pier 94 – a wetland success story

Since the 1800's San Francisco Bay has lost over 90% of its wetlands due to landfill. The Bay is the largest estuary on the Pacific Coast of the US. It is critical habitat for over 250 species of birds along the Pacific Flyway.

These wetlands support over a million migrating shorebirds and water fowl as well as other birds.

Before 1960, Pier 94 was a salt marsh that supported a native plant called California seablite or Suaeda Californica along with other plants and wildlife.

Pier 94 is located along Islais Creek. The property is owned by the Port of San Francisco. Pier 94 was created by approved fill during the 1970s. Construction debris dumped at Pier 94 degraded the habitat value.

Pier 94 is in an area referred to as the Southern Water front of San Francisco.

In 1996, the SS Cape Mohican ship spilled 40,000 gallons of fuel oil into SF Bay damaging the shoreline areas. Approximately 4,000 birds were estimated to have died as a result of the oil spill. The Federal Oil Pollution Act and California Oil Spill Prevention and Response Act were used to develop a restoration plan. This specified how the resource damages were assessed and defined restoration objectives. The total oil spill fines were \$3.6 million for restoration.

The Port of San Francisco proposed that the Pier 94 site could provide rare and valuable habitat to a variety of bird species as well as fish and marine life.

The Restoration Plan specified that Port's proposed Pier 94 wetlands, would meet the fisheries and water quality restoration objectives.

The primary Pier 94 restoration objectives are to provide additional spawning and nursery habitat for marine fish species; provide for aging and roosting habitat for shorebirds, wading birds, waterfowl, passerines, and raptors; and improve water quality by trapping sediments from runoff and filtering out contaminants. Restoring the wetland, would

improve the Bay ecosystem. The community, students, and volunteers would participate in the restoration, and have a meaningful role in the project. A final objective was to provide environmental public use opportunities in an urban part of the Bay. The project objectives would be accomplished by removing debris from the wetland that inhibits tidal flows allowing more habitats for wetland organisms.

The project consisted of restoring five acres of degraded wetland and creating 1.5 acres of new wetland. Although this is a small site it could provide valuable habitat in this very industrialized portion of the Bay shoreline.

Approximately two acres of coyote bush is upland from the wetland and provides habitat for passerine birds and small mammals. The San Francisco Bay Joint Venture had this wetland on their list of priority sites targeted for restoration.

Pier 94 – funding

Coastal Conservancy funding was money from the State of California; Wildlife Conservation Board; Water, Security, Clean Drinking Water; and Coastal & Beach Protection Act of 2002 (Pop 50).

The proposed goal was to restore and enhance pocket tidal marshes. The SF Bay Natural Resource Protection Trust Funds were from oil spill mitigation.

Potential short-term, adverse environmental impacts (for example dust) that may occur during the removal of debris would be addressed through permit requirements.

This shows how the project costs were spent. The construction debris was removed, grading of the site was performed, and non-native cord grass was removed.

Engineers were hired to analyze, assess, document the current and proposed wetland, and develop a wetland enhancement plan. An EIR was conducted for the project.

Pier 94 is a potential location for the Port's future maritime industry expansion – specifically container terminal growth.

Permits for the project were issued on the condition that if the tidal marsh area is needed by the Port in the future and this marsh is removed, then the loss will be mitigated at another location as close to the project site as possible.

The Port spent its' own funds for much of the preliminary work.

Golden Gate Audubon received funds from the Cape Mohican oil spill mitigation fine.

Golden Gate Audubon also applied for and received a US Fish & Wildlife grant for endangered species. This grant was awarded to plant Sea Blite, also know as Suaeda

Californica. At this time the plant was now federally listed as endangered and only a few plants were surviving near Monterrey Bay.

Golden Gate Audubon's project costs

The cost for the sand had to be renegotiated to keep within the budget. Golden Gate Audubon hired Dr. Peter Baye, a coastal plant ecologist, to develop a wetland planting guide in 2005 called "*The Pier 94 Habitat Restoration & Reintroduction of California Sea Blite*". Plants were donated by Literacy for Environmental Justice, a near by non-profit. Volunteers planted plants. Monitoring was conducted by a team of staff from the Port and Golden Gate Audubon as well as volunteers and some students.

Permits

Permits took about 5 months from the date the applications and fees were submitted.

Documents included project plan, wetland plan and maps. Planning included work on site like the grading, temporary storage, placement of the sand, staging plants, planting and having tools and water, training and monitoring.

Support includes site clean up, weeding, evaluations, fixed place photography, and planting.

Army Corps of Engineers – Nationwide 27 & 33 for sand placement.

Bay Conservation & Development Corporation – two permits one for the wetland restoration, one for plants.

California Environmental Quality Act – was considered and a negative declaration or neg.dec. on this project was issued.

State Regional Water Quality Resources Control Board – also considered this project to place the sand and plant the sea blite. They determined that this project was corrective action completing enforcement from the oil spill.

Fish & Wildlife – checked, but no permit was required.

City of San Francisco - issued a permit which was assisted by Port of San Francisco.

The permits required plans from an engineer that were signed off along with fees, applications, background information, and notification to the community and nearby businesses about the project.

Volunteers

The first Volunteer Work Party at the site was held on Earth Day in 2002. At this time the large construction debris had already been removed by the Port's contractors.

Other groups have helped Golden Gate Audubon including Hanson Aggregates and Norcal Waste Management our industrial neighbors adjacent to the site.

Volunteers removed some of the old tires from the wetland. Volunteers have removed tons of trash and worked with local waste management to recycle some items and haul away trash.

Volunteers placed tarps over spartina. Heat from the black plastic and lack of sunlight kills these non-native invasive plants.

Golden Gate Audubon and the Port worked with the Spartina Project to report, evaluate, and remove this non-native plant that can negatively impact a wetland by creating islands.

In January, 2006 heavy equipment was used to move 2,000 tons of rock and sand. The equipment was used to place 1,500 cubic yards of clean SF Bay sand over 28,900 square feet- all according to engineering plans and drawings at Pier 94.

Contractors used a Bobcat (earth moving equipment) to move clean sand into place at the site before the high tides in the winter. Sand was placed at varying depths to be moved into a natural configuration by the high tides

Volunteers helped with planting native plants. Some of the native plants in the upland area include Coyote Bush, Wild Lilac, Lizard Tail, Coffeeberry, California & Dune Sagebrush, Creeping Wild Rye, Bee Plant, Lupine and several other species of plants.

This was prior to removing the large pampas grass behind these volunteers. A backhoe was required to remove this non-native and invasive plant.

In April, 2006 the first Sea Blite or Suaeda Californica was planted at Pier 94.

Quarterly plant monitoring was conducted by trained GGA volunteers often with the Port.

This photo from 2007 shows how the native marsh plants Salt Grass, Pickle Weed and Gum Plant have grown in the wetlands.

Vehicles used to drive onto the wetland area where people would fish or for other purposes. At Golden Gate Audubon's request, the Port placed large concrete k-rails to prevent vehicle access to the site. Note the flags in the ground around the vehicle show where native plants had been planted by volunteers.

Pier 94 is now a restored and healthy marsh

In November, 2007 the Cosco Busan spilled 53,000 gallons of fuel oil into the bay. You can see booms being placed to protect the wetland. Many birds came to Pier 94 after the oil spill. Volunteers reported various species of oiled birds that swam or flew to this site.

Sea Blite or Suaeda Californica– New shoots of seablite have been recorded. The plant is now reproducing on its own on site. This is a photo of the new plants recorded in April, 2008. This site now has the world's largest population of this federally listed as endangered plant.

With funding, support from many partners, cooperation from Governmental agencies, and lots of ongoing help from volunteers Pier 94 is now a restored and healthy marsh which benefits the marine mammals, fish, aquatic invertebrates, birds, plants and more at this urban 6 acre site.

American Avocet and Killdeer nested at the site the following spring.

Additional habitat restoration will greatly enhance the habitat value of the upland area.

In the upland areas passerines have nested at Pier 94.

Uncommon migrant bird species have been using the ponds or mudflats.

In SF Bay we can see many species of water fowl and these unusual birds in the photographs have been reported from Pier 94.

Shorebirds can be seen feeding along the rocks.

Unusual raptor species sighted at Pier 94 included this Short Eared Owl in 2007 and this fall Peregrine Falcons.

This is an American Avocet chick born last year at Pier 94.