A Decade of Progress for the South Bay Salt Pond Restoration Project

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The South Bay Salt Pond Restoration Project (www.southbayrestoration.org) is the largest wetlands restoration project on the West coast of the United States. It is unique not only for its size (over 15,000 acres) but for its location in the middle of one of the nation's largest urban areas. The Project is intended to restore and enhance wetlands in South San Francisco Bay while providing for flood management and wildlife-oriented public access and recreation.

Since the acquisition of the property in 2003, the Project has identified long-term alternatives representing a continuum toward different end-states: one end-state at 50% of the existing ponds converted to managed ponds for waterbirds and 50% restored to salt marsh habitat, and the other end of the continuum at 10% of the existing ponds converted to managed ponds and 90% restored to marsh habitat. The final mixture of managed ponds to salt marsh habitat will depend upon the outcome of the Adaptive Management Plan, which will be implemented over the next several decades and will allow for lessons learned from earlier phases and applied studies to be incorporated into subsequent stages as management plans and designs of future actions are updated.

This presentation will provide an overview of the restoration planning and actions completed over the past 10 years, and will include successes, challenges and lessons learned to date.

Keywords: Salt Pond Restoration, Wetlands, Adaptive Management

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Speaker Biography: John Bourgeois became Executive Project Manager of the South Bay Salt Pond Restoration project in December 2009. For over 12 years, he worked as a restoration ecologist with the Bay Area ecological consulting firm H. T. Harvey & Associates where he worked on the planning for the Project, as well as other closely related projects. Prior to coming to California, John worked on wetland issues at the USGS National Wetland Research Center, the Coastal Restoration Division of the Louisiana Department of Natural Resources, and the U.S. Forest Service's Institute of Pacific Islands Forestry. John has a M.S. from the University of Louisiana at Lafayette, a B.S. from Tulane University.

North Bay Wetland Restoration

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The San Francisco Bay is the largest estuary system on the Pacific coasts of North and South America and has tremendous value to birds, fish, other wildlife, and people. Prior to large-scale European settlement the entire San Francisco Bay was ringed by extensive, miles-wide tidal marshes. By the late 1950s, nearly 90% of these marshlands had been diked or filled bay-wide and 80% in San Pablo Bay. In the lower floodplains of San Pablo Bay's northern edge, several large tributaries including Petaluma River, Tolay Creek, Sonoma Creek, and the Napa River nourished tens of thousands of acres of mudflats and estuarine tidal wetlands. The vast majority of these low-lying areas were diked off for agriculture, development, and commercial salt production.

In the 1990's California Department of Fish and Wildlife purchased nearly 10,000 acres of former salt production ponds, creating an unprecedented restoration opportunity on a vast landscape scale. A second large acquisition of the Napa salt production facility known as Napa Plant Site added another 1,360 acres. Both the subsequent restoration of tidal hydrology to the salt production ponds and the pending addition of key parcels such as Cullinan Ranch, Sears Point, and Skaggs Island will make substantial progress towards restoring the San Pablo Baylands.

In partnership with Department of Fish and Wildlife, US Fish and Wildlife Service, and Sonoma Land Trust, Ducks Unlimited has had the unique opportunity to work with a broad suite of funding and regulatory partners, and other technical experts to help plan, design, and implement many of these projects. This talk will highlight the collaborative nature of these projects and will reflect on project challenges, key monitoring results, and emerging evidence of species utilization of restored habitats.

Keywords: San Francisco Estuary, Restoration, San Pablo Bay, Tidal, Wildlife, Monitoring

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Speaker Biography: Dr. Spenst has 13 years project management experience, including federal regulatory compliance, coordinating with various stakeholders, and writing and administering grants. Dr. Spenst currently oversees over $10 million in funding to restore, enhance, or conserve wetland and associated upland habitat on more than 8,500 acres. She coordinates and implements conservation and restoration in the greater San Francisco Bay region. She has extensive experience providing scientific expertise in project design and implementation, working collaboratively with landowners and partners, providing budget oversight for 15 projects, grant writing and management, preparation of permit applications and environmental documents, and regional planning and coordination. She has taught college courses in Biology, Ecology, and Habitat Restoration and Conservation.

Completing the Hamilton Wetland Restoration Project: Are We There Yet?

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The Hamilton Wetland Restoration Project is a joint project between the US Army Corps of Engineers, San Francisco District and the California State Coastal Conservancy. The project was authorized by Congress in 1999 as an ecosystem restoration project to be carried out by the Army Corps under its civil works authority. The entire project involves nearly 2,600 acres of land of which 744 acres constitutes the former Hamilton Army Airfield. The Airfield was closed in the 1980s and transferred to the California State Coastal Conservancy under the Base Realignment and Closure Act program. This land was once tidal marsh on the shore of San Pablo Bay that was "reclaimed' (diked and drained) for farming in the late 1800's. Then, in the 1920's, the Airfield replaced the farm and became a major base through the Korean and Vietnam conflicts. Due to natural oxidation of the peat soils, the ground surface has subsided some six feet below mean sea level. So in order to restore the tidal marsh, the site has been filled with nearly six million cubic yards of clean sediment from Bay Area dredging projects. Over a period of about three years (2008-2011), dredged sediment, which would have otherwise been dumped in the bay and ocean, was pumped ashore through a 5.5 mile-long pipeline, entirely covering up the long-abandoned runway. This fall the Army Corps will be grading some of the site to ponds and channels and then in early 2014 the outboard levee will be opened up to the tides and the project will be complete. In addition the Army Corps will be constructing a 2.7 mile trail along the western perimeter of the site. It will be a segment of the San Francisco Bay Trail, which is an effort to build a trail around the SF Bay.

Keywords: Hamilton, Army, Airfield, Wetland, Restoration, Corps of Engineers, Dredged Sediment

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Speaker Biography: Thomas Gandesbery, Project Manager, San Francisco Bay Conservancy, CA. State Coastal Conservancy. Tom has worked at the Coastal Conservancy on the Hamilton Wetland Restoration Project and other bay area projects for over a decade. Previously to his current position, he was employed at the Regional Water Quality Control Board, SF Bay Area, where he worked on dredging and contaminated sediment issues, creek restoration, and groundwater monitoring and remediation. He lives in the East Bay, has two teenage children and enjoys windsurfing and bicycling.

Nearshore Linkages: The Roles of Native Oysters and Eelgrass as Living Shorelines

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The San Francisco Bay Living Shorelines: Near-shore Linkages Project has the overarching goal of creating biologically rich and diverse shallow habitats, including eelgrass and oyster reefs, as part of a self-sustaining estuary system that restores ecological function and is resilient to changing environmental conditions. This project builds on our previous work that advanced restoration methodologies and understanding of constraints and opportunities for both eelgrass and native oysters. Such habitat features, if scaled up beyond previous projects, have the potential to positively influence physical processes (such as waves and sediment transport) that determine shoreline morphology. In this project, we are further testing restoration methods as well as evaluating effects on habitat values and shoreline processes. Plots (32 x 10 m) of oyster substrate (shell-bag mounds), eelgrass, or the two together, are being compared to an un-manipulated control plot along the San Rafael shoreline in the first phase of the project. Preliminary data show that restored habitat promotes increased abundance of numerous organisms, with several native invertebrates reproducing on the oyster substrates. Native oysters have recruited in large numbers to the shell bag mounds, particularly on north-facing, vertical, or lower-elevation surfaces that likely minimize thermal stress. Birds such as black oystercatcher and several wader species increased in density at treatment plots in comparison to pre-treatment and control densities. Two large wind-wave events in spring 2013 at the San Rafael site led to preliminary findings of reduced waves in plots with added structure at particular water elevations. Small plots (1-m^2) at San Rafael and Hayward testing various oyster restoration substrates are permitting comparisons of native oyster recruitment by substrate and by site. This project will advance our understanding of restoration methodologies with an eye towards both habitat creation and shoreline protection in an era of rising seas and increasing storm surges.

Keywords: Eelgrass, Oyster, Restoration, Living Shoreline, Birds, Sediment, Waves

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Speaker Biography: Dr. Katharyn Boyer is Associate Professor of Biology at San Francisco State University's Romberg Tiburon Center. Her research is focused on the ecology and restoration of coastal habitats, primarily submerged vegetation and salt marshes. She is particularly interested in how species interact to structure their environments and influence fundamental ecosystem processes. Her work includes comparisons of functioning (e.g., trophic interactions, nutrient dynamics) of natural and restored habitats, development and experimental testing of restoration techniques and nutrient pollution indicators, evaluation of the effects of biodiversity, and assessment and prediction of invasive species effects on native communities.