November 2023

Delta Restoration Forum

Showcased Projects and Programs

Delta Plan Interagency Implementation Committee

DELTA STEWARDSHIP COUNCIL

The Delta Plan and Restoration

The Delta Reform Act of 2009 called for the Delta Plan to provide a long-term approach to restoring habitat within the Delta and its watershed. The approach must advance the State's coequal goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem while protecting and enhancing the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place. Adopted in 2013, the Delta Plan initially relied on the emerging Bay-Delta Conservation Plan (BDCP) to provide a framework for ecosystem restoration in the Delta. When the State pivoted away from the BDCP in 2015, it became critical for the Delta Stewardship Council to fill the resulting gap and amend the Delta Plan to provide a framework to guide long-term regional restoration efforts, considering changes in land use, climate, regulations, and the latest restoration science. **In June 2022, the Council amended the Delta Plan to provide a comprehensive approach to ecosystem protection, restoration, and enhancement in the Delta.**

The amended Delta Plan Chapter Four ("Protect, Restore, and Enhance the Delta Ecosystem"), referred to as the "Ecosystem Amendment," includes amended regulatory policies, recommendations, performance measures, and CEQA mitigation measures. **The Ecosystem Amendment sets a target of restoring 60,000-80,000 acres of new functional, diverse, and interconnected habitat across the Delta and Suisun Marsh**, including specific acreages by ecosystem type (specified in Performance Measure 4.16). Progress has been made in achieving these targets, but much work remains.

The Ecosystem Amendment presents **five core strategies** to achieve the coequal goal of protecting, restoring, and enhancing the Delta ecosystem. One of these core strategies is to improve institutional coordination to support the implementation of ecosystem protection, restoration, and enhancement. In response, **the Delta Plan Interagency Implementation Committee (DPIIC) established a Restoration Subcommittee in 2022 to identify and implement strategies for reducing barriers to landscape-scale restoration and increasing estuary-wide restoration coordination.**

The Restoration Subcommittee is the host of the Delta Restoration Forum series. Following the first Delta Restoration Forum in February 2023, we asked participants what they would like to see in a future Forum. The following feedback was integrated into the planning process for the second Delta Restoration Forum: 1) host an event in the Delta in the evening to make it more accessible to community members, 2) focus content on planned and implemented restoration projects, and 3) broaden the involvement of community groups in planning. Thank you to our planning committee members for this Forum: Doug Brown (Douglas Environmental), Gilbert Cosio (River Delta Consulting), Sara Medina (Restore the Delta), and Ivan Senock (Buena Vista Rancheria of Me-Wuk Indians).

- *To learn more about the Ecosystem Amendment, visit deltacouncil.ca.gov/delta-plan/amendments.*
- *To learn more about the DPIIC Restoration Subcommittee, visit deltacouncil.ca.gov/dpiic/initiatives.*

Email dpiicrestorationsubcommittee@deltacouncil.ca.gov with any questions or to request to view posters and handouts presented at this Forum.

Showcased Projects & Programs

- Center for Land-Based Learning – Student and Landowner Education and Watershed (SLEWS) Program & SLEWS Academy
- Mormon Slough Project
- BirdReturns Program
- Department of Water Resources (DWR) Suisun Marsh Tidal Habitat Restoration Projects
- DWR Delta Habitat Restoration Efforts
- California Department of Fish and Wildlife (CDFW) Restoration Permitting Support and Grant Funding
- Lookout Slough Tidal Habitat Restoration Project
- Dutch Slough Tidal Marsh Restoration Project
- Knightsen Wetland Restoration Project
- Promoting Natural Recruitment for Ecosystem Resilience in Process-Based Floodplain Habitat Restoration
- Sacramento-San Joaquin Delta Conservancy Funding Programs
- Staten Island Wetland Project & Delta Rice Conversion Program
- U.S. Army Corps of Engineers Floodplain Reconnection
- California Department of Parks and Recreation Aquatic Invasive Plant Control Program
- Lower Peters Pocket Feasibility Study, Van Buskirk Multi-Benefit Ecosystem Restoration Project, Turning Point Preserve Multi-Benefit Ecosystem Restoration, Oakley Creekside Park Restoration Project
- San Francisco Estuary Institute's Landscape Scenario Planning Tool
- Tide's End Multibenefit Restoration Project & Nigiri Managed Floodplain Restoration Project

Center for Land-Based Learning – Student and Landowner Education and Watershed (SLEWS) Program & SLEWS Academy

Presented by Allie Dumas, Center for Land-Based Learning, allie@landbasedlearning.org.

The Student and Landowner Education and Watershed Stewardship (SLEWS) Program encourages high school students to dig into habitat restoration through real projects on farms, ranches, and open spaces. Hands-in-the-dirt experiences bring science to life and stimulate environmental stewardship connecting youth to real, tangible solutions for big problems like climate change and habitat loss. Through multi-phased fieldwork and associated in-class lessons, students build knowledge, perspective, and personal connection to the land. Each cohort is matched with a regional restoration project and participates in ecological field studies where youth discover careers and college opportunities in natural resource management and environmental science.

SLEWS Academy builds off the SLEWS program by training educators and natural resource professionals in creating meaningful, hands-on, habitat restoration-focused programs for high school youth in schools and communities throughout California. SLEWS Academy consists of a 3-day Intensive Training Kickoff (January 30- February 1, 2024) to learn the ins and outs of the program, six monthly online group sessions, individual program support in planning your program, access to the SLEWS network-organizations involved with SLEWS, and a 2-day culminating retreat (August 21-22, 2024), where participants share their program implementation plan and receive feedback.

Mormon Slough Project

Presented by Sara Medina (sara@restorethedelta.org) and Artie Valencia (artie@restorethedelta.org), Restore the Delta.

We will be presenting on a restoration project we are currently convening here in the Stockton, urban Delta region called Mormon Slough. This project is so important because of the benefits this restoration would bring not only to the city but to the Delta as well. The visions of this project are:

- Potential for fish restoration and harmful algal blooms (HABs) mitigation due to increased flow.
- Improved levees for enhanced protection and a green belt system along the slough with parks that will provide cooling for urban communities that experience extreme heat during the summer. Stockton is expected to be as hot as a barstool by 2050.
- Relocation of the unhoused population in a way that increases housing and doesn't cause displacement.
- Economic development: an opportunity for local businesses and entrepreneurs to rent abandoned lots.
- Public access to waterways in a community that has been disconnected for decades.

- Multi-benefits of floodplain restoration.

BirdReturns Program

Presented by Xeronimo Castaneda (xcastaneda@audubon.org), Audubon California; and William Abbott (william.abbott@tnc.org), The Nature Conservancy:

Since its launch in 2014, BirdReturns has been supporting farmers and wetland managers to adaptively manage their lands to benefit waterbirds. Now, with funding from the CDFW, the Migratory Bird Conservation Partnership (Audubon California, Point Blue Conservation Science, and The Nature Conservancy) is expanding the BirdReturns Program to include additional geographies, incorporate new seasons, and increase participation. Private wetlands compose sixty-five percent of remnant wetland habitat in the Central Valley, making them important habitat strongholds. Many of these wetlands are managed to provide waterfowl habitat and subsequent hunting opportunities. By adjusting management of water depth and timing, private wetlands can meet habitat needs for a greater diversity of waterbird species. Encouraging the management of wetlands and farmlands to provide multiple benefits to wildlife is especially important during different life stages, including for migrating shorebirds and molting waterfowl.

Department of Water Resources Suisun Marsh Tidal Habitat Restoration Projects

Presented by Phillip Choy, DWR, philip.choy@water.ca.gov.

Tidal habitat restoration projects in Suisun Marsh are managed by the DWR Suisun Marsh Program and/or the DWR and CDFW Fish Restoration Program. Active restoration of tidal marshes in Suisun Marsh is important for protecting and expanding native fish and wildlife habitat. Since the late 1960s, scientists and land managers have recognized threats to Suisun Marsh from increasing urban growth in Solano County. State agencies and Suisun Marsh landowners collaborated to sponsor, support, and enact laws to preserve, protect, enhance, and restore the Suisun Marsh to ensure that it remains a healthy ecosystem for wildlife.

To restore tidal marshes, scientists focus on restoring tidal action, the natural movement of tide water, across the marsh plain. This is done by creating new channels, breaching levees, and removing water-control structures. It takes many years to complete a project from initial planning and design to construction. Visitors may see cranes, barges, and other heavy equipment during construction. Once restored, land managers monitor and maintain these restored tidal marshes to ensure that the habitat continues to provide the intended ecological benefits.

Department of Water Resources Delta Habitat Restoration Efforts

Presented by Charlotte Biggs, DWR, charlotte.biggs@water.ca.gov.

An update on DWR's habitat restoration efforts in the Delta.

CDFW Restoration Permitting Support and Grant Funding

Presented by Peter McHugh, CDFW, peter.mchugh@wildlife.ca.gov.

An overview of opportunities for restoration permitting support/efficiencies and grant funding available through the CDFW, with an emphasis on the Delta setting.

Lookout Slough Tidal Habitat Restoration Project

Presented by Michelle Jesperson, DWR, michelle.jesperson@water.ca.gov.

The Lookout Slough Tidal Habitat Restoration and Flood Improvement Project (Project) is a multibenefit habitat restoration project being implemented through a public-private partnership between DWR, Ecosystem Investment Partners (EIP) and Reclamation District 2098. This multi-benefit project will restore over 3,100 acres of freshwater tidal wetland habitat within the Cache Slough Complex and increase the flood conveyance capacity of the lower Yolo Bypass, thus reducing flood risk. This project is relevant to the Delta restoration efforts due to its size, unique approach to project implementation, including how the project is design to provide benefits for multiple species, reflects collaborative design between species experts, agency personnel, the project design team, tribes, other interested parties, addresses climate impacts of sea level rise and incorporates new public access points to facilitate water-based recreational opportunities.

Dutch Slough Tidal Marsh Restoration Project

Presented by Katherine Bandy, DWR, katherine.bandy@water.ca.gov.

The Dutch Slough Tidal Marsh Restoration Project includes restoration of a mosaic of habitat types built under an adaptive management framework to provide critical habitat for native species, shoreline access and educational opportunities, and a place to inform future Delta restoration. This project protects 1,187 acres of land formerly slated for urban development in the Delta. About 700 acres were recently restored and another 477 acres are in planning, expected to go to construction in 2025. Fish, wildlife, carbon sequestration, and sea level rise accommodation studies are providing information about the early lessons learned from implementation, which could have implications for Delta and other wetland restoration efforts.

Knightsen Wetland Restoration Project

Presented by Abigail Fateman, East Contra Costa County Habitat Conservancy, abigail.fateman@dcd.cccounty.us.

The Knightsen Wetland Restoration project will restore a 645-acre agricultural property to a mosaic of upland and wetland habitats to support special status species in the western Delta. The project will restore freshwater tidal flows to a portion of the site via No Name Slough and work with the natural land gradient in the area to target the restoration of other transition habitats. The East Contra Costa County Habitat Conservancy has been working to develop the project since before the site was acquired (2017). Work completed (or already underway) includes site assessments, hydrologic studies, stakeholder outreach, project design, and permitting. The project is estimated to start the construction phase in 2025.

Promoting Natural Recruitment for Ecosystem Resilience in Process-Based Floodplain Habitat Restoration

Presented by Jennifer Burt (jburt@geiconsultants.com) and Vance Howard (vhoward@geiconsultants.com), GEI Consultants, Inc.

We present a poster on facilitated natural-recruitment approaches to vegetation establishment in riverine and floodplain restoration, as a cost-effective and likely more naturally adaptable solution than horticultural restoration approaches in the appropriate environmental setting. In the poster, we review and compare multiple Delta and Central Valley restoration sites to highlight the benefits of harnessing natural recruitment in process-based habitat restoration. We illustrate how this approach may help meet challenges that intensify with our changing climate (such as extended droughts, heat stress, severe floods, and plant pathogens). We also describe critical factors that affect the likelihood of successful restoration using an assisted natural recruitment approach, by reviewing commonalities among successful process-based floodplain habitat restoration projects and describing how site selection and management approaches may vary from the traditional horticultural restoration mindset.

Sacramento-San Joaquin Delta Conservancy Funding Programs

Presented by Anjali Shakya, Sacramento San Joaquin Delta Conservancy (SSJDC), anjali.shakya@deltaconservancy.ca.gov.

The Ecosystem Restoration and Climate Adaptation Program at SSJDC has recently awarded 34.2 million dollars for ecosystem and climate restoration projects in the Delta, totaling over 11,000 acres in the Delta as part of the Nature Based Solutions: Wetland Restoration funding. Through Proposition 1 funding, this program also supports a variety of planning

and implementation projects throughout the legal Delta and Suisun Marsh. The agency has also received funding for wildfires and is currently conducting outreach about the best use of those funds to support the Delta.

Staten Island Wetland Project & Delta Rice Conversion Program

Presented by Jerred Dixon, The Nature Conservancy / Conservation Farms & Ranches, jerred.dixon@tnc.org:

The Staten Island wetland project encompasses 1000 acres converted from dry land farming to semi-permanent wetlands and seasonal wetlands. The Delta Rice Conversion Program pays farmers to convert to rice from dry land farming.

U.S. Army Corps of Engineers Floodplain Reconnection

Presented by Nicole Schleeter, U.S. Army Corps of Engineers, nicole.m.schleeter@usace.army.mil.

Reconnecting the floodplain to provide food generation and habitat while completing compensatory mitigation within the federal channel.

California Department of Parks and Recreation Aquatic Invasive Plant Control Program

Presented by Jeffrey Caudill (jeffrey.caudill@parks.ca.gov) and Edward Hard (edward.hard@parks.ca.gov), California Department of Parks and Recreation - Division of Boating and Waterways:

The Aquatic Invasive Plant Control Program has helped control aquatic invasive plants in the Delta for 40 years. Our poster showcases a study of the Franks Tract site that has been treated for Submersed Aquatic Vegetation (SAV) over 12 years where the plant species diversity has changed from mostly invasive to mostly native plants following treatment.

Lower Peters Pocket Feasibility Study, Van Buskirk Multi-Benefit Ecosystem Restoration Project, Turning Point Preserve Multi-Benefit Ecosystem Restoration, Oakley Creekside Park Restoration Project

Presented by Julia Sullivan, American Rivers, jsullivan@americanrivers.org:

American Rivers is working with a team of consultants to complete a feasibility study at ***Lower Peters Pocket***, which is located within the Cache Slough Complex, a region with the greatest amount of restored tidal marshlands in the Delta intermixed with agricultural lands, riparian habitats, and vast vernal pool landscapes. Lower Peters Pocket is ideally suited for critical ecosystem restoration and recovery. American Rivers, along with its partners, is developing a roadmap to implementation for a multi-benefit project at the site

that will reconnect the Peters Pocket property to the tidal waterways that run alongside it, thereby restoring the ecosystem benefits that daily tidal inundation and connectivity provide. The project will also be designed to support ongoing agricultural uses and preserve the integrity of prime agricultural lands within the Delta.

Van Buskirk Multi-Benefit Ecosystem Restoration Project: Located on the San Joaquin River, this project has the potential to be the next "jewel of Stockton," similar to the beloved American River Parkway in Sacramento. This project is a unique opportunity to create a multi-benefit ecosystem restoration project in a world-class park that highlights the Delta's natural beauty and creates much-needed benefits and opportunities for the historically underserved communities in south Stockton. American Rivers and Restore the Delta are working with project partners to enhance flood protection for south Stockton, improve wetland and floodplain habitat for fish and wildlife, and create river-focused opportunities for public access, environmental education, and economic activity that are consistent with local needs, interests, and values. By aligning parallel planning efforts by the City of Stockton, San Joaquin Area Flood Control Agency, and the U.S. Army Corps of Engineers to repair levees and convert a former municipal golf course into a park, this project will address the needs of local communities and ecosystems.

Turning Point Preserve Multi-Benefit Ecosystem Restoration: The U.S. Bureau of Reclamation (USBOR) recently awarded $10 million through its Central Valley Project Improvement Act Fisheries Habitat and Facilities Improvement Program to American Rivers for the initial restoration of nearly 200 acres of native habitat on property historically referred to as China Bend on River Garden Farms and what project proponents now call the Turning Point Preserve. Over the next five years, 200-acres will be restored to native floodplain habitat to benefit endangered salmon and other imperiled wildlife. As part of the revitalization, the historical floodplain will be reconnected with the Sacramento River to boost flood safety for downstream communities, recharge groundwater aquifers, and restore historic features of the meandering river for both ecological and community benefits. The statewide river-restoration nonprofit River Partners will oversee on-the-ground restoration. American Rivers, a national organization working to protect and restore all rivers, will lead overall project management. The effort is part of the regional Floodplain Forward initiative and coalition to expand floodplain habitat to benefit recovering salmon populations in the Sacramento River Watershed.

Oakley Creekside Park Restoration Project: The City of Oakley, American Rivers, and our partners are working to complete design and permitting for a multi-benefit ecosystem restoration project that will improve riparian and floodplain habitat on 2.4 acres along 705-linear feet of the Marsh Creek channel. The project will convert the denuded flood control channel into a healthy stream corridor and develop a long-term land management strategy for the project site. The proposed project is just upstream from a restoration project the

City of Oakley implemented in 2012 and would increase the riparian area that the City has restored along Marsh Creek from 850 linear feet and 3 acres, to 1,555 linear feet and 5.4 acres. Marsh Creek is located in eastern Contra Costa County and flows between the Delta and Mount Diablo, providing an important ecological corridor in a rapidly urbanizing area. Despite the pace of urbanization over the last two decades, there is still an opportunity to preserve and restore a riparian corridor through the communities of Brentwood and Oakley. American Rivers' vision for Marsh Creek, which the City of Oakley shares, is a stream of clean, cool water, surrounded by stands of native trees and a spread of grasses and wildflowers—a vital and healthy habitat corridor between protected conservation areas on the Delta shoreline and Mount Diablo State Park. Over the past decade, American Rivers, the City of Oakley, and our project partners have been working to achieve this vision, organizing community members, building a fish ladder, and advancing restoration of riparian areas and floodplains along the creek.

San Francisco Estuary Institute's Landscape Scenario Planning Tool

Presented by Karen Verpeet, San Francisco Estuary Institute (SFEI), karenv@sfei.org.

As climate change exacerbates the region's vulnerabilities, resource managers, planners, and other decision makers must weigh multiple objectives for ecosystems and communities. A resilient future for the Delta and Suisun requires landscape-scale planning that considers multiple ecosystem functions and services. Designed to inform restoration planning in the region, the San Francisco Estuary Institute's Landscape Scenario Planning Tool (LSPT) quantifies how projects may affect different priorities, such as supporting healthy native fish populations, reversing land subsidence, and sequestering carbon. Bringing together a decade of research and peer-reviewed methods, the LSPT helps users create land use scenarios, efficiently evaluate their benefits and tradeoffs, and quantify progress towards regional goals.

Tide's End Multibenefit Restoration Project & Nigiri Managed Floodplain Restoration Project

Contact: Stephanie Freed, Ecosystem Investment Partners (EIP), stephanie@ecosystempartners.com. Note EIP was not able to present at the Delta Restoration Forum.

Tide's End Multibenefit Restoration Project: Tide's End encompasses about 2,160 acres and occurs within a 10-mile corridor of continuous wetland habitat within the Yolo Bypass, stretching from the southern tip of Lookout Slough to the Vic Fazio Wildlife Area, at the critical fluvial-tidal interface for fish habitat. The Project provides the ability for inland migration of tidal wetland habitat with sea-level rise and restoration of tidal marsh, optimization of seasonal floodplain habitat for species benefits of managed agriculture

(rice production) and managed wetland floodplain habitat (waterfowl hunting). The Project will remove or improve existing obstructions to fish passage, such as existing agricultural check berms and derelict managed pond sills, to recover volitional passage of fish onto and off the site; while working with adjacent neighbors to maintain and improve water supply and drainage.

Nigiri Managed Floodplain Restoration Project: The Nigiri Project is located on 4,042 acres of agricultural land located in the northern portion of Yolo Bypass, just below the Sacramento River's Fremont Weir. The University of California, Davis Center for Watershed Sciences has been conducting and publishing research on the Project location for over a decade, demonstrating that ongoing rice and row crop farming can be implemented to be complementary to restoring floodplain function for the benefit of migrating salmon and for bird species.

The Project provides the opportunity to integrate research, active farming, and ecosystem restoration through the following activities:

- Provide a working agricultural landscape that supports food, fish, and bird habitat, and the collaborative research which can lead to science-based adaptive management solutions.
- Actively manage inundation of floodplains on approximately 3,200 acres to provide wet-year conditions in dry years and support a healthier ecosystem during those years.
- Measurably increase densities of zooplankton and invertebrates to benefit fish.
- Provide winter habitat for migrating birds that benefit from the varied depths of floodplain habitat at key times.