SFCWA State and Federal Contractors Water Agency

FACT SHEET

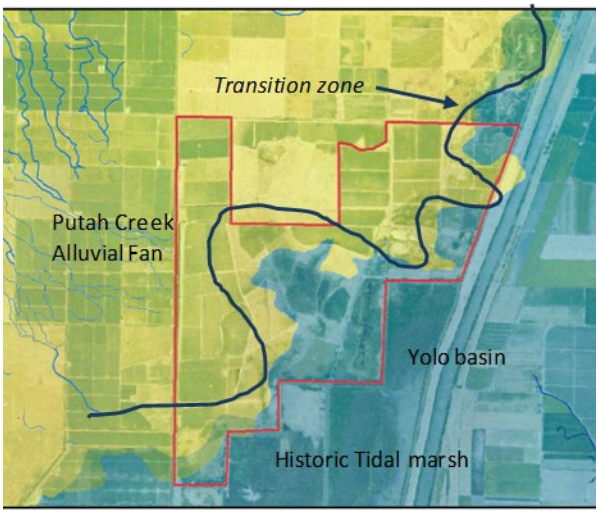
Lower Yolo Ranch Habitat Restoration (13-20, 13-26, 14-02, 14-03, 14-04)

Deliverables: Various reports on program design and monitoring program requirements, map-based landscape conceptual models for major habitat types, 100 printed copies of "Sacramento-San Joaquin Delta Historical Ecology Investigation: Exploring Pattern and Process."

Status: Technical design team meetings complete. Monitoring program requirements in development. Landscape conceptual models completed. This project is related to 14-07 Lower Yolo Ranch Habitat Restoration Project Continuous Monitoring Station at Liberty Cut.

Primary Investigator: Ramona Swenson, Robin Grossinger	**Recipient Organization:** Cardno-ENTRIX, Bruce Herbold, John Durand, ESA Associates, Aquatic Science Center
Project Cost: $226,120	**SFCWA Funding:** $226,120

Partners: California Department of Water Resources (DWR). Costs of agreements 13-20-1, 13-20-2, 13-20-3, 14-02, 14-03, 14-04 will be reimbursable to SFCWA once a crediting agreement is developed with DWR.



The historic landscape context of Lower Yolo Ranch (Grossinger).

Introduction

The Bay-Delta region was historically a vast area of tidal marshland spanning about 700 square-miles. The construction of more than 1,100 miles of levees has eliminated 95% of the region's original wetlands. Restoring wetlands in strategic locations is part of a comprehensive approach to reversing the ecological decline of the Delta. The Lower Yolo Ranch restoration project is part of an adaptive management approach to enhance foodweb support, assess the relative benefits of different habitats for fish, quantify the production and transport of food, and understand how fish species take advantage of new habitat. The Lower Yolo Ranch restoration project is expected to be a template for larger-scale restoration projects under the Bay Delta Conservation Plan .

Objective

To design and implement a habitat restoration project in a priority restoration zone that benefits native fishes, especially endangered species.

Results

- Dr. Robin Grossinger assessed the site's regional landscape and historic ecological context.
- Expert panel (Dr. Bruce Herbold, Dr. Jon Durand, Dr. Eric Ginney) recommended design modifications to improve project benefits to native fishes and formulated hypotheses to test.
- Monitoring requirements should include measurement of nutrient and food web fluxes from the project site.

Conclusions

The Lower Yolo site occupies a unique transition in the historic landscape between the Yolo flood basin, Putah Creek alluvial fan, and North Delta tidal marshes. Sites like this at the Delta's periphery present the best opportunities for restoration due to the remaining topographic variability and complex transition zones. The design should 'tip' the landscape toward a more resilient, productive ecological trajectory. The panel developed several hypotheses to test how this project may subsidize the food-web for fish, such as examining (1) residence time of water on the site and the effects on productivity, and (2) tidal pumping to export of food from the site. Monitoring parameters to evaluate effectiveness and test hypotheses were identified.

Relevance

The Bay Delta Conservation Plan incorporates a habitat restoration program on a scale that has never been attempted in the western U.S. Restoration will take place over decades. Implementation of initial small-scale projects in an adaptive management framework will provide the knowledge necessary to successfully undertake larger-scale projects.

Next Steps

Finalize project design and monitoring program framework.

Lower Yolo Ranch natural environment.