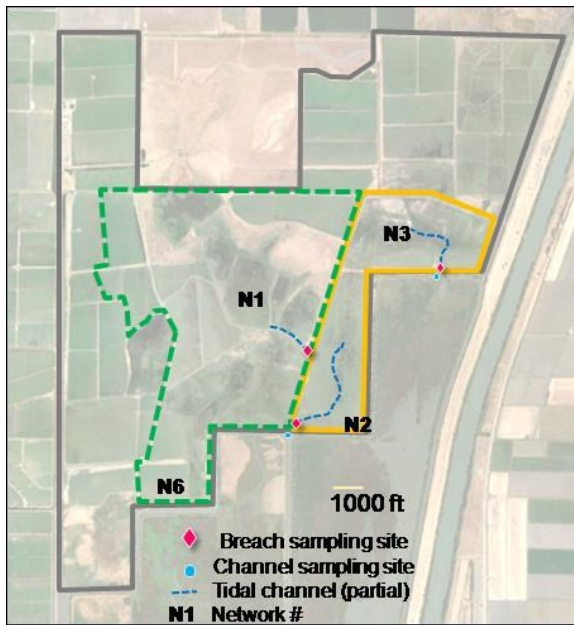


FACT SHEET

Lower Yolo Ranch Restoration Project Monitoring Plan

Deliverables: Core monitoring plan to assess effectiveness of the lower Yolo restoration project.	
Status: Monitoring plan incorporated into the Lower Yolo Long Term Management Plan (November 2013 version).	
Primary Investigator: Ramona Swenson	Recipient Organization: Cardno-ENTRIX,
Project Cost:	SFCWA Funding:
Partners:	



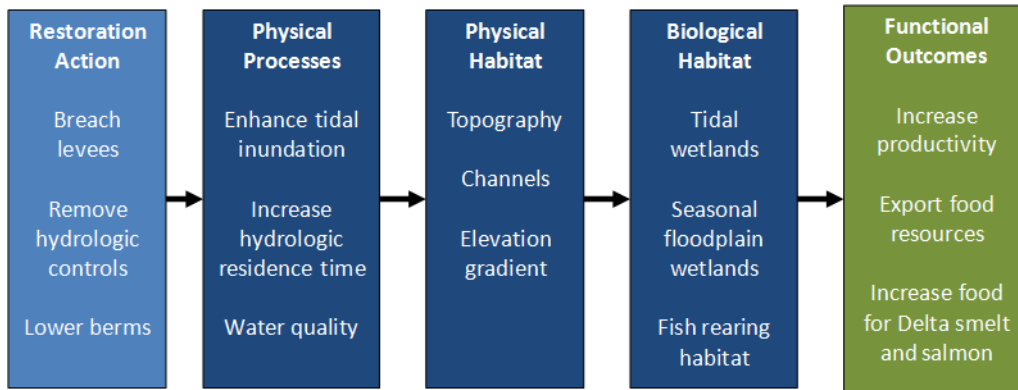
Conceptual design of sampling sites at the restored units (networks)

Introduction

The Lower Yolo Ranch Restoration Project will restore tidal wetlands to enhance aquatic food production and export to benefit delta smelt and migrating juvenile salmonids. Information is needed to track progress towards functional outcomes, evaluate effectiveness of habitat restoration actions, provide insights into key uncertainties, and inform decision making pertinent to adaptive management. A monitoring plan is required under the FRPA Implementation Plan for the FAST crediting.

Objective

To develop a framework for effectiveness monitoring, as part of the Long Term Management Plan.



Core monitoring parameters identified for each stage of the restoration process.

Results

The Lower Yolo monitoring framework focuses on site-specific sampling that can be implemented by SFCWA to document constructed outputs and demonstrate project effectiveness. Monitoring is the systematic measurement of key indicators of structure and function that are expected from the Project. We identified monitoring parameters for each objective and stage of restoration to document actions implemented, structural changes produced, and ecological functional outcomes achieved.

Uncertainties exist about how much food will be produced and exported from the site to the region. The expert panel identified hypotheses about foodweb flux, and the USGS has started developing separate study plans. While applied studies such as this are outside the scope of SFCWA's core monitoring program, selection of common monitoring parameters and sampling sites will leverage investments and knowledge gained. Scientists from the Interagency Ecological Program, USGS and UC Davis provided input on sampling design and similar studies and monitoring efforts.

Conclusions

The plan proposes periodic surveys of landscape features and physical conditions, post-construction and every few years after for the project lifespan. More intensive monitoring during early implementation (years 1-5) would include (1) automated monitoring stations to measure key hydrodynamic parameters (such as inundation regime on the site) and (2) seasonal sampling of aquatic foodweb and water quality parameters timed to the tidal cycle to measure food production and export from the site in wet and dry seasons. Annual qualitative surveys of vegetation are also included for permit compliance and long term site management.

Relevance

Extensive habitat restoration is planned for the Delta, both for OCAP BiOps requirements and the Bay Delta Conservation Plan. However, no Delta-wide monitoring and research framework is yet established. CDFW, DWR, IEP and the FAST agencies are interested in developing guidance for effectiveness monitoring, but these efforts are more focused at the regional or programmatic scale. The Lower Yolo Project's core monitoring framework fills an important gap at the project-scale, and can serve as a template for other effectiveness monitoring that will be required for future projects.

Next Steps

Detailed protocols will be developed after the final design is completed. Available data on existing conditions is being compiled to provide a basis for comparison with post-project conditions. Ongoing coordination with regional efforts will leverage monitoring investments, provide context for evaluating Lower Yolo outcomes, and support region-wide evaluation of restoration success.