Hill Slough Tidal Marsh Restoration Project

Final Report to the Natural Resource Trustee Council Representatives

Background

On 27 April 2004, an underground 14-inch diameter petroleum pipeline owned or operated by Kinder Morgan Energy Partners, L.P. and SFPP L.P. (the responsible parties) ruptured and discharged approximately 123,774 gallons of diesel fuel into a managed marsh in Suisun Marsh, Solano County, California.

Following the initial response activities, the Natural Resource Trustees (in this case, the United States Fish and Wildlife Service [USFWS] and the California Department of Fish and Wildlife [CDFW]) along with the responsible parties cooperatively developed a natural resource damage assessment (NRDA) for natural resources, including both plants and animals, affected by the discharge. The NRDA was followed by a monetary settlement for projects to compensate for injuries and a damage assessment and restoration plan (DARP). The Natural Resource Trustees entered into a Memorandum of Understanding (MOU) dated July 24, 2008 for the purpose of coordinating their trust responsibilities and utilizing the settlement monies for restoring, rehabilitating, replacing, and/or acquiring the equivalent of injured natural resources resulting from the spill. The MOU established a Trustee Council to oversee restoration planning and implementation and associated management of the settlement money.

In 2010, the DARP identified two restoration projects within Suisun Marsh, with a combined cost of $950,000, which could best compensate the public for the loss of the damaged natural resources. One project restored tidal flow to a managed marsh (originally $800,000 [later $952,000]), and the other controlled the invasive weed perennial pepperweed (*Lepidium latifolium*) at a cost of $150,000. This report addresses only the tidal restoration project.

The Hill Slough Tidal Restoration Project (Project) comprises approximately 850 acres within the CDFW Hill Slough Wildlife Area, on the northern margin of Suisun Marsh. The Project, formerly a collection of diked ponds and upland habitat, is adjacent to existing tidal marsh on the east, south, and west sides. The project was completed in 2022 and now creates a contiguous tidal marsh of approximately 2,860 acres.

Location of project

The Project is on the Hill Slough Wildlife Area, on the northern edge of Suisun Marsh. Grizzly Island Road bisects the Project.

Objectives of project

The primary objective of the Project was to restore natural hydrologic processes, which will aid in the recovery of listed plant and wildlife species while contributing to primary productivity in the estuary. The Project is also expected to provide additional tidal marsh habitat to offset loss of listed fish habitat from lower water levels and flow during drought years.

Performance criteria and monitoring

A Monitoring and Adaptive Management Plan (December 2016) was developed for this Project. The MAMP is a plan for tracking Project progress toward meeting stated physical and biological objectives, ensuring that regulatory compliance standards are met, and guiding site management activities.
This MAMP provides the following information:

1. A data collection and analysis program to track Project progress and compliance with regulatory compliance standards.

2. Physical and biological performance metrics and success criteria, based on the Project objectives, to evaluate the collected data and make assessments on Project progress and compliance.

3. Management actions, or a process for developing such actions, to address potential adverse conditions that may arise.

4. Management triggers that would indicate the need to implement one or more of the potential management actions.

5. Responsibilities for implementing the MAMP, and reporting guidelines, schedules, etc.

Annual reports and data generated for this Project will be provided to the Trustee Council upon request.

Tasks accomplished in 2021-2022

Five tasks were completed for the portion of the Project funded by the DARP.

Task 1. Mobilization, site preparation, and vegetation removal. In 2021, prior to levee lowering and breaching, vegetation was removed/reduced using blade trimmers or mowers, or by flooding. Suisun Marsh Aster (*Symphyotrichum lentum*), California Rare Plant Rank 1B.2, plants occurring at breach sites were relocated elsewhere on site using an excavator (photo 1).

Task 2. Construction management and environmental fees. Ducks Unlimited oversaw the project, coordinated with subcontractors, and paid annual permit fees.

Task 3. Earth moving. Two ponds required interior recontouring (photo 2). The excavated soil was used on site for other aspects of the project where higher ground was required for upland refugia, such as for a habitat levee on the west side of the project.

Task 4. Water control structure removal and/or installation. Existing water control structures were removed. Culverts and new water control structures were installed to improve water circulation and management in the managed pond.

Task 5. Levee breaches and levee lowering. Some levees were lowered and the soil used on site as part of the project. Levees were breached in 12 locations (photo 3).

Additional tasks were completed in 2021-2022.

In 2022, a loop trail connecting to Suisun City's Grizzly Island Trail was completed along with three interpretive signs, bench, and trash receptacle (photos 4 and 5).

This is the final report summarizing activities from 2021-2022.

Reference

California Department of Fish and Wildlife. 2020. Exhibit A – Scope of Work and Budget: Hill Slough Tidal Marsh Restoration Project. 4 pp.

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June 30, 2023

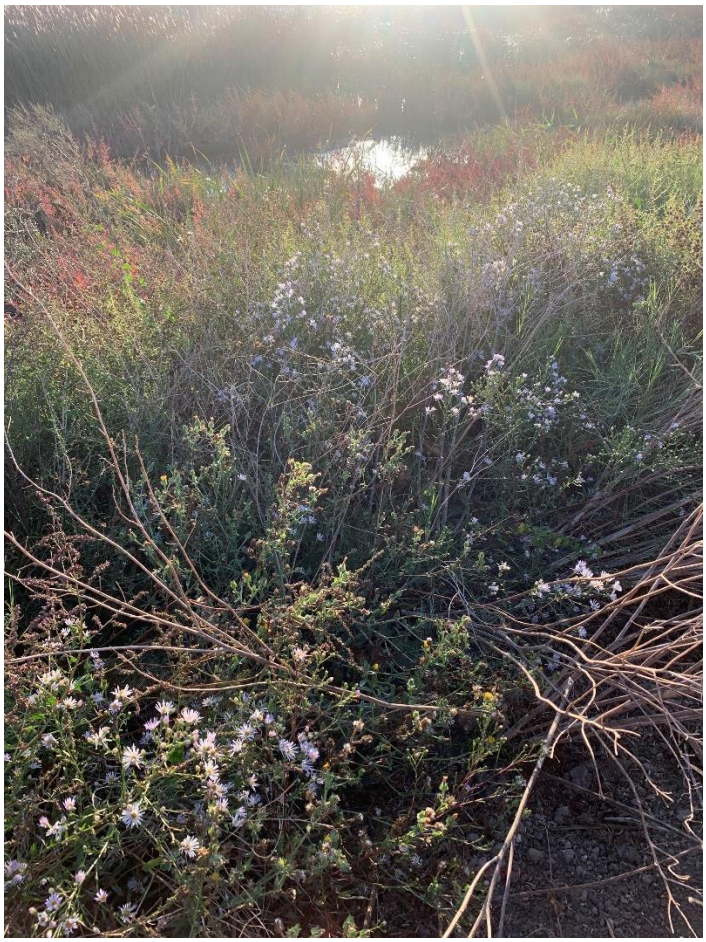

Photo 1: Relocated Suisun Marsh aster near breach W3 at Hill Slough, October 5, 2022, one year post-relocation.

Photo 2: Excavated swale in Pond 4.

Photo 3. First breach at W5, near Grizzly Island Road Bridge.

Photo 4: Sign and bench at Hill Slough Restoration Pond 6.

Photo 5: Sign at Pond 5 with acknowledgements.