

# **CDFW Completes Drought Related Restoration Project at Lindsey Slough, Solano County**

December 19, 2014

The California Department of Fish and Wildlife (CDFW) recently completed an important watershed project for the benefit of fish and wildlife impacted by the state's historic drought. The Lindsey Slough Restoration Project in Solano County was completed at Calhoun Cut Ecological Reserve in November.

The entire project included excavation and placement of fill at the historic Lindsey Slough to reestablish tidal connection to the historic marsh and channel system and enhance existing marsh habitat and associated vernal pools and grassland.

The 965-acre reserve is situated at the northwest fringe of the historical Sacramento-San Joaquin Delta, just west of the confluence of Lindsey Slough, Barker Slough and Calhoun Cut within the Cache Slough tidal drainage, and east of Solano Land Trust's Jepson Prairie Preserve.

Lindsey Slough was historically influenced by the tidal flows of the San Francisco Bay estuary, with backwater flooding from the Sacramento River, and by runoff from the local watersheds. The area of Lindsey Slough was historically part of this extensive Delta system, which flooded and then drained slowly into the bay.

Dredging and levee building in the 1860s substantially changed the Delta, converting tidal marshes into agricultural land. By the 1920s, the Delta's large tidal marsh system had become a series of altered channels and leveed islands used for farming. These changes eliminated not only 95 percent of historical freshwater tidal marshes, but also much of the natural dendritic channel system that provided fish and wildlife habitat.

Calhoun Cut was originally dredged to accommodate boat traffic to the yet-to-be-constructed "Solano City" in 1913. The 1913 project cut off two arms of Lindsey Slough with levees and made a shortcut to the point where Highway 113 is today. Subsequently, an earthen causeway was constructed across the eastern end of the southern arm of Lindsey Slough, isolating 87 acres of wetlands from tidal action. Solano City, promoted by Patrick Calhoun and billed as "the greatest city ever planned," never materialized.

A one-mile tidal channel was excavated along the historic southern arm of Lindsey Slough that was cut off from tidal flows for more than 100 years. The southern berm of Calhoun Cut was breached to allow full tidal connection between the southern arm and Calhoun Cut. The eroded earthen berm across the historic northern arm of Lindsey Slough, just upstream of Calhoun Cut, was enlarged (widened and deepened) and a culvert, tide gate and rip rap were removed from the breach opening.

The new channel meanders through tule marsh, mudflats, willows and riparian forest where bank and in-stream vegetation, logs and exposed tree roots offer variable water depths, substrates and currents. These attributes provide complex high value feeding areas and escape cover for numerous fish species. Such habitat is rare elsewhere in Delta waterways due to levee construction and maintenance.

The freshwater tidal marsh habitat of Barker Slough and Lindsey Slough is believed (based on collection of larval fish) to provide important spawning habitat for Delta smelt, especially in dry water years such as 2012-2014. Other fish commonly associated with this area include longfin smelt, prickly sculpin, bigscale logperch, inland silverside, striped bass, threadfin shad, white catfish, several species of gobies, centrarchids and cyprinids.

The project enhances fish and wildlife habitat for both the Calhoun Cut Ecological Reserve and the privately owned Peterson property, which share a boundary along Lindsey Slough. Fish and wildlife species expected to benefit by the restoration include Delta smelt, Chinook salmon, northern river otter, California black rail, western pond turtle and giant garter snake. Plant species expected to repopulate the channel edges include Delta tule pea and Suisun Marsh aster.

This project was successfully completed thanks to the cooperation of the Reddick and Davis family whose property adjoins the reserve. This project was completed as part of a series of actions taken in response to the Governor's Drought Executive Order directing the CDFW to immediately implement projects that respond to drought conditions through habitat restoration on property owned or managed by CDFW for the benefit of fish and wildlife impacted by the drought.

For more information on CDFW drought actions, please visit [www.wildlife.ca.gov/drought](http://www.wildlife.ca.gov/drought).

**Media Contacts:**

Greg Martinelli, CDFW Bay Delta Region, (707) 944-5570

Andrew Hughan, CDFW Communications, (916) 322-8844