Restoring wetlands for the Lost River and shortnose suckers at the Williamson River Delta

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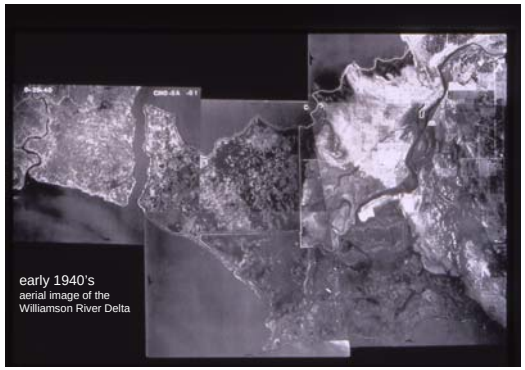
Williamson River Delta history

Historically the riverbanks and lake shoreline were lined with dense stands of willow and cottonwood, along with patches of emergent species such as tule and cattail. The vegetation was structurally complex and provided important aquatic habitat for fish and wildlife.

This is the earliest available photograph of the area and it best illustrates the delta and river channel in its historic condition.



By the mid 1990's the delta was converted to a patchwork of agricultural lands by the construction of 22 miles of levee. These levees removed connectivity between the river, lake, and wetlands, and significantly reduced the length of the lower river. These changes affected water quality and eliminated the once extensive vegetation, important habitat for native fish and wildlife.

Wetlands restoration

Project objectives

Restore 5800 acres of riparian and lake-fringe habitat to provide rearing habitat for larval suckers

Improve water quality in Upper Klamath Lake through reduction of nutrients being released from agricultural runoff and increased uptake of nutrients in newly developing wetlands.

Restoration includes

- Re-establishing native wetland and upland vegetation
- Recreating historic channels at the river mouth
- Restoring historic oxbow channel to allow continuous flow
- Breaching lakeshore levees to create diverse habitat features
- Lowering lake levees to create riparian fringe habitat
- Protecting cultural heritage
- From 2000 to 2010, construction related costs for the entire restoration project estimated at $10 million

Working with Partners

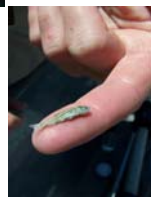
The Conservancy is working with the Natural Resources Conservation Service, National Fish and Wildlife Foundation, U.S. Fish and Wildlife Service, Bureau of Reclamation, PacifiCorp, Upper Klamath Basin Working Group, The Klamath Tribes, Oregon Watershed Enhancement Board, North American Wetlands Conservation Council, congressional groups and community groups.

On the ground restoration of the 7,500 acre Williamson River Delta began in 2006 with internal levee removal and creation of a riparian bench along the western bank of the Williamson River. In 2007 levees along the Williamson River and both Agency and Upper Klamath Lakes were breached using explosives and through mechanical means to allow approximately 2500 acres to flood.

Lost River and shortnose larval suckers

Key Outcomes

- Restoration at the Williamson River Delta will provide up to 5500 acres of potential larval sucker rearing habitat
- Larvae prefer shallow, vegetated habitats
- Larvae used newly restored wetland areas
- Larvae in restored areas are well fed and larger than larvae in unrestored lakeshore areas

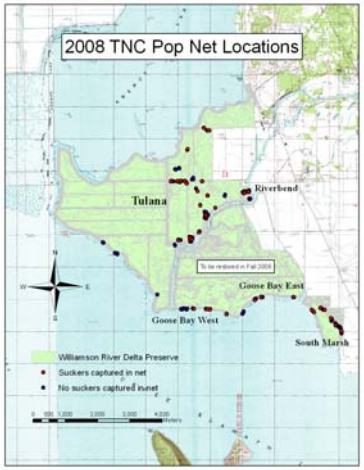


A larval sucker about 12mm long and an approximately 20 mm long sucker captured in Tulana wetlands in 2008.

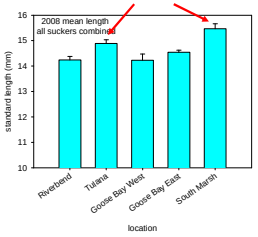
Dip nets are used to collect larval suckers captured in a 1.5m square "pop" nets in Tulana. This net was placed in water without vegetation, although the nets are used in vegetated areas as well. All nets were set in water less than 1.2 meters deep.

Captured larval suckers are preserved in alcohol for further analysis.

The map below shows the locations where nets were set to capture suckers in 2008. Red dots indicate positive sucker catches in "pop" nets, while black dots indicate no suckers were captured. Many suckers were found in the newly flooded shallow areas of Tulana.



The average length of captured suckers was greater in Tulana and South Marsh, a previously restored wetland.



Suckers captured in Riverbend, Tulana, and South Marsh (all restored wetlands) had more food in their stomachs than fish captured in lakeshore fringe wetlands.