

Trickle Fill Project

West Tule Creek, South Fork of the Trinity River



Tule Creek is a major tributary to Hayfork Creek and is one of the most productive tributaries in the Trinity River Basin. Unlike other streams along the South Fork of the Trinity River, Tule Creek was not heavily mined in the 1800's. This lack of dredge and placer mining has preserved the natural habitat and has critical habitat for state and federally listed coho salmon, Fall and Spring Chinook salmon and steelhead.

Since the 1880's, most of the lower gradient alluvial lands in West Tule Creek have been used for agricultural purposes. Anthropogenic activities have led to stream incision which have dewatered local groundwater tables; that coupled with irrigation water withdrawals for pasture and hay production has altered streamflow hydrology. Instream diversion structures have limited access by fish to the upper reaches of the watershed.



Figure 1. One of five fields being irrigated using water from the trickle fill pond.



Figure 2. The trickle fill pond is being filled prior to the forbearance period. Note the orange ball attached to a float valve to stop the flow when the pond is full.

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In 2017, the [Watershed Research and Training Center \(WRTC\)](#), based in Hayfork, California began working on the West Tule Creek Fish Passage and Trickle Fill Project.



Figure 3. The current diversion that will be replaced with a fish friendly structure.



Figure 4. The current fish screen that will be replaced with a lower maintenance screen.

The goal was to remove an existing fish barrier and replace the diversion with a fish friendly structure and fish screen. The project also upgraded the current irrigation infrastructure from an “on-demand” to a “trickle-fill” system that utilized a pre-existing storage pond. This new “trickle-fill” system would deliver a smaller amount of water to the pond consistently. The existing “on-demand” system diverted a larger amount of water from the stream- resulting in the periodic drying of West Tule Creek downstream.

The Watershed Center consulted with the landowner on project design and wrote, secured, and managed 3 state and federal grants, and evaluated for effectiveness of the new system.

The “trickle-fill” project was tested and completed in the spring of 2021. The fish passage barrier is scheduled for removal in 2023. The landowner designed and completed most of the irrigation infrastructure work on their own with assistance from WRTC and engineers.

This improvement to irrigation infrastructure has reduced the water needed for irrigation by approximately 1.50 cubic feet per second (2.98 acre-feet/day) and has allowed for enough storage in the pond for irrigation so that the diversion from the stream was reduced to only domestic uses by July 1st, leaving water in West Tule Creek when summer base flows are at their lowest. The “trickle fill” system eliminated the large fluctuations in stream flow that would traditionally cause the creek to dry up and has improved aquatic habitat for 0.5 miles downstream. It is anticipated that the landowners will utilize CA Water Code § 1707 to legally protect this saved water instream for fish and wildlife.