

Stockwater and Irrigation Efficiency Projects

Little Shasta River, Siskiyou County, California



The Little Shasta River is a tributary to the Shasta River—historically one of the most productive salmon streams in the Klamath Basin—with spring driven flows providing cold water that could support salmon and steelhead during the hot and arid summer months. Anecdotally, in the mid to late 1800's, community members would use pitchforks to harvest hundreds of salmon each year as the fish were making their trip upstream to spawn.

However, around this same time, agricultural users began to use this cold spring water year-round for the irrigation of pasture and hay production and to provide water for livestock, often using leaky and inefficient earthen ditches to transport the water. This year-round water use, coupled with the increased demand for water over time, has resulted in the Little Shasta River becoming disconnected on an annual basis. Unsurprisingly, this lack of water limits the ability of salmon and steelhead to return and thrive.

In 2017 the Hart Ranch, in partnership with California Trout, began the planning, design, and implementation of an irrigation efficiency and stockwater improvement



Figure 1. Improved stockwater trough. Approximately 15 were installed throughout the ranch to provide greater grazing flexibility and improved management practices.



Figure 2. New mainline system

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Figure 3. Main tank of new pressurized stockwater system which will allow for more efficient year-round livestock watering and will remove cattle from the stream



Figure 4. Alfalfa riser gives more control over flood irrigation

project to improve irrigation practices and permanently improve conditions in the Little Shasta.

The goal of this project was to replace some of the ranch's leakiest ditches with pipeline so that the landowner could irrigate pastures and deliver water to livestock more effectively, thus enabling the ranch to return some of the conserved water back to the river for the benefit of fish and wildlife.

California Trout, along with its partners, wrote, secured, and managed multiple state and federal grants in support of this project; in doing so negotiating and executing agreements with the landowner and subcontractors; securing permits; and overseeing several years of implementation.

Installation of the irrigation pipelines occurred in 2018, enabling the ranch to improve its irrigation practices and productivity. In early 2023, construction of the new stockwater system was completed, a testament to the hard work and efforts by the project partners and implementation team, all of whom remained committed throughout the lengthy project schedule and COVID-related delays.

As a result of improved irrigation and stockwater systems, the Hart Ranch was able to use CA Water Code section 1707 to change its water rights and permanently dedicate 0.5 cfs of water year-round for the benefit of fish and wildlife, as well as permissively dedicate the remainder of its water rights, approximately 18 cfs. Additionally, the upgraded on-farm infrastructure has allowed the ranch to more efficiently utilize its water resources and improve its ranch management practices—demonstrating that fish, stream ecology, and private property owners can all benefit from a properly designed project.



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