

## Shasta Riparian Working Group Collaborating for Improved Restoration Success

December 15, 2016

The Shasta River Riparian Working Group (SRRWG) is a mixture of private landowners, and local, state, and federal staff working to improve the health of the Shasta River riparian zone. The riparian area is the interface between land and neighboring rivers or wetlands, and is an important ecosystem transition zone, or ecotone, that can help reduce the amount of solar (radiant) heating of water surfaces. Lower

hanging riparian leaves and branches provide cover habitat for juvenile fish while also providing protection from both aquatic and terrestrial predators. When riparian trees grow large enough to supply instream large woody debris, they can create desirable hydrologic conditions, such as scour pools, wetted side channels, etc. that are favored by salmon during various life-stages. In addition, riparian restoration benefits many riparian obligate bird species, including neo-tropical songbirds, such as the Yellow Warbler, Yellow-breasted Chat and the Willow Flycatcher – which are all California Species of Concern. The restoration and protection of riparian corridors in the Shasta River also assist the agricultural community in meeting Clean Water Act (TMDL) goals.

The group was founded to coordinate riparian planting efforts and to foster a greater understanding of the riparian ecosystem in the Shasta Valley. Tree planting along the Shasta River is fraught with challenges. Historical planting projects on the Shasta River have yielded low survival rates with managers anecdotally confirming 5-year outplant survival rates of less than 50%. In riparian areas, the soil can be too wet and low in oxygen, too high in salts, or most often too dry seasonally for trees to



survive - due to dropping groundwater levels during the summer. There are a number of things you need to consider when you plant trees: the species and stock type - whether to use seedling, rooted plant cutting or an unrooted pole; when trees should be planted (spring versus fall); and the best locations to plant.

*Picture 1- Heather Wood with NRCS removing buried caging and t-posts from an old planting project, for re-use in new planting efforts*

The group has focused on improving techniques and success rates for riparian plantings by evaluating past planting projects and sharing this information with interested parties. Plantings completed by the working group are generally done on private land in partnership with the landowners, to supplement other ongoing restoration projects. Starting in 2010, The Nature Conservancy (TNC) has planted over

6000 riparian trees along roughly 10 miles of the Shasta River and Big Springs Creek. Careful monitoring completed by TNC scientists has helped to identify which planting techniques are the most successful and what distance from the stream trees must be planted to survive. This information led to the development of the Riparian Planting Suitability Model developed by the United States Fish and Wildlife Service and the Riparian Working group- which tells us where the best places to plant are.

*Picture 2 – Snapshot of Riparian Planting Suitability Model for a reach of the Shasta River*



Over the past two years, the group has had two riparian planting events, two beaver protection cage pulling days, and a tour of Beaver Dam Analogue Project in the Scott Valley. Past work has included monitoring historic riparian plantings and conducting experimental riparian plantings.



*Photo 3- Sheri Hagwood (USFWS) outplants willow and water birch trees at riparian planting event.*

The Shasta River Riparian Working Group has also supported University of Idaho Master's student Allison Lutes (Dr. Anthony Davis research group) to continue riparian research on the Shasta. Allison and the Riparian Working group conducted an experimental planting of 240 willow poles on TNC's Nelson Ranch in November 2015. Willow poles were planted with a vented tree shelter, non-vented tree shelter or control; to assess whether either of these planting methodologies- which have been successful in other semi-arid regions- will increase survival rates. Lutes is also monitoring groundwater draw down rates, plant moisture stress, and soil moisture levels, in addition to plant survival, as part of her research.

*Photo 4 – Allison Lutes (right) and fellow University of Idaho research graduate student Matt Davis (left) conducting plant moisture stress tests on Arroyo and Red willow leaves Aug 2016. Lutes and Davis are part of Dr. Anthony Davis' research group focused on applied problem solving as it pertains to native plant establishment.*



The SRRWG meets quarterly and has riparian working days throughout the year. Partners include Shasta Valley Resource Conservation District, The Nature Conservancy, United States Fish and Wildlife Service, Natural Resource Conservation Service, US Forest Service, California Department of Fish and Wildlife, NOAA Fisheries, and the Northern Coast Regional Water Quality Control Board. The group will meet next on March 09, 2017 at the USFWS office in Yreka.



*Picture 5 – Ada Fowler and Chris Babcock with The Nature Conservancy install beaver cages on newly planted willow poles at the Nelson Ranch in the Shasta Valley.*

**Landowners and other interested individuals are welcome to contact the Shasta Valley RCD at (530) 572-3120 to learn more about the group, join the group mailing list, or to attend the next planned work day.**