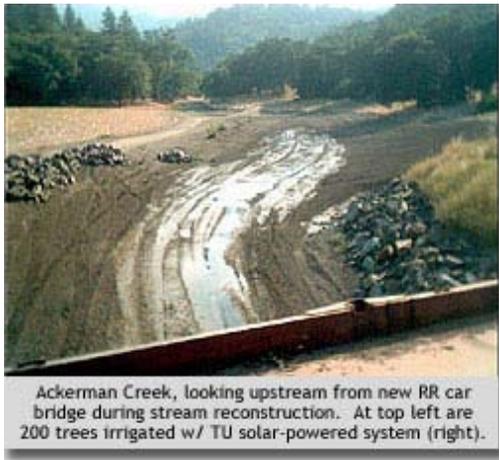




Ackerman Creek: In the summer of 2002 TU volunteers completed a solar irrigation project on a tributary of the Russian River west of Ukiah. Funding came from a grant from the California Department of the Fish & Game (CDFG). Other partners included the landowner, Mendocino Redwood Company (MRC), and the California Conservation Corps.



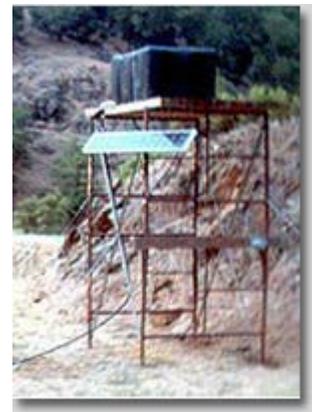
Ackerman Creek, looking upstream from new RR car bridge during stream reconstruction. At top left are 200 trees irrigated w/ TU solar-powered system (right).

The project goal was to irrigate approximately 200 trees that had been planted on the stream bank above a culvert. MRC, in an earlier project, had already replaced the culvert with a railroad car bridge and the area above the bridge received some bioengineering restoration including the planting of the trees. Ukiah is known for its very hot summer weather that would make the survival of a tree-planting project doubtful without irrigation. TU volunteers found out how hot Ukiah can get when they were running irrigation lines to the trees on the open

stream bank in 100+ degree weather!

A California Department Fish and Game grant had enabled irrigation systems similar to this one to be installed by TU volunteers earlier in 2002 in Mill Creek, a Russian River tributary north of Ukiah, and in 2001, on Pena Creek, a tributary of Dry Creek below Warm Springs Dam near Healdsburg.

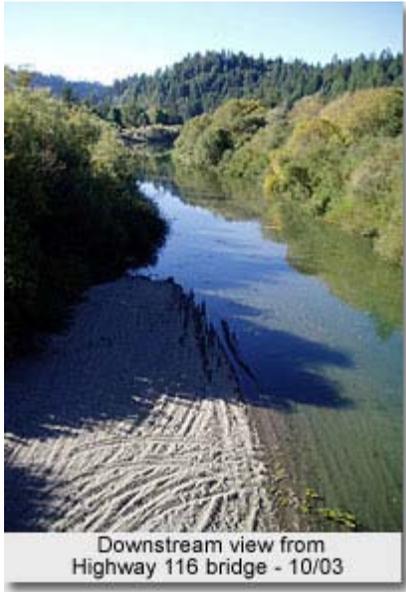
The solar irrigation system works by using a solar powered DC submersible pump-to-pump water up to the storage tank from the creek. A battery powered timer then releases water from the tank to the drip irrigation lines that run to the trees. The tank is located high enough above the drip irrigation emitters to provide enough gravity head pressure to run the system. At the Pena Creek and Mill Creek locations tiny "sprayers" were used rather than emitters to spray down willow "mattresses" on the stream bank and willow instream "deflectors" that will restore erosion damaged areas using bioengineering.



Submitted by Brian Hines, North Coast Chapter

Austin Creek: The Austin Creek watershed, covering 44,761 acres (approximately 70 square miles), is a major tributary to the lower Russian River in Sonoma County and was once known for its prolific coho and steelhead populations. Modern land uses have significantly

impacted these fisheries and led to a serious decline in fish populations. Lower Austin Creek is highly aggraded (filled with sediment) and stream temperatures are warm. Spawning habitat is present but rearing habitat is in short supply and unsuitable. We are working with our partners in a cooperative effort to reverse this trend.



Downstream view from Highway 116 bridge - 10/03

In 2003, the NCCP expanded into this watershed when TU partnered with a private landowner and government agencies to implement the Lower Austin Creek Migration Improvement Project (LACMIP). Our partners include Bohan and Canelis a family owned gravel mining company that has been working in the watershed for over three decades, the California Department of Fish and Game, NOAA Fisheries, the Sonoma County Water Agency and the California Conservation Corps.

The reach from the mouth of Austin Creek to the upper end of the LACMIP is characterized by long riffle/flatwater units with intermittent flow and few pools, except for a few bedrock or boulder outcroppings and little shelter except where terrestrial vegetation exists. In general, lower Austin Creek is inadequate for salmonid rearing habitat but serves as a migration corridor. However, relatively few pools of adequate depth exist for salmonid resting habitat and there is a lack of large woody debris, for shelter during the adult migration period. The aggraded, undefined channel and low stream depth may also be impacting out migration of juveniles.

The LACMIP was designed and implemented within about 6 months to improve 4000 feet of juvenile and adult steelhead trout and coho salmon habitat in lower Austin Creek. In fall, 2003, complex structure (root wads and boulders) was added to excavated pools to maintain scour and add resting cover for adult and juvenile salmonids.

The installed structures are intended to recruit and sort spawning gravel and provide pool habitat. This will encourage mid-channel scour and discourage lateral bank erosion within the improved zone. Digger log structures will be utilized where banks are stable to create lateral scour and enhance backwater pools for rearing fish. In 2004, last year's work will be evaluated and additional work will proceed based on the evaluation.

Future activities identified by TU include working with private landowners in the upper watershed to reduce sediment loading to the creek and restoring stream habitat. We also will be actively participating in the Captive Broodstock Program. The goal for this project is to reestablish wild, naturally producing coho populations using broodstock from Russian River



Bridge Creek is a tributary to the South Branch of the North Fork Navarro River located in Mendocino County. The Bridge Creek Fish Passage Improvement Project implemented in 2003 involved the removal of 2 culverts near the mouth of Bridge Creek which presented a complete barrier to steelhead trout migration. The culverts were replaced with a bridge and rock

weirs placed in the stream channel to restore the natural width and grade of the channel. An estimated 1.5 miles of spawning and rearing habitat for steelhead trout upstream was made available to spawning steelhead by the removing the culverts. The project also removed over 4000 cubic yards of fill material on the verge of failing and delivering sediment to the South Branch of the North Fork Navarro River. The project was funded by Trout Unlimited, California Department of Fish and Game, NOAA Fisheries, and the Mendocino Redwood Company.

The 18,074-acre **Elk Creek** watershed is located in Mendocino County. The creek enters the Pacific Ocean approximately 15 miles south of Mendocino near the town of Elk. This project is part of the North Coast Coho Project. Most of the Elk Creek watershed is located on land owned by Mendocino Redwood Company.



Approximately 3 miles of streamside road along Elk Creek was selected for sediment control measures. The sites selected for treatments are chronic sediment sources that not only have negative impacts in the watershed on an annual basis but also, in some cases, have the potential for catastrophic failure. TU will work with MRC to develop watershed-wide restoration prescriptions, making this project the first step in a multiyear comprehensive endeavor.

Erosion from the road delivers sediment directly into Elk Creek, which is habitat for steelhead and coho salmon. Many years of grading and maintenance have resulted in a wide road with large volumes of sidecast fill perched above Elk Creek. This side cast is starting to fail and to slough into Elk Creek resulting in the delivery of excessive sediment.

During the summer 2003 field season, erosion control features were installed on approximately 3 miles of Elk Creek Road. The entire dirt road was resurfaced with a six inch layer of rock, outslopes and rolling dips were installed, and perched fill material along the road was removed. Several culverts were replaced and rock armoring was installed at culvert outlets and at one ford. Areas disturbed by construction were grass seeded and straw hay mulched initially; tree planting will occur this winter. The total volume of sediment controlled is estimated to be 13,800 cubic yards.



This project is funded by the California Department of Fish and Game, Mendocino Redwood Company, and Trout Unlimited. Work was completed in Fall 2003.

The **Garcia River** enters the ocean at Point Arena. Soon after Mendocino Redwoods purchased LP's lands, ex-logger Craig Bell (right), coordinator of the local Garcia



Watershed Advisory Group, approached TU's Steve Trafton to talk about a sedimentation reduction plan.

More detail, courtesy of *Trout* magazine: [Reading Room>California Dreamweavers](#)

Hollow Tree Creek is a tributary to the South Fork Eel River. It enters the Eel immediately upstream of the town of Leggett in Mendocino County. Hollow Tree Creek may be the largest producer of coho salmon in the entire Eel River watershed, according to several studies. Restoration work is underway on property owned by Mendocino Redwood Company (MRC).

Outmigrant trapping by MRC biologists in 2001 produced annual estimates of 25,000 steelhead and 35,000 coho; the watershed also produces Chinook salmon. This data supports the idea that Hollow Tree Creek may be the largest producer of coho salmon in the entire Eel River watershed.

Hollow Tree Creek Assessment

In 2001 TU contracted the services of Pacific Watershed Associates to conduct a sediment source assessment of the Hollow Tree Creek watershed. Of the 652 sites assessed, 619 were recommended for treatment. It was calculated that these sites had the potential to deliver 136,526 cubic yards of sediment into important spawning and rearing habitat. These site prescriptions include treatments for problems such as failing culverts, landslides, and stream crossings that need repair or removal so that water can flow through properly. Other sediment sources to be rectified include major springs, gullies, and bank erosion sites. Additionally, chronic erosion from logging roads will also be treated.

Restoration

The first phase of the restoration of the entire watershed, and specifically of 216 of the 619 sites started in June 2003. The upslope portion of the project will be conducted by Pacific Watershed Associates and will result in a near-total road-related sediment reduction to Hollow Tree Creek. This includes decommissioning of old roads and upgrading roads still in use. This will effectively obviate road-related sediment as a limiting factor in watershed health, and will allow Hollow Tree Creek and its tributaries to begin the process of reclaiming salmonid spawning and rearing habitat that has been degraded by decades of accumulated sediment.

In 2003 work was completed in the following drainages: Waldron, Bear Pen, Bear Wallow, Little Bear Wallow, the head of Hollow Tree Creek, and near the confluence of Hollow Tree Creek and Butler Creek. In addition, work was completed along the mainline Hollow Tree Road. The restoration/upgrade work involved: road abandonment, construction of permanent crossroad drainage structures along abandoned roads, abandoning watercourse crossing and re-aligning them to their natural grade/width, watercourse crossing upgrades (culverts, rocked rolling dips, or rocked fords), berm removal, outsloping, rocking, and the installation of permanent rolling dips.

Summary of 2003 Hollow Tree Grant Work

- # of Site Treated/Completed = 176
- Class I Watercourse Crossing Abandoned = 4
- Class II Watercourse Crossing Abandoned = 14
- Class III Watercourse Crossing Abandoned = 30
- Class II Watercourse Crossing Upgraded = 6
- Class III Watercourse Crossing Upgraded = 24
- Miles of Class I Road Abandonment = 2.29
- Miles of Class II Road Abandonment = 4.17
- Miles of Class III Road Abandonment = .21
- Miles of Class I Road Upgrade = 4.98
- Miles of Upslope Road Abandonment = 1.93
- Class III Road Upgrade = 830 feet
- Miles of Upslope Road Upgrade = 10.07
- Dips Created to Drain Cut Bank Seeps = 6
- Rocked Fords = 6
- Rocked Dips = 3
- Miles of Brushing = 2.5
- # of watercourses running through old landing that were abandoned = 7
- Approximate 2003 Sediment Savings (yds³) = 48,458

Partnering with the California Conservation Corps

The California Conservation Corps (CCC) will conduct the instream portion of the project. The California Conservation Corps engages young men and women in meaningful work, public service and educational activities that assist them in becoming more responsible citizens, while protecting and enhancing California's environment, human resources and communities.

TU has regularly partnered with the CCC on projects of this nature. The work by these young individuals is essential to the future health of Hollow Tree Creek and to salmonids. This work will accelerate the pace of recovery by providing mechanisms such as root wads and logs through which the stream can begin to scour itself and by providing immediate habitat to salmon and steelhead for spawning, rearing, cover and concealment. Root wads and logs will be sourced from the upslope road decommissioning projects where they were used in the past to create the foundation for roads.

This project is funded by the California Department of Fish and Game, Mendocino Redwood Company, the National Oceanic and Atmospheric Administration, and the California Conservation Corps.



The **Little North Fork Ten Mile River** is a known coho producing tributary which enters the Pacific ocean north of Fort Bragg. TU received funding in 2003 to begin restoration work.

In 2001 property owners Hawthorne Timber Company through its manager Campbell Timberland Management hired Pacific Watershed Associates to conduct an assessment of the Little North Fork Ten Mile River. The Ten Mile River watershed was judged to have high

sensitivity for sediment deposition but the Little North Fork displayed high erosion characteristics.

In this project 32 different sites along 3.4 miles of road will be treated for erosion prevention with estimated sediment saving of 9,453 cubic yards.

The California Department of Fish and Game and Campbell Timberland Management fund this project. Work began in Summer 2003.

Pudding Creek is a small coastal watershed that enters the Pacific Ocean just north of Fort Bragg, Mendocino County. Despite its small size, the watershed was historically a prolific coho salmon producer. Anecdotal information describes fish densities so thick that migrating coho were pushed out onto the bank or that horses were frightened by the sight and sound of them. The California Department of Fish and Game estimates in the 1960's 6000 adult coho salmon provide some truth to the regional stories.

A remnant population of wild coho salmon persists in Pudding Creek today. Pudding Creek has many of the attributes associated with high coho producing streams. However, high levels of sedimentation have been identified as a serious impediment to the creeks ability to carry spawning salmon.

The objective of this project is to "storm proof" 6.2 miles of riparian road along the mainstem of Pudding Creek. Forty-six individual sites will be treated for erosion prevention with an estimated sediment savings of 14,006 cubic yards.

This project is funded by the California Department of Fish and Game and Campbell Timberland Management. Work began in Summer 2003.

