

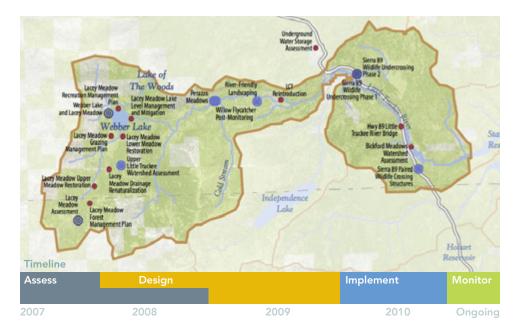
TRUCKEE RIVER CURRENTS

Bringing Back Perazzo Meadows

Surrounded by peaks to the west, north and south, the intricate network of meadowland is arguably one of the most breathtaking stretches of the Truckee watershed. That is until closer inspection revealed degradation from extensive modification beginning in the late 1800s followed by logging, road construction, and dairy farming in the early 1900s.

Today, huge swaths of this multi-meadow system have already been revived. But our effort to correct the degradation and





Volunteer to Change the Future 2 **River-Friendly Landscaping** 3 2016 Monitoring Report Bringing Back Middle Martis Wetland 5 **Truckee River Watershed Council Donors** What is a Watershed? 8 Restoring the First Four Miles

FAST FACTS **Location:** 15 miles north of Truckee in the Northern Sierra **Scale:** 350 acres of one of the systems in the Sierra Nevada

Schedule: June 2007 -Oct. 2010

Budget: \$700,000 100% funded

restore hydrologic function to the area is ongoing.

Fending off erosion—meadow by meadow.

- Expanding the floodplain: By restoring streams to their natural
 - channels, we allow the meadow to once again 'hold water'—a natural function of a healthy meadow.
- Revegetating meadowlands: Bringing back wetland plant species—like sedges and rushes restores the meadow's ability to sustain life.
- Re-establishing habitats: Numbers of native species—like Willow Flycatchers and Sandhill Crane are on the rise.
- Nurturing diversity: Improving habitats for wildlife—including bugs, birds, fish, deer, even black bearhas made Perazzo one of the most diverse meadow system in the Tahoe National Forest.

Thank you to our partner, the U.S. Forest Service.

Thank you to the donors of the Truckee River Watershed Council, the Bella Vista Foundation, California State Water Resources Control Board. National Fish and Wildlife Foundation, U.S. A.R.R.A., and the U.S. Forest Service.

For more information, contact Beth Christman at 530.550.8760.1#



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Volunteer to Change the Future

Anyone can help preserve our mountain home—from a toddler who pulls invasive weeds to a senior who re-landscapes their yard. We can all be part of the solution.

Three simple steps to volunteer with the TRWC

STEP 1

Sign up for our newsletter, *Truckee River Currents*.

STEP 2

Find a program you're interested in and RSVP to the staff member.

STEP 3

Mark your calendar and join us!

Join a River Talk (and get the dirt on the Truckee). Like us, you love our river. And like us, you find it one of the most breathtaking places on earth to hike, fish, swim or simply ogle. But behind her natural beauty, the Truckee holds some disturbing secrets.

Come learn about The Truckee's troubled past—and why the watershed is the key to her future. Listen to stories of fellow riverlovers—and share your own.

- Get a 'virtual tour' of restoration projects
- Meet fellow river-lovers
- Become part of the solution

Call Brenda at 530.550.8760, 5#

Become a Weed Warrior. Help prevent and control invasive weeds in the Truckee River watershed. Non-native weeds can invade anywhere. Neighborhoods. Meadows. Wilderness. In fact, there are over 2,800 infestations of nearly 60 non-native invasive plant species in the Truckee River watershed. Call Matt at 530.550.8760, 6#

River-Friendly Landscaping. One ton. That's how much sediment and sludge runs off the average property in the Truckee area each year—degrading water quality, suffocating habitats and eroding riverbanks. Call us today to get a free site evaluation of your yard. Call Eben at 530.550.8760, 7#

Adopt-A-Stream. It starts with the watershed and monitoring is a critical step! Participate in important biology and chemistry monitoring through our popular Adopt-A-Stream program. There are several ways to practice watershed science. We train and equip you.

Be a biologist:

- Collect aquatic organisms
- Learn field collection techniques and habitat assessment skills
- Learn about aquatic insects
- Identify benthic macroinvertebrates (BMIs)

Call Beth at 530.550.8760, 1#

Be a chemist:

- Monitor water temperature
- Measure conductivity
- Assess chemical pH readings
- Evaluate dissolved oxygen
- Measure turbidity
- Collect nutrient samples

Call Eben at 530.550.8760, 7#



Future scientists at work.

River-Friendly Landscaping

Did you know...

Soil erosion and water runoff are the biggest contributors to water pollution in our rivers and streams. Join us in protecting the Truckee River watershed. Help improve water quality by controlling soil erosion and reducing water consumption by converting your thirsty lawn to a more efficient drought tolerant landscape.

Homeowners can now receive up to \$3,000 in rebates when recommendations from the site plans are implemented and lawns are converted (while funds last).

2017 could be your last chance for a rebate

2017 is well funded for water conservation and soil erosion rebates. After 2017, we go from 100 available rebates to only 15 or 20.



After: The homeowners have installed a permeable walkway, mulch, gravel, and vegetation to protect the previously bare soil. Water from the roof and uphill sources now stays on the property, soaking into the ground.

Before, upper right: Bare dirt on the sloping lot of this Tahoe Donner home caused erosion.



So this year's generous rebate funding—coupled with our nurturing rains—makes 2017 the year to:

- Improve the health and resiliency of your yard and The Truckee Watershed
- Reduce erosion and save water throughout the watershed
- Support and sustain natural wildflower and wildlife habitats
- Make our water more swimmable, fishable and drinkable

Call today to schedule a FREE evaluation of your property. A Conservation Assistant will design a plan and make site-specific recommendations to help reduce pollutants entering our waterways.

Call Eben at 530.550.8760, 7#

Thank you to the donors of the Truckee River Watershed Council and to the U.S. Environmental Protection Agency and the State of California through the Department of Water Resources, and the State Water Resources Control Board.

2016 Monitoring Report

The Truckee River Watershed Council has maintained a volunteer-based water quality monitoring program since 1999 with our Adopt-A-Stream program. We include physical, chemical, and biological monitoring. Each year we summarize water quality data for the Truckee River watershed, outline the goals and objectives for the monitoring program, and relate data back to those monitoring objectives.

The primary goals of the Adopt-A-Stream program are:

- 1. To assess the condition of the Truckee River ecosystem;
- 2. To screen for water quality problems typically associated with common land use practices in the watershed;
- 3. To collect data related to the Truckee River Operating Agreement (TROA);
- 4. To support the Truckee River sediment TMDL monitoring program; and
- To empower citizens to be responsible stewards and decision-makers.

To address these goals, we developed a set of questions:

- 1a. Are water quality standards being met in the watershed?
- **1b.** What is the overall water quality in the watershed?
- 2. Is there evidence of impacts to water quality at urban sites as compared to non-urban sites?
- 3. What is the baseline or pre-TROA water quality at sites below dams?
- 4. Is there evidence of water quality impairment due to excess sediment?

Data collected support the following conclusions:

1a. Are water quality standards met? No, not always. The most readily comparable standards for our region include standards for dissolved oxygen concentration and nitrogen and phosphorus.

Our data indicate some monitoring locations have depressed dissolved oxygen concentrations as compared to the standard established by the Lahontan Basin Plan (LRWQCB, 2015). These locations include:

- Donner Creek below the dam (DONN-03);
- Martis Creek above Martis Lake (MART-00);
- Squaw Creek near mouth (SQCR-00);
- Trout Creek at mouth (TROU-00).

Nitrogen and phosphorus standards have been established for some of our monitoring locations:

- Truckee River below Tahoe dam (TR01);
- Bear Creek at mouth (BEAR-00):
- Squaw Creek at mouth (SQCR-00);
- Trout Creek at mouth (TROU-00);
- Little Truckee River below Boca dam (BOCA-00).



With the exception of the Little Truckee below Boca, all locations regularly exceed standards for some forms of nitrogen or phosphorus.

- **1b. Overall water quality in the Truckee River watershed?**The following streams somewhat consistently exhibit degraded water quality across multiple parameters:
 - Martis Creek above Martis Lake (MART-00);
 - Union Valley Creek at Truckee River (GLEN-00);
 - Trout Creek at mouth (TROU-00);
 - Squaw Creek at mouth (SQCR-00);
 - Donner Creek below dam (DONN-03);
 - Prosser Creek below dam (PROS-01).

Other sites are in generally good condition, such as:

- Sagehen Creek at Highway 89 (SAGE-00);
- Pole Creek (POLE-00);
- Cold Creek (COLD-00).

Nutrients are an emerging concern in our watershed. Even at sites without established standards, we measure relatively high concentrations of nitrogen and phosphorus. In the past few years, we have seen extreme algal growth at many locations. Although the low flows experienced during the drought have certainly influenced this growth, nutrients are also a contributing factor.

- Water quality at urban and non-urban sites? Urbanization
 is potentially a substantial influence on water quality. We
 find our more urban sites to have slightly higher electrical
 conductivity, temperature, and turbidity as compared to
 non-urban sites.
- 3. Pre-TROA water quality? Our data provide an important baseline for assessing impacts of TROA on water quality. TROA went into effect in December, 2015, so 2016 was the first year we monitored under "TROA operations." Since 2016 was the first year of TROA operations, it would be premature to look for differences in water quality parameters pre- and post-TROA. We will continue to collect water quality data from sites most affected by TROA for future comparisons, however.

Continued on page 5

Bringing Back Middle Martis Wetland

Timeline

Assess		Design			Implement —	Monit	Monitor	
2011	2012	2013	2014	2015	2016	2017	Ongoing	

Middle Martis Wetland was originally an alluvial fan of rivulets—multiple streams of life-sustaining channels. But due to decades of abuse from road and railroad building, the fan was confined to a single channel, eroding opportunities for wildflowers, birds and aquatic life to thrive.

To revive the fan, we first reconnect natural aquatic pathways. Then we re-introduce native sedges, grasses, shrubs and trees. Much of this work is done by volunteers and nature-lovers like you.



The meadow: By reviving 60 acres of meadow and a mile of stream, we've created a haven for aquatic insects, Yellow Warblers and Willow Flycatchers.

The fish: Eliminating erosion and headcuts improves passage for fish. So trout, dace and Sculpin will find their way back here.

Sedge and willow: We've re-introduced soil-holding sedge and willow species to the riparian areas south of Highway 267.

Thank you to our partners: Caltrans, Northstar California, Northstar Community Services District, Truckee Donner Land Trust, Truckee Tahoe Airport District, and the U.S. Army Corps of Engineers.

Thank you to the donors of the Truckee River Watershed Council, American Rivers, CA Department Fish and Wildlife, CA Lahontan Regional Water Quality Control Board, Liberty Energy, The Martis Fund, National Fish and Wildlife Foundation, Overall Family Foundation, and the Tahoe Truckee Community Foundation.

For more information, contact Beth Christman at 530.550.8760, 1#

Continued from page 4, 2016 Monitoring Report

4. Water quality impacts of excess sediment? The most effective way we have supported the Truckee River sediment TMDL is through our bio-assessment data including work performed by subcontractors as well as volunteers. The data we have collected supports that there are impacts to the benthic macroinvertebrate due to excess deposited sediment. We need to expand our current efforts to more fully document the extent and severity of sediment deposition throughout the Truckee River.

Excerpted from "Truckee River Watershed Council 2016 Annual Monitoring Data Report, April 25, 2017," available at www.truckeeriverwc.org/library

Thank you to the donors of the Truckee River Watershed Council and the Martis Fund



MIDDLE MARTIS WETLAND

FAST FACTS

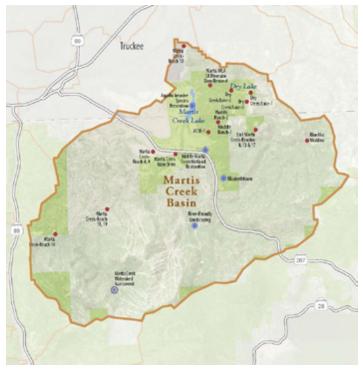
Location: 5 miles south of the town of Truckee on Highway 267

Scale: 60 acres of meadow and wetlands

Scope: Aug. 2012 – Oct. 2016

Project Cost: \$1,600,000

100% funded



We thank the following donors who made contributions since July 2016. They provide resources to fund solutions to protect, enhance and restore the Truckee River watershed. Together we are making a difference.

\$1,000 - \$5,000

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If we missed or misidentified you or your organization, please let us know: 530.550.8760, 5#

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A special group of donors contributed to the 2017 Leadership Gift totaling \$56,000 to encourage guests to give at the River Breakfast.

- FiftyFifty Brewing Co.
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- Overall Tahoe Real Estate, Inc.

- Tahoe Oral Surgery and Implants
- Truckee River Winery & Jones Corda Construction Truckee-Tahoe Lumber
- Diane and Bill Zuendt



WHAT IS A WATERSHED?

Watersheds are nature's boundaries. On the edge of a watershed are the landscape's ridgelines, mountains, and hills. If a raindrop falls on the east side of the Continental Divide, it may end up in the Mississippi River. But if it falls just a foot to the west, it travels a different path entirely—one that leads towards the Pacific Ocean. The Sierra Crest is one of our ridgelines and the Truckee River terminates in Pyramid Lake.

Restoring the First Four Miles

Timeline

Assess			Desig	gn	Impl	ement Moni	itor
2004	2005	2006	2014	2015	2016	2017	Ongoing

For decades, rafters, kayakers, swimmers, anglers and others have been drawn to the gentle waters of the first four miles of The Truckee. But with no formal access points, all of us have been entering the water at all points, up and down the banks.

This ongoing ingress/egress has resulted in serious stream bank erosion, loss of habitat, vegetation die-off—even safety concerns. Once thriving stream banks had been literally hollowed out, accelerating massive erosion and altering the flow of the river.

And this is exactly the kind of challenge we thrive on.

Protecting the bank: By installing natural barricades—like boulders, root wads and dense prickly rose bushes—we simultaneously prevent further damage and enhance the landscape.

Enhancing the area: Re-establishing 3,000 square-feet of plantings along the bank not only protects, it beautifies. And interpretive signage builds respect for this fragile eco-system.

Re-establishing habitats: Native species—both aquatic (like Speckled Dace and Paiute Sculpin) and terrestrial (such as alder and willow)—are moving back.

Providing access: Building environmentally compatible entry and exit points has improved the health and beauty of the riverbank as well as the safety and enjoyment of its recreational users.

Improving water: Reducing headwater erosion and sedimentation makes our water fishable, drinkable and swimmable for miles downriver.

The First Four Miles includes riverbank and flood plain sections from Tahoe City to Bear Creek.

Thank you to our partners, Tahoe City Public Utility District and the U.S. Forest Service.

Thank you to the donors of the Truckee River Watershed Council, the California Resources Agency, Community Foundation of Western Nevada Truckee River Fund, Placer County, Tahoe City Public Utility District, Tahoe Truckee Community Foundation, and Trout Unlimited.

For more information, contact Eben Swain at 530.550.8760, 7#

FOUR MILES

Location: First four miles of the Truckee River from Tahoe Dam to Bear Creek

Scale: 1,200 lineal feet of floodplain and stream bank

Schedule: Aug. 2014 – Nov. 2017

Project Cost: \$431,000; 100% funded





