Memorandum

To: Jody Brostrom, US Fish & Wildlife Service; Therese Thompson, Western Native Trout Initiative; Stephanie Vail-Muse, Desert Fishes Habitat Partnership

From: Leslie Steen, Trout Unlimited and Lee Mabey, Caribou-Targhee National Forest

Re: Annual Report - Tincup Creek Stream Restoration Project Phase 1

Agreement: 16-PA-11041563-086-Mod1 and Interagency Agreement #F17PG00104

Period of Performance: 6/1/17 – 9/30/17

Date: December 11, 2017

Project Description:

The Tincup Creek Stream Restoration Project is a large-scale, multi-phased project led by Trout Unlimited and the Caribou-Targhee National Forest (CTNF) to improve ecosystem function and habitat for Yellowstone cutthroat trout and other native species by restoring channel and floodplain function on 4 miles of degraded stream.

Project Objectives:

The project's goals are to restore stream processes and function, so that all parts of the aquatic system are able to interact with each other. By setting the system up to function properly, habitat complexity will increase through time and will promote a diverse native species assemblage including Yellowstone cutthroat trout, northern leatherside chub, boreal toad, western pearl shell mussels and bluehead suckers – all native species with special management emphasis.

- Objective 1: re-elevate the stream so it is reconnected to the floodplain by elevating riffles, narrowing the channel, and decreasing slope by reconnecting meander cutoffs.
- Objective 2: restore eroding banks by re-sloping them and planting whole willow clumps and sod mats.
- Objective 3: improve habitat complexity for the benefit of all native species in the project area through the above techniques as well as by incorporating large woody debris into meander cutoff plugs, leaving connected backwater channels when restoring meanders, creating or connecting off-channel ponds, and encouraging beaver dams to achieve more frequent overland flow during runoff.
- Objective 4: engage community volunteers interested in fish conservation and angling in

restoration activities to learn about and cultivate a connection to the resource.

Project Budget and Matching Contributions:

Phase 1 Project Expenditures

Work Completed	Total
Supplies: cattle guard	$3,216
Supplies: concrete footers	$512
Supplies: seed	$600
Supplies: 320 trees	$29,000
Supplies: 225 trees	$20,390
Construction Contract: work completed 7/18/17 – 8/17/17	$37,300
Construction Contract: work completed 8/22/17 – 9/13/17	$45,668
Other: video production	$3,861
Other: TU indirect overhead	$20,451
Other: USFWS Region 1 indirect overhead	$4,000
Total	**$164,877**

The majority of project expenditures were spent on the excavation contract with Rockin' T Construction ($82,968) and the costs of harvesting and hauling donated trees from Agrium and Bear Lakes Grazing ($49,390). Note that this year's expenditures include the costs of staging trees for Phases 2 and 3, which was done to capitalize on the availability of donated trees and save on overall hauling costs.

Phase 1 Contributing Project Partners

Partner	Cash	In-Kind
Agrium & Bear Lakes Grazing		$8,000
Caribou County		$1,500
Desert Fishes Habitat Partnership	$17,861.50	
Idaho Department of Fish & Game		$5,000
Jackson Hole Trout Unlimited	$7,232	$600
Jackson Hole One Fly Foundation	$20,000	
Snake River Cutthroats Trout Unlimited	$7,500	$600
Star Valley Trout Unlimited		$600
Trout Unlimited		$4,760
US Forest Service – Caribou-Targhee National Forest	$86,145	$20,140
Western Native Trout Initiative	$26,138.50	
Total	**$164,877**	**$41,200**

Of the $60,000 in funding from USFS-CTNF committed to the project through the modification to the agreement #16-PA-11041563-086-Mod1, $40,000 originated from a joint Western Native Trout Initiative ($23,762.27) and Desert Fishes Habitat Partnership ($16,237.73) award administered by the

US Fish & Wildlife Service (original award total $44,000, less USFWS Region 1 indirect overhead of $4,000) and routed through the USFS-CTNF through interagency agreement #F17PG00104. The entirety of this $40,000 award was spent on Phase 1 project expenses, with $34,447 spent on the excavation contract work and $5,553 spent on TU indirect overhead. In addition, in-kind work valued at $28,000 completed by the Idaho Transportation Department in 2017 will be applied toward Phase 2's match.

Project Outcomes:

Project implementation for Phase 1 of the Tincup Creek Stream Restoration Project occurred between July 15 and September 30, 2017, with Rockin' T Construction of Swan Valley, ID carrying out the excavation contract work and CTNF staff providing construction staking and project oversight.

Objectives 1 and 2 were accomplished through a variety of treatments including elevating riffles, narrowing the channel, decreasing stream slopes, reconnecting cut off meander bends, reconnecting the floodplain, and resloping and revegetating eroding banks.

- In total, 1.9 miles of stream were restored:
    - 1.4 miles of channel were elevated and treated (through narrowing and floodplain reconnection).
    - 4 historic meanders were reconnected, adding an additional 0.5 miles of channel length.
- 5 acres of wetland were restored or enhanced through these activities.

Objective 3 was accomplished through the above restoration techniques. In addition:

- Pool habitat and pool depth were increased.
- Large wood was added into the system to provide structural stability and additional habitat complexity and instream cover, especially for juvenile trout and other native fish species.
- 500 large trees with root wads were harvested and placed on site to be used throughout the three phases of the project, with about 175 of them used in 2017.

Objective 4 was accomplished through the following:

- A volunteer day involving three TU chapters from Jackson Hole, Idaho Falls, and the Star Valley was held on October 20, 2017 (approximately 90 volunteer hours). Volunteers helped with the restoration activities, including planting willows and mulching and reseeding restoration areas.
- The project was featured in the nation-wide online TU Orvis Embrace A Stream matching challenge competition in November 2017, which raised visibility for the project and an additional $1,645 in donations for the project.

In addition:

- Cross fences in cattle allotments were improved.
- A new cattle guard was installed to protect an additional 0.8 miles of leatherside chub habitat as well as provide better late season management of cattle, giving the project more effective rest from grazing use.
- A monitoring plan was developed by CTNF and IDFG staff, with pre-project habitat and fish monitoring completed within the Phase 1 reach as well as in representative sampling units outside of the project area.

- A press release was distributed to regional newspapers and posted online at TU.org.
- The project was featured in an Idaho Soil & Water Conservation Commission October newsletter and in partner newsletters, emails, and social media sites.
- A temporary information sign was placed at each end of the project, describing actions and recognizing partners. A more robust permanent sign will be placed as we near project completion.

Project Photos from Phase 1:

Before and After Photos

Before: Over-widened, eroding meander bend.

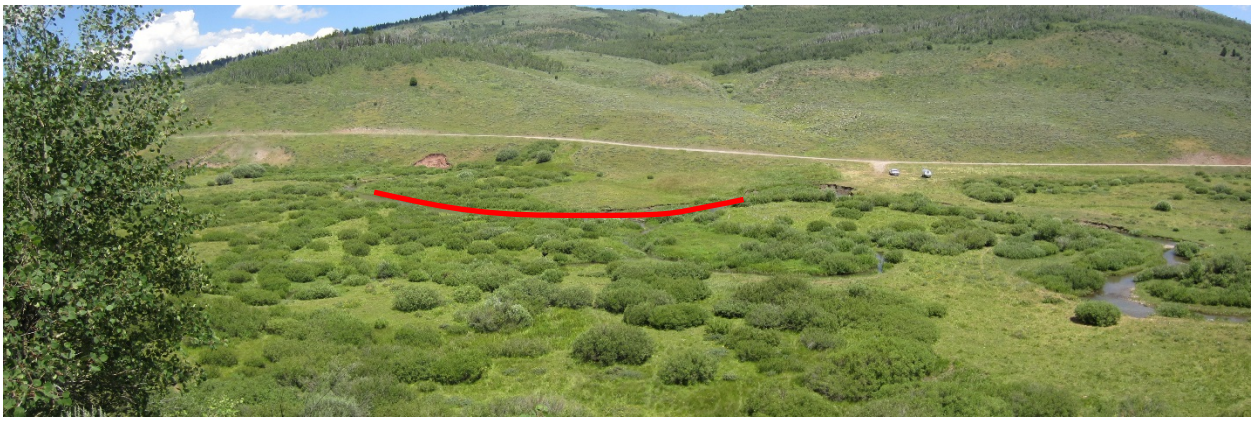
After: Same bend restored, with narrower channel, resloped and revegetated banks, and large wood added.

Before: Over-widened meander bend at risk of cutting off.

After: Same bend, narrowed, realigned, and restored, with wood and willows securing the new bank.

Before: Outside bend widening into eroding hillslope.

After: Bend narrowed, floodplain added, hillslope recontoured, and wood and willows embedded into the newly-built bank.

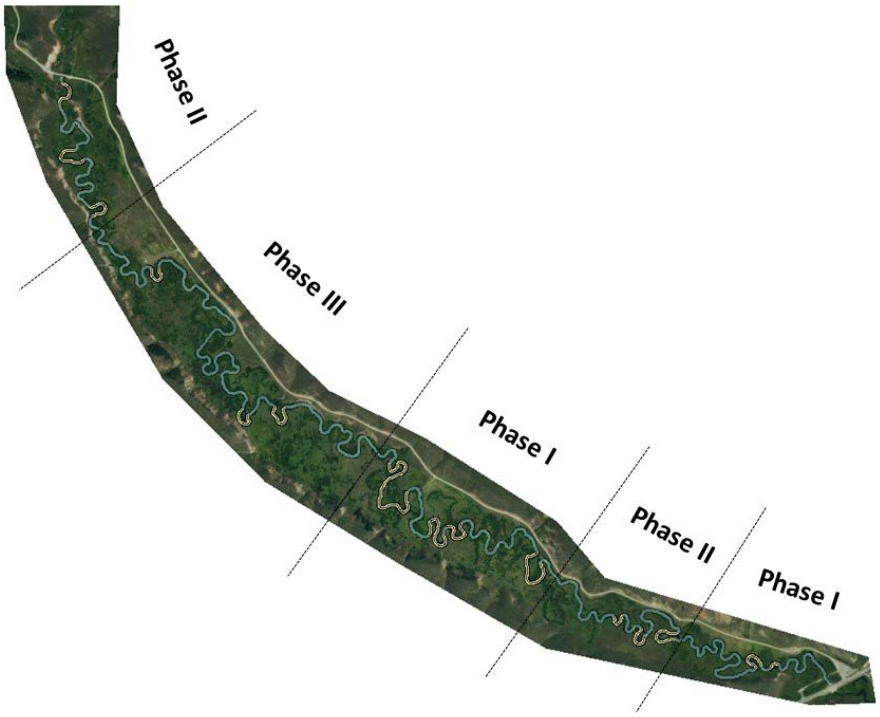


Before: The red line represents a location near the top of the Phase 1 reach where the existing channel was plugged and converted into a backwater area.

After: The blue line shows where the historic meander was reconnected.

Volunteers from the Snake River Cutthroats (Idaho Falls), Star Valley, and Jackson Hole Trout braved the cold in mid-October 2017 to plant willows, mulch and seed.

Tara Hicks, co-owner/operator of Rockin' T Construction, transplants sod and whole willow clumps to build and rapidly revegetate new stream bank. Please visit https://vimeo.com/239529924/1ef1103962 to view a 30-second time lapse video of the reconnection of 270 yards of channel that was cutoff in 2011.



Stream reach map showing the entire 4-mile project area divided into phase locations, updated to reflect actual treatment areas completed in Phase 1 and proposed treatment areas for Phases 2 and 3.