



# 2017 Trout Unlimited Sagebrush Chapter Conservation Grant Program Application

## APPLICANT'S CONTACT INFORMATION & SIGNATURE FORM

**Contact Name & Title:** Mr. David Lass California Field Director  
(First & Last Name) (Title)

**Qualification(s):** TU Staff since 2007

**Address:** 10356 Donner Pass Rd STE:B Truckee, CA 96161  
(Street, City, State, Zip)

**Phone / Cell Number:** 530.388.8261 **Email Address:** dlass@tu.org

**Applicant's Signature:**  \_\_\_\_\_  
(Date)

**If Applicant Is Under 18 Years of Age, The Following Section Must Also Be Completed By an Adult Sponsor**

**Sponsor's First & Last Name & Signature\*:** \_\_\_\_\_  
(\*Adult Sponsor Must Sign & Date Application.) (Date)

**Sponsor's Address:** \_\_\_\_\_  
(Street, City, State, Zip)

**Sponsor's Cell Number:** \_\_\_\_\_ **Email Address:** \_\_\_\_\_

## PROJECT INFORMATION

**Project Title:** Truckee River Fish Habitat Enhancement Project - Phase 2

**Project Location:** Truckee River, Truckee, CA  
(e.g. stream, river, lake, watershed, city, state, GPS coordinates)

**Requested Amount:** \$17,421  
(from attached budget worksheet)

**Project Start Date:** April 2017 **End Date:** October 2017

**Please circle the conservation strategy below that best fits your project:**

**Protect** (*Public lands policy, land trust partnership, Defense from unwise development etc.*)

**Reconnect** (*Passage barrier removal, In-stream flow enhancement etc.*)

**Restore** (*Watershed and habitat restoration projects etc.*)

**Sustain** (*Conservation education, trout in the classroom etc.*)

**If your organization has previously received Sagebrush Chapter Conservation Grant funding, please complete the section below. (List the LAST 3 projects funded).** Note: As stipulated in the funding contract, if previously funded, a project progress report for that award must have already been filed with the TU Sagebrush Chapter).

	Project Title	Year Funded	Amount Funded
1.	Little Truckee Telemetry Project - 2015/16	2016	\$13,000

2.	Little Truckee Fish Habitat Improvement project - 2014/15	2015	\$15,000
3.	Paiute Cutthroat Trout Project – 2013 proposal	2014	\$3,500

**PROPOSAL** (Reference and electronically append to the application any additional information, maps, pictures, diagrams, contracts and letters of intent and support. **Contract or expand each section below as needed.**)

**I. SUMMARY** – (In 350 words or less, provide a brief and concise summary that includes the name and description of the project, purpose of the project, goals, objectives, proposed actions or methods, anticipated scope of impact, partners, project exceptional merits, matching funds, and amount requested.)

Truckee Trout Unlimited is excited to apply to the Sagebrush Chapter Conservation Grant Program and respectfully requests \$15,350 dollars to support the project design, permitting, planning phase, and construction of our Truckee River Fish Habitat Enhancement Project - Phase 2. The project is scheduled for implementation in April 2017 - prior to runoff - or October 2017 - when the Truckee is at baseflow. Truckee Trout Unlimited has almost a decade of proven success with river restoration projects, most recently completing the Little Truckee Fish Habitat Improvement Project (LTFHIP), which Sagebrush TU funded in 2015, and Phase 1 of the Truckee River Fish Habitat Enhancement Project, completed in October 2016. Phase 2 of the TRFHEP project will enhance a heavily used section of the Truckee River off Interstate 80 known as "The DFW Loop" that currently lacks habitat variability while also having high angling pressure (location included in map). The project will narrow the stream channel, place rock weirs and habitat boulders, and improve physical habitat of the river to create depth and scour in a flat, shallow, and wide run that is >250 meters. These enhancements will be instrumental in providing habitat values beneficial to the rainbow trout, brown trout, native whitefish, sculpin, future populations of Lahontan cutthroat trout, while also improving angling opportunities. The Truckee River is known to hold large adult trout, and through this project, TU will increase habitat for these large adult fish to thrive. The land adjacent to the river is owned by California Division of Fish and Wildlife (CDFW). CDFW biologists, engineers, and the State Water Board are supportive of this project and worked with TU to identify this location and provide the original project scope. Rick Poore from StreamWise Restoration Designs has completed the requisite preliminary designs for this project, and additional funding is required to finish the design work, complete state and federal permitting and construct the project in 2017.

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-Past Funding Update-

Last grant cycle, Trout Unlimited Truckee was awarded \$13,000 dollars to implement a telemetry study on the Little Truckee River. On October 25th and 26th, 25 trout were tagged in the system with the radio transmitter tags purchased from the 2016 Sagebrush Conservation Grant. The telemetry study will monitor trout movement and response to the recent TU Fish Habitat Improvement Project in the Little Truckee River between Boca and Stampede Reservoir. These trout will be monitored for one year by TU staff and volunteer assistance. This project would not have been possible without the grant money awarded through the Sagebrush Conservation Grant.

**II. BACKGROUND** – *(Describe the issue or opportunity being addressed. If applicable describe the project location, including name of water body and, if appropriate, salmonoid species. State how this issue or opportunity has benefit to northern Nevada. If this project has received funding previously, provide a brief progress update.)*

### **A. GEOMORPHIC SETTING AND CHANNEL FORM**

The Middle Truckee River has a history of repeated glaciation, most recently in the late Pleistocene (from about 250,000 to 15,000 years ago). Glaciers moved large amounts of material from surrounding peaks to the valleys where it was deposited as till and glacial outwash. Geologic mapping compiled by Saucedo (2005) indicates that the reach of the Truckee River between the Town of Truckee and Boca is largely confined within the glacial outwash features. Much of the glacial outwash features were derived by glacial outburst floods ('jökulhlaups' of Birkeland, 1964), which left behind large boulders that now control the locations of riffles and pools in the system. As a result, the Truckee River at this location takes on a sinuous channel form created roughly 20,000 years ago, with very limited or no active channel migration or meandering occurring since that time.

Channel bed material appears to have a bi-modal grain size distribution, with steeper boulder riffles separated by lower-gradient gravel and cobble reaches that exhibit a more dynamic riffle-and-pool morphology within the confines of the channel. Channel gradient varies from 1.2 percent in the steeper boulder riffles and 0.6 percent in the gravel and cobble reaches.<sup>1</sup> Scour pools have formed in gravel and cobble substrate at the tail of boulder riffles, as well as around very large immobile boulders, where localized scour may occur. In many boulder riffles, cobbles and small boulders have become arranged to form step pools, natural weir structures, while very large immobile boulders have induced localized scour.

Channel migration throughout much of this section is limited by bank material composed of very coarse outwash deposits, as well as infrastructure such as embankments and abutments for the Union Pacific Railroad and I-80 crossings. The railroad maintenance roads and embankments do not appear to be maintained for sediment and erosion control; in many places, the railroad is essentially built within the channel, with dry gravel and exposed sediment readily available for transport and deposition. The gravel-cobble reaches appear to be more dynamic than the boulder riffles and follow a somewhat predictable form (i.e. riffle-pool-glide).

### **B. HYDROLOGY**

The Middle Truckee River<sup>2</sup> flows out of Lake Tahoe at Tahoe City to the California-Nevada state line, with a number of tributaries contributing streamflow upstream of the project reach. The larger tributaries include Bear, Squaw, Donner, Trout, and Martis Creeks. Prosser Creek flows into the Truckee River immediately above the project reach, and the Little Truckee River flows into the Truckee River roughly 1 mile downstream. The contributing watershed area at the project site is approximately 640 square miles, including the Lake Tahoe basin.

Streamflow from Lake Tahoe, Donner Creek, and Martis Creek, and Prosser Creek is controlled by major dams or impoundments, with the timing of releases and streamflows guided by a number of court decrees, agreements, and regulations that govern the flow rate from California to Nevada. With 3 dams in place upstream of the project site, wood transport in this portion of the Truckee River is considered to be limited.

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<sup>1</sup> Channel gradient is interpreted from LiDAR returns off of the water surface at low flows.

<sup>2</sup> Definitions of the Upper, Middle, and Lower Truckee River vary among numerous published studies that have been published. The definition used in this report of the "Middle Truckee River" definition used in this report conforms to nomenclature used by the California Water Quality Control Board, but differs from that used by the U.S. Bureau of Reclamation.

Until recently, the Truckee River has been operated according to the Truckee River and Reservoir Operations Model. Recently, the Truckee River Operating Agreement (TROA) has been put into effect, and has the potential to change the operations of the Truckee River system to accommodate multiple beneficial uses for drought supply, endangered and threatened fish species, water quality, California water use, and storage. In addition, operations under TROA have the potential to enhance riparian habitat, reestablish river canopy, enhance reservoir releases, and improve recreational pools in reservoirs.

With much of the Truckee River being dependent on flows from dams, much of the substrate has become embedded and siltation has occurred in many locations prompting the Truckee to be listed by the EPA as impaired (303d) for sediment. There is a large division between the size classes of trout (high number of small trout, low number of mid-range trout, moderate numbers large trout) and prime habitat available to these trout during low flows through the California section of the Truckee River, as shown through creel surveys and ongoing monitoring completed by the California Department of Fish and Wildlife and US Fish and Wildlife Service. Where deep, oxygenated habitat exists, the Truckee River has a robust population of large trout that occupy parts of the river. These trout are challenging and are a highly sought after fish.

## **IDENTIFYING SOLUTIONS**

Trout Unlimited staff and local Truckee River TU chapter members hosted two site visits during 2016 at three (3) different locations along the Truckee River to scope potential habitat enhancement projects. These site visits included participation from CDFW staff, StreamWise staff and United States Forest Service staff. CDFW staff identified a lack of habitat diversity for trout at one of their monitoring locations known as "The DFG Loop" off Interstate 80. This stretch of the Truckee River receives a high volume of angling pressure because of the ease of access and existing infrastructure including a large parking area with multiple dispersed campsites. There is also a pool called "Horner's Pool" at the far end of the loop that consistently holds large fish.

"Horner's Pool" aside, William Somer, a senior fisheries biologist with CDFW, stated that this stretch of river is overly wide and shallow and would benefit highly from any habitat enhancement work. Many local guides and anglers support this notion that this stretch of river supports fewer and smaller fish than other sections of the Truckee River. Given the high amount of angling pressure, easy access for construction equipment and existing material found on-site, the public/private partnership concluded this site as an optimal location for a project. CDFW engineers and StreamWise engineers worked together during the summer of 2016 to complete a conceptual restoration design (attached) that includes large wood, rock weir/vane structures and habitat boulders.

### **III. GOALS AND OBJECTIVES** – *(Describe the project purpose, objectives, goals and benefit to northern Nevada.)*

#### **Goals**

1. Conserve, protect, and restore high use areas within the Truckee River Watershed to increase wild fish habitat values which in turn will benefit angling values;
2. Boost volunteer involvement and community awareness of TU's work through on-the-ground events and projects that involve our membership and partners;

3. Continue to develop trust between TU and State organizations in creating a legacy of smart, fish-centric habitat enhancement projects.

#### Objectives

1. Secure funding for completing design plans, permitting and construction;
  2. Create opportunities for volunteers to take ownership of the Truckee River watershed through creating two shovel ready projects that complement the larger project;
  3. Create a monitoring plan with CDFW to evaluate project efficacy to help shape design plans for future projects;
  4. Integrate Sagebrush TU in all outreach, education, and volunteer opportunities associated with the restoration project.
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**IV. WORK PLAN** – (Describe in detail the activities and/or technical or scientific methods used to complete the project. Provide a project schedule detailing project activities and milestones - include timeframes for planning, obtaining permits, permission for land access, etc. Describe the role and qualifications of volunteers, consultants and contractors. Describe the role and matching efforts of partners and stakeholders. Include a methodology and indicators to objectively measure project outcomes. Provide a plan to disseminate the benefits of the project to the general public).

Below is a list of our proposed activities for the in 2017:

**Project design**- The TRFH2P2 will use restoration designer Rick Poore from StreamWise to finalize plans that can be used for permitting, project development, construction, and additional fundraising (if needed). Rick Poore has already completed design sketches for the project and is confident with the access, vision, and materials available to complete the project proposed by Trout Unlimited and CDFW. This includes flow measurements, channel mapping, and restoration designs/models required to place rock weirs/vanes, bank filling, and streambed excavation. *This task will be completed by January 2017.*

**Permits**- To progress this project forward, permitting will be filed with CDFW (1600), State Water Board (401), and Army Corps of Engineers (404). The restoration designs developed by Rick Poore will be used in the permitting process. *This task will be completed by May 2017.*

**Project Construction** - The project will utilize base flow to complete all instream construction and will follow BMP's required by special conditions of the permits we receive to reduce or eliminate project impacts to existing sensitive habitat and water quality. Drought conditions in the Truckee River make implementation in 2017 feasible as early as pre-runoff. Construction is expected to last 3 days. *This task will be completed in early May 2017, or mid October 2017.*

I. Up to two (2) W Weirs and one (1) J Hook or Vortex Vane will be placed in the Truckee River throughout the project site. These features have been implemented with great success through The Nature Conservancy Preserves along the Lower Truckee River, and most recently along the Truckee River downstream of Glenshire Bridge by Trout Unlimited. These weirs and vanes are constructed at specific angles and elevations that project banks, increase depth in the thalweg, and increase depth in pools directly upstream.

II. Habitat Boulders- Large boulders from the immediate project area will be used for construction; all remaining boulders will be donated by Teichert Aggregates Martis Valley Plant. Habitat feature boulders (3-5 feet diameter) will be placed within the restoration reach to add scour and cover for fish.

III. Large Wood - Trees with roots wads are proven to provide exceptional habitat for trout. We are continuing to promote wood structures in the final project designs, and large wood will be placed in designated locations and secured into the streambank with boulders and fill material. The trees will be placed in locations to achieve the best possible scour and increase the thalweg depth in the river. Large wood will only be used if we are given clearance by CalTrans.

IV. Bankfill- One of the key elements of this project will be narrowing the channel with materials excavated from upland areas adjacent to the project. CDFW, Rick Poore, and State Engineers commented on the availability of such construction materials, and an excavator operated by Rick Poore will be used to move sediment from these uplands to the river channel. A biological assessment will be needed prior to excavation to ensure there are no rare or sensitive species.

**Vegetation Monitoring** -Because of the nature of the restoration work, native grass re-vegetation and willow plantings will be carried out and planned by TU staff using volunteers. Vegetation monitoring will

be carried out for two years after the project is completed.

**Fish Monitoring-** TU staff will work with CDFW staff to organize and run monitoring for the restoration area post project for two years. This includes monitoring structure stability, angler use and fish presence. TU will gain valuable data on the success of this project and also have the ability to positively influence future restoration projects of similar scale.

**Volunteer Projects-** TU staff will run two volunteer projects to complete re-vegetation, plant willows, and conduct fish monitoring. These projects should offer the opportunity to mobilize TU’s volunteer base in the region and create new community partnerships. Trout Unlimited will work with Sagebrush TU to help organize projects associated with the TRFHEP2.

**Education and Outreach-** TU staff will reach out to local school groups, angler clubs, non-profits, and community organizations and businesses to help promote awareness of the project and its purpose. This location will provide opportunities for casting lessons and environmental education classes. By educating our volunteers on the process and the reasoning behind this project, we hope to continue to build a robust group of volunteers and stewards.

**Expected Results**

Our expected results under this 1-year proposal are as follows:

<b>Goal</b>	<b>Methods</b>	<b>Results</b>
#1: Executing Restoration	Construct TRFHEP2	.75 stream miles/250 acres
#2: Increasing Volunteerism	Design “shove-ready” Projects	2 projects/100 people reached
#3: Expanding Education	Events, press, presentations	1,000 people reached

Our expected results over 3 years to meet our project goals are as follows:

<b>Goal</b>	<b>Methods</b>	<b>Results</b>
#1: Executing Restoration	Monitoring and assessment	Annual monitoring of responses
#2: Increasing Volunteerism	Design “shove-ready” Projects	6 projects/200 people reached
#3: Expanding Education	Events, press, presentations	3,000 people reached

**V. BUDGET-** (Using the Sections below, be as specific as possible when describing your project expenses. Include the project total amount and the amount that is being requested from the Sagebrush Chapter Conservation Grant Program. Projects requesting grant funding for more than \$1000 must be matched with in-kind funding or effort. These include, cash gifts, personnel costs and costs of materials and services. Identify all other contributors and indicate type and amount of matched funding. Please expand or contract each section as needed.)

Description & Use In Project	Rate	Total	Cash Matched	In-Kind Matched	Grant Amount Requested
<b>Section 1 Material &amp; Equipment</b> (Identify and provide justification for specific materials and/or equipment necessary to complete the project. Costs are estimated according to average market value of the equipment. If cost effective, rentals should be considered.)					
EQUIPMENT RENTAL - 314E TRACKED EXCAVATOR					2,500
<b>Section 2 Volunteer and Professional Labor</b> (Provide a description and role in the project of all sources of volunteer and professional services. The hourly rate for volunteers is \$23.07, the professional hourly rate can be donated at market rates.)					
FIELD DAY PROJECTS (100 VOLUNTEERS TOTAL/5 HOURS EACH)	23.07	500		11,530.00	0
CDFW STAFF	70.00	50		3,500.00	0
USFS STAFF	71.00	35		2,485.00	0
TU TRUCKEE CHAPTER SUBCOMMITTEE	23.07	60		1,384.20	0
TU TRUCKEE STAFF	41	125		1,599.00	3,500.00
<b>Section 3 Personnel / Consultant Fees</b> (Provide a detailed description of the work to be performed by personnel/consultants, basis for their fees, time spent on the project and total fees. Salary expenses for non-profit organization staff may be eligible for funding under certain circumstances – see footnote below*).					
<b>Section 4 Contracts</b> (Provide a detailed description of all work to be completed by contract, include selection criteria, type of contract, deliverables, time frame and costs.)					
STREAMWISE - DESIGN/CONSTRUCTION	125	110	4,320		9,350
<b>Section 5 Other Expenses</b> (Provide a detailed description and costs of all other expenses associated with the project.)					
INDIRECT RATE (16.12%) is TU's current NIRCA rate				3,147.00	2,071.42
<b>Section 6 Funding</b> (Include totals for total category amounts, cash matched, In-Kind Matched, and Grant Amount Requested)					
			4,320	23,645.20	17,421.00
<b>Totals</b>					
				<b>Total Project Costs =</b>	<b>45,386.20</b>



<b>Amount Qualified for 1 to 1 Matched Funding =</b>	27,965.20
<b>Funding Requested =</b>	17,421.00

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\*A portion of a salary and/or wages for nonprofit employees may be considered for funding by the grant committee under certain circumstances. Applicants should provide a brief description explaining how payment of any portion of a salary and/or wages is essential to the project and if salary and/or wages are already allocated to the project, to what extent other funding sources exist. The Conservation Grant Committee maintains full discretion when determining if a proposed project qualifies for payment of any portion of a salary and/or wages for nonprofit employees. Proposed projects with a funding request equal to or greater than \$1,000 are still required to provide 1:1 matching funds under this exception.

## SUBMITTING APPLICATION

- The applicant should review the Application Checklist (see below) to verify that the Application is complete; all supporting & reference materials attached and original signatures provided.
- This Application and all support materials **MUST** be submitted electronically to the Sagebrush Chapter Conservation Program Ambassador (Eddie Burke) at [epburke@nvgbell.net](mailto:epburke@nvgbell.net) by midnight Nov 2<sup>nd</sup>, 2015 (as indicated by the electronically mail time stamp).
- The Sagebrush Chapter Conservation Committee does **NOT** accept late applications.
- The Contact Information and Signatures Form (first page) can be electronically signed and e-mailed with the application.
- Upon receipt of the Application, applicants will be notified by electronic mail within three (3) days that their Application has been received.

## APPLICATION CHECKLIST

- Contact the Conservation Grant Program Ambassador if any additional information is needed.
- Complete the Applicant Contact Information & Signature Form (note: an adult sponsor must sign the application if applicant is under the age of 18 years old).
- Sign & date the Contact Information & Signature Form (this can be an electronic signature).
- Complete each section of the grant application emphasizing the qualities of your project.
- Complete the grant budget – provide realistic dollar amounts that represent the size and scope of your project.
- Include all relevant supplemental supporting material in appendices. (e.g. maps, list of names/organizations involved in the project or previously funded Sagebrush TU grant project progress reports)
- Follow the Submitting Application Instructions (above) to submit your application.

The Sagebrush Chapter of Trout Unlimited appreciates the effort and time it takes to appropriately prepare and submit project applications. Projects like this make a difference both in the world we live in today and also generations to come. We look forward to reviewing your proposal and giving it the highest consideration.

# Truckee River - CA DFW Property Horner's Pool Aug 16, 2016 Habitat Enhancement Assessment Conceptual Design Sketch

FLOW



**Legend**

- width pts
- Point\_ge
- type**
- new edge bank
- trail
- type**
- woody debris
- fill area
- rock vane
- proposed pond
- scour pool
- rock footers
- area features**
- type**
- rock
- scour pool
- steep RR bank
- pool
- staging area
- proposed vane

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