

**ROUND 12 CAPITAL PROJECT NOMINATION FORM**  
**LAKE TAHOE FEDERAL SHARE EIP CAPITAL PROJECTS**  
**APPENDIX K**

<b>Project Name:</b>	Lahontan cutthroat trout reintroduction and ecosystem assessment in Lake Tahoe	<b>EIP Number:</b> <i>(Required)</i>	10125,10125.1
<b>Federal Agency Sponsor:</b> <i>(Required)</i>	U.S. Fish and Wildlife Service	<b>Contact:</b>	Lisa Heki
<b>Threshold:</b>	F	<b>Phone Number:</b>	775-861-6300
<b>Threshold Standard:</b>	F-4	<b>Email:</b>	Lisa_G_Heki@fws.gov
<b>FUNDING REQUESTED IN THIS ROUND:</b>		\$ 850,000	

**Federal Share EIP Consideration**

Select "yes" or "no" for each question. If you have a "yes" response, briefly describe. *Projects must meet one or more of these 5 items.*

- 1. Does the project involve federal land? Yes No**  
**If yes, is the federal land involved important to successful implementation of the project?**

The Upper Truckee River and tributary stream work occurs on Federal lands. The remaining project areas occur on State and private lands.

- 2. Is this project identified in the EIP? If yes, please ensure the EIP number is identified in the above project information box. If no, provide a description of the project's contribution to the EIP program. Yes No**

- 3. Does the project involve the conservation of a federal or regional threatened, rare, endangered, or special interest species? If yes, identify. Yes No**

All project components focus on restoring and recovering the federally threatened Lahontan cutthroat trout to the Tahoe basin.

- 4. Does the project involve an identified federal interest such as the detection and eradication of non-native invasive species (aquatic or terrestrial)? Yes No**  
**If yes, identify.**

Part of the recovery and restoration program will be to determine the effects of nonnative invasive species and how to mitigate these effects on the Lahontan cutthroat trout reintroduction.

- 5. Does the project develop knowledge and/or information to develop future capital projects in the EIP? (such projects that fulfill this function would include technical assistance, data management, and/or resource inventories) Yes No**

The FWS is providing technical assistance to State, other Federal agencies and local communities through collection and distribution of resource data. These data will aid in redefining State fishing regulations and restoring important stream, tributary, and lake habitats in the basin.

**Check all Capital Focus Area(s) that apply (as defined in the Federal Vision):**

- 1. **Watershed and Habitat Improvement**
- 2. **Forest Health**
- 3. **Air Quality and Transportation**
- 4. **Recreation and Scenic**

**Check all that apply (must meet a minimum of one category):**

- 1. **Continued emphasis on forest ecosystem health/fuels reduction projects considering the LTBMU Stewardship Fireshed Assessment and Lake Tahoe Basin Multi-Jurisdictional Fuels Reduction and Wildfire Prevention Strategy.**
- 2. **Continued implementation and/or completion of projects approved in Rounds 5 through 11 which implement the EIP. Project proposal should clearly describe the phase/product being produced along with the consequence of not completing the project phase proposed for Round 12.**

*List Previously Approved Rounds and funding(provide project titles):*

Round 6-250,000, Round 7-260,000, Round 8-250,000, Round 9-312,000, Round 10-560,000, Round 11- 650,000.
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- 3. **Project is consistent with and contributes toward TMDL pollutant reductions within the four source categories (atmospheric, urban & groundwater, forested uplands, and stream channel). *NOTE: If “yes”, then please respond to questions in the Accomplishments section of the nomination proposal.***
- 4. **Control of aquatic invasive species and prevention and/or detection of new aquatic invasive species.**

## Project Nomination Proposal Outline

### **Project Summary (a brief summary which clearly describes the proposed project –maximum 200 words)**

- Summarize ONLY the Round 12 project (also summarize scaling of funding to be described in more detail in the “Project Description” section below).

Information from the LCT reintroduction program in Fallen Leaf Lake and the baseline assessment of Lake Tahoe conducted in Round 11 will be used to inform a management strategy aimed at re-establishing LCT in Lake Tahoe. Round 12 will provide a funding bridge for this project until LTRA is available. The Tahoe Basin Recovery Implementation Team (TBRIT) will manage the following actions from the 5-year action plan developed in previous rounds. Actions include: (1) assessment of distribution, abundance, seasonal movement and habitat use of existing aquatic assemblages. Hydroacoustic technology will be utilized to collect data on aquatic assemblages and guide management for nonnative species. Year 1- \$270,000, Year 2- \$170,000, Year 3-\$160,000 (Total=\$600,000)  
(2) Continue effectiveness monitoring on LCT introductions into Fallen Leaf Lake to refine LCT restoration strategy, to improve LCT management and maintain the lacustrine population. Year 1- \$50,000, Year 2-\$50,000, Year 3-\$50,000 (Total=\$150,000)  
3) Continue nonnative trout removal in the Upper Truckee River watershed. Year 1 - \$60,000, Year 2 - \$40,000 (Total=\$100,000)

### **Project Description**

#### **Introduction**

- Provide project background which explains the situation and state the problem and how it will be addressed.

*Note: Focus needs to be the project in Round 12 not a history of an ongoing project or program.*

The Tahoe Basin Recovery and Implementation Team (TBRIT) comprised of representatives from all State and Federal management agencies involved in the Tahoe Basin (USFS-LTMBU, TRPA, CTC, Washoe Tribe NDOW, and CDFG) is now in position to spearhead a scientifically based effort to reintroduce LCT into their historic lacustrine and fluvial habitats within the Tahoe Basin. The TBRIT has recently completed a short-term action (5-year) plan that outlines a restoration strategy designed to establish naturally reproducing and viable Lahontan cutthroat trout populations within the Tahoe basin, including Lake Tahoe. Results of research and management on LCT reintroduction conducted in Fallen Leaf Lake over the past four years has refined our conservation strategies and demonstrated a successful blueprint for reintroduction in a modified ecosystem. Conservation strategies developed include: multiple stocking locations with small numbers of fish per site; stocking sites that exhibit habitat complexity; use of hydroacoustic technology in concert with diver verification to improve trout population monitoring and management of lake trout impacts; stocking during thermal stratification to minimize encounters with predators.

The proposed project will build upon data collected during previous SNPLMA rounds to develop and implement an LCT reintroduction strategy for Lake Tahoe. Through the use of hydroacoustic technology and other methods proven successful in Fallen Leaf Lake, a comprehensive study on spatial distribution and temporal movements of all aquatic assemblages in Lake Tahoe and on the response of the ecosystem to the reintroduction of LCT and suppression of nonnative aquatics species will be undertaken. Research and monitoring will be conducted throughout the year to determine habitat utilization by LCT and nonnative species in lacustrine habitat. Capture data will be analyzed to determine whether spatial segregation exists between LCT and the other aquatic species and whether there are ecologically distinct areas where segregation exists.

Efforts to monitor the effectiveness of the LCT reintroduction program at Fallen Leaf Lake will continue in Round 12.

- Describe what Round 12 is specifically funding; list the number of years the requested funding will cover; briefly describe how this project links into previous projects/rounds (identify and describe other round projects and funding received). Show scaling of project (reduced funding request and associated reduction in accomplishments).

*NOTE: Focus should be on finishing current/phased projects. If project is new in Round 12, clearly identify if the project is for planning or implementation and how it will be completed with Round 12 funds. Identify if other funds will be needed to complete the project. Please identify total non-SNPLMA funds that are being contributed/dedicated to the proposed Round 12 project and the source of those funds.*

Funds were first requested in Round 10 to begin reintroduction efforts of LCT into Lake Tahoe but were denied because the TBRIT had not completed the short-term action plan. With completion of the short-term action plan, assessments of baseline conditions in Lake Tahoe will be initiated in Round 11. Round 12 will utilize the baseline assessment data from Round 11 to implement a full-scale, strategic reintroduction plan for LCT in Lake Tahoe for three years. This plan will be accomplished utilizing a boat equipped with hydroacoustic technology and specialized equipment capable of monitoring and sampling the aquatic resources found in Lake Tahoe. A post-doctoral student will be hired to work in concert with the boat and USFWS personnel to develop and implement the strategic reintroduction plan. This plan will also include active management of nonnative impacts on LCT and their forage base. For the Upper Truckee River project Round 11 funding will complete the goal for fish removal in 100% of Phase II and 10% in Phase III. Round 12 will complete this task for Phase III (\$100,000). Systematic electrofishing will target nonnative trout for removal from the Upper Truckee River. Overall restoration efforts in the Upper Truckee River will reclaim approximately 10 miles of habitat for LCT.

- Describe the “readiness” of this project to move forward (urgency, capacity, capability, environmental documentation, interagency agreements, etc).

All of the above actions have been agreed upon by the Tahoe Basin Recovery Implementation Team which developed an action plan based upon the most complete biological, geographical, and hydrological information available for the restoration and recovery of LCT in the Tahoe basin. All of the actions are ready for implementation based on agreement within the TBRIT, Memorandum of Agreement for LCT recovery, implementation of the Short-term Action Plan, completion of NEPA and ESA Section 7 for the Upper Truckee River expansion area, and NEPA for nonnative fish management actions occurring within the Tahoe basin.

- Describe partnerships for this project. (if applicable, project should identify and describe committed/secured partner funding and/or other partner contributions and how it is integrated into the project).

In addition to the Tahoe Basin Recovery Implementation Members which include representatives from USFS-LTMBU, TRPA, CTC, Washoe Tribe NDOW, and CDFG, we are partnering with the community of Fallen Leaf Lake, Alpengroup, private individuals, several Universities and non-profits to implement the actions listed above. Researchers from University of Nevada, Reno, Sierra Nevada Aquatic Research Laboratory-University of Santa Barbara, University of Montana and USFS Rocky Mountain Research Laboratory are collaborating with us on this project. In addition, we have partnered with several nonprofits,

CalTrout and Trout Unlimited, to complete the actions in previous rounds as well as this round. All of the agencies participating on the Tahoe Basin Recovery Implementation Team use agency funds to participate with the partnership.

The local communities in the Tahoe Basin are supportive of efforts to reintroduce and restore LCT. A local fisherman from South Lake Tahoe wrote an article in the Tahoe Daily Tribune on November 24, 2010 supporting restoration of LCT and its native fishery. We will continue to inform the local communities through our outreach plan about the actions and strategies that will be taken in the basin to restore LCT.

*Note: The form requests information about project goals, objectives, accomplishments, and questions the program is designed to answer across several different sections. These issues are closely linked and your individual responses should provide a cohesive description.*

**Goal – Purpose and Need (“larger” statement of future expected outcome – usually not measurable)**

The purpose and need of this project is to a) implement strategic plan for LCT conservation and recovery in Lake Tahoe, b) assess the distribution, abundance, seasonal movement and habitat use patterns of existing aquatic assemblages, c) utilize hydroacoustic technology for active management of nonnative, aquatic species and d) effectiveness monitoring will continue on LCT introductions into Fallen Leaf Lake to improve LCT management and maintain the population.

**Objectives (specific measurable statements of action – Round 12 only - which when completed will move towards achieving the goal)**

*Note: Objectives will form the basis for the milestones/deliverables to be identified in Appendix B-8*

- Describe how fulfilling objectives will contribute to the achievement of one or more environmental thresholds (air quality, water quality, soil conservation, vegetation, fisheries, wildlife, scenic, noise, recreation). Provide measures if applicable. For example: acres treated, miles of stream restored for each objective.

This project will contribute to the achievement of the following thresholds:

Fisheries: Threshold standard F4 states, “It shall be the policy of the TRPA Governing Board to support, in response to justifiable evidence, state and federal efforts to reintroduce Lahontan cutthroat trout.” The reintroduction threshold would be achieved with the successful establishment of a Lahontan cutthroat trout population in the Upper Truckee River. Improves in-lake and in-stream habitats by managing nonnative fish to improve habitat utilization by LCT and other native fish species. This objective is being accomplished in Fallen Leaf Lake (567 ha), Upper Truckee River (10 miles) and will be initiated in Lake Tahoe (49,728 ha). Overall objective is to recover lacustrine LCT within Lake Tahoe, Fallen Leaf Lake, Upper Truckee River and other priority tributaries within the basin.

Recreation: Recovery and restoration of LCT provides a recreational fishing experience for a native trout species. We have provided these opportunities in several areas within the basin for example: Fallen Leaf Lake, Sawmill Pond, and Upper Truckee River. Fallen Leaf Lake provided a near-shore native lacustrine fishery that has not been available for over 10 years. With the recovery and conservation of LCT in Lake Tahoe an additional near-shore and tributary native lacustrine fishery will be restored.

- Describe the estimated environmental risks from unintended consequences of the proposed project (if applicable).

LCT once flourished at Lake Tahoe, but no populations have been found since the 1930's. It is the only trout native to the basin and historically provided a world-renown fishery. There are no lacustrine, LCT populations existing in the Lake Tahoe basin. LCT is federally listed as a threatened fish covered under the Endangered Species Act, as amended 1978. Without these efforts to restore and recover a native, threatened trout and a unique native fishery will be substantially harmed and the public desire and interest to restore native species in the Tahoe Basin notably delayed. A healthy self-reproducing lacustrine LCT population will also show that past impacts to the natural resources in the basin have been corrected.

## Accomplishments

- Describe the anticipated project accomplishments (i.e. products or identifiable environmental benefits being produced or implemented under this project), and how the project results/accomplishments will be communicated and made available to the public.

*Note: Differentiate between direct and/or primary project effects and secondary and/or overall watershed effects.*

Round 12 would accomplish the following actions:

- 1) Develop and implement a strategic plan for LCT reintroduction and nonnative management
- 2) Monitor, sample and manage aquatic resources in Lake Tahoe (49,728 ha)
- 3) Monitor streamside incubation and reintroduction sites to determine survival and dispersal, residence times and nursery habitats in .25 miles of stream and 567 ha of lake habitat,
- 4) Continue effectiveness monitoring on LCT reintroductions in Fallen Leaf Lake (567 ha),
- 5) Implement remote site incubation efforts 0.31 miles of Glen Alpine Creek,
- 6) Complete 2 consecutive years of non-native fish removal on site-specific reaches in Phase III of the Upper Truckee River LCT expansion area. This accomplishment is expected to begin in 2013 with completion occurring in 2015.

Accomplishments numbered 1-5 are expected to begin 2012 with completion occurring by 2015 for all four actions.

- If you checked “yes” for the project being consistent with and contributing to TMDL pollutant reductions, please consider and integrate the following in the project description:

a) Describe whether, and how, the project demonstrates advanced, alternative, or innovative practices.

NA

b) If project includes project level monitoring, describe ability of proposed monitoring strategy to contribute to the state of TMDL knowledge. Also describe if purpose of the capital project is to conduct data collection and/or analysis related to Lake Tahoe clarity.

NA

c) Describe treatment approach for reducing pollutants and/or measures to address connectivity between pollutant sources and Lake Tahoe or its tributaries. Identify target pollutants, and, to the degree feasible, provide quantitative estimates of project effectiveness at reducing pollutant loads (and/or a commitment to provide post-project estimates).

NA

d) If appropriate, describe whether, and how, the project can be combined or coordinated with other TMDL implementation projects.

NA

## Monitoring

- Describe the project monitoring that will be implemented as part of this project including:
  - List the questions the monitoring program is designed to answer.

The project is designed to identify strategies to reintroduce and recover lacustrine LCT into Lake Tahoe where it has been extirpated for several decades and the biotic communities have been dramatically changed. These questions include:

What is the abundance and habitat use of both reintroduced LCT, nonnative lake trout, and other nonnatives in Lake Tahoe?

What is the spatial and temporal distribution of nonnative salmonids in lacustrine and fluvial habitats which flow into Lake Tahoe?

Are there opportunities for spatial and or temporal segregation between LCT and nonnative salmonids in Lake Tahoe, especially lake trout?

Can the use of egg incubation boxes in fluvial habitats be used to create streams that spawning lacustrine LCT will home to?

What are the food sources that LCT utilize and does this change with active management/suppression of nonnative salmonids and Mysis.

What happens to the biomass of Mysid shrimp and native zooplankton species with suppression of lake trout and Mysis.

What is the effectiveness of manual nonnative fish removal efforts in the Upper Truckee River headwaters at reducing nonnative trout population numbers and improving Lahontan cutthroat trout population numbers?

- Describe any coordination with, or input from, the science community on monitoring and adaptive management that has occurred on the development of this nomination and what changes (if any) to the project were made as a result of this input.

We have been collaborating with several researchers (i.e. Dr. Mary Peacock, Dr. Robert Al-Chokhachy, and Dr Michael Meeuwig) on implementing this program. Research was recently completed on Fallen Leaf Lake titled Evaluating the Reintroduction Potential of Lahontan cutthroat trout in Fallen Leaf Lake and is available in the North American Journal of Fisheries Management 29:1296-1313, 2009. As the LCT recovery and restoration program continues in the basin the TBRIT are identifying additional key researchers in the Western United States who have experience, skills, and knowledge specific to inland cutthroat trout recovery and management. We are working with researchers (Dr. Robert Jellison) that have specific hydroacoustic knowledge and experience to refine our techniques and

methods. An additional post-doctorate student will be chosen to oversee the development and implementation of the strategic plan for LCT reintroduction and conservation in Lake Tahoe.

- Describe the methods and strategies (i.e. monitoring, research, or both) that will be used to verify whether the project goals and objectives have been met? (*Note: A detailed monitoring plan and/or research plan is not required, however, enough detail must be provided to allow someone that is unfamiliar with the project to understand and evaluate the proposed methods and strategies.*)

Hydroacoustic sampling will be used to collect data on the spatial distribution and temporal movements of all aquatic assemblages in Lake Tahoe. These data will be used to monitor habitat utilization by LCT and other nonnative species in lacustrine habitat. This data will be collected throughout the year when the lake is accessible. This period includes a time frame when the lake is well-mixed as well as stratified. Capture data will be analyzed to determine whether spatial segregation exists between LCT and the other aquatic species and if there are ecologically different areas where this segregation exists. Different methods will be employed to assess successful LCT reintroduction into the lake. Examples of these methods are: deploying remote site incubators (RSI) in prioritized streams to estimate the success of egg incubation, stocking numerous sites during each stocking event to decrease nonnative predation, and using hydroacoustic methods to quantify substrate composition in the lake as means of guiding future stocking events into areas offering potential refugia from predators.

Since 2008 the LTBMU has been producing accomplishment reports for the Upper Truckee River, which summarize treatment reach locations, length frequencies and number of fish captured. The monitoring program is designed to track nonnative fish population trends, specifically depletion rates. The objective for the Upper Truckee River headwaters is to have 2 consecutive years of treatment within each project phase in the expansion area, then conduct single pass electrofishing throughout the expansion area starting in 2016. Any additional efforts to study the LCT population in the Upper Truckee River are driven by key management questions, such as: What is the LCT population structure when competition with non-native fishes no longer exists? What are the effects of beaver dams on aquatic habitat parameters (i.e. fine sediment aggradation over spawning gravel, stream temperature, etc.) that are needed to support LCT stream populations?

- Describe whether the monitoring or research associated with this project fits into or is part of a larger monitoring or research program.

This monitoring and research aspects are consistent with the adaptive management, monitoring strategies, and recovery and restoration actions identified in the Tahoe Basin Short-Term Action Plan and the 1995 LCT Recovery Plan.

Restoration of lacustrine and fluvial LCT populations in the Tahoe basin will require monitoring of re-introduced LCT in systems with well-entrenched nonnative populations and assessment of nonnative populations. For example, Fallen Leaf Lake is providing the opportunity to track LCT as they are re-introduced into a lacustrine environment and providing information to refine recovery strategies for successfully re-establishing LCT into Lake Tahoe. The information generated by the Fallen Leaf Lake project is being used by the Tahoe Basin Recovery Implementation Team to

prioritize and implement actions for recovery of LCT as well as restoration of the recreational fishery in the basin.

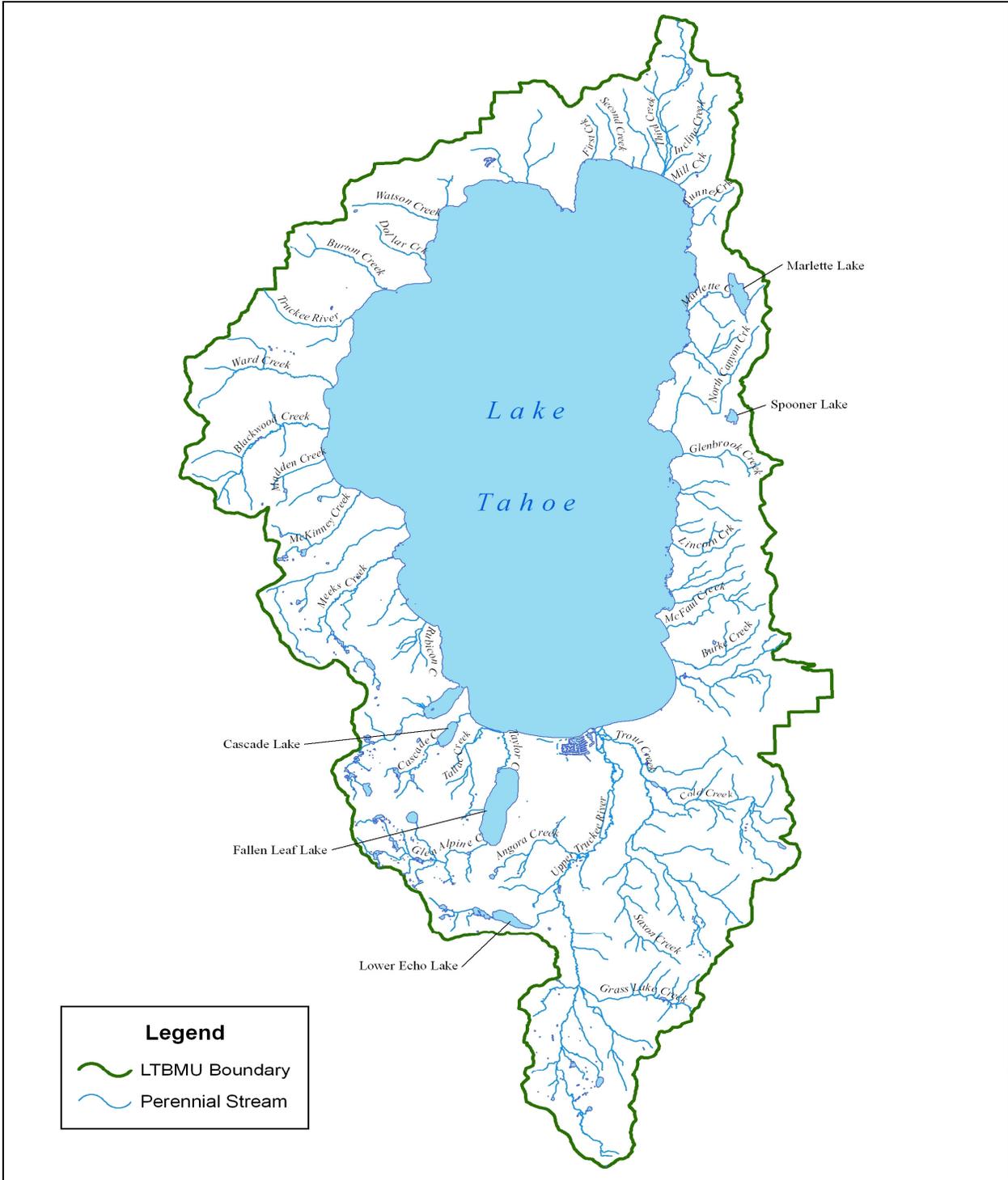
Since 2008 the LTBMU has been producing accomplishment reports for the Upper Truckee River, which summarizes treatment reach locations, length frequencies and number of fish captured. The monitoring program is designed to track nonnative fish population trends, specifically depletion rates.

- Describe how information from the monitoring and/or research will be used to improve the continued performance of the proposed project or future similar projects.

The Action Plan and current actions/projects will be evaluated annually with subsequent management decisions and actions implemented to achieve restoration and recovery of LCT in the Tahoe Basin. For example, the recommendations and actions produced from the Fallen Leaf Lake project will guide the reintroduction efforts and nonnative species management undertaken in Lake Tahoe. Data generated from the actions undertaken in Round 11 such as baseline assessment of habitat and species in Lake Tahoe, surveys and assessments of streams and tributaries, and compilation of Lake Tahoe habitat and species data sets will also be used to guide and develop a strategic restoration and recovery plan for LCT.

### **Attachments**

- If applicable, include 8 ½ X 11 map depicting the project



## Appendix B-8

### LAKE TAHOE RESTORATION PROJECTS ESTIMATED NECESSARY EXPENSES & KEY MILESTONE DATES

Project Name:	Recovery/Restoration of Lahontan cutthroat trout in the Tahoe Basin	Agency:	USFWS
Prepared by:	Lisa Heki	Phone:	775-861-6300
SNPLMA Project #:	W004, F045, F083, F119	EIP #:	10125, 10125.1

#### Identify estimated costs of eligible reimbursement expenses:

<b>1. Planning, Environmental Assessment and Research Costs</b> (specialist surveys, reports, monitoring, data collection, analysis, NEPA, etc.)	\$ 42,500	5 %
<b>2. FWS Consultation – Endangered Species Act</b>	\$ 0	0 %
<b>3. Direct Labor (Payroll) to Perform the Project</b>	\$ 119,000	14 %
<b>4. Project Equipment</b> (tools, software, specialized equipment, etc.)	\$ 68,000	8 %
<b>5. Travel</b> (including per diem where official travel status required to carry out project, such as serve as COR, experts to review reports, etc.)	\$ 8,500	1 %
<b>6. Official Vehicle Use</b> (pro rata cost for use of Official Vehicles when required to carry out project)	\$ 4,250	0.5 %
<b>7. Cost of Contracts, Grants and/or Agreements to Perform the Project</b>	\$ 531,250	62.5 %
<b>8. Other Direct and Contracted Labor:</b> Agency payroll for the Contracting Officer to do project procurement, COR, Project Inspector, Sec. 106 Consultation if required, NEPA Lead, Project Manager, Project Supervisor, and subject experts to review contracted surveys, designs/drawings, plans, reports, etc.; Also covered is the cost to contract for a Project Manager and/or Project Supervisor if contracted separately from other project contract(s)	\$ 8,500	1 %
<b>9. Other Necessary Expenses</b> (see Appendix B-11): Indirect costs associated with implementing a project, such as support services, budget tracking etc.	\$ 68,000	8 %
<b>TOTAL:</b>	\$ 850,000	100 %

#### Estimated Key Milestone Dates:

Milestones/Deliverables:	Date:
Begin strategic plan development	6/1/2012
Assessment of Lake Tahoe aquatic species assemblages	6/1/2012
Effectiveness monitoring of Fallen Leaf Lake and fishery management	6/1/2012
Continue nonnative trout removal in the Upper Truckee River	6/1/2013
<b>Final Completion Date: 12/30/2015</b>	

COMMENTS: