APPENDIX F

Public Comments and Responses

SILVER KING CREEK
PAIUTE CUTTHROAT TROUT RESTORATION PROJECT

Public Comments and Responses

FEBRUARY 2010

INTRODUCTION

In accordance with the State California Environmental Equality Act (CEQA) Guidelines (Section 15088), this appendix provides the public comments received on the *Draft Environmental Impact Statement/Environmental Impact Report (Draft EIS/EIR) for the Paiute Cutthroat Trout Restoration Project* and responses to those comments by the CEQA/NEPA lead Agencies. The public review period was March 20 through May 4, 2009. Written and oral comments were received from regulatory Agencies, non-profit and community organizations, and private individuals. This appendix, together with the revised text and appendices, comprise the *Final Environmental Impact Statement/Environmental Impact Report (Final EIS/EIR) for the Paiute Cutthroat Trout Restoration Project.*

The USFWS and CDFG have revised the EIS/EIR document and many of these revisions are referenced in the written responses. If the revisions precipitated further changes for consistency, these changes are not described in the written responses. In addition, other minor revisions were made to correct, clarify, or amplify information in the EIS/EIR.

Based upon material contained in the responses to comments and minor revisions provided in the Final EIS/EIR, recirculation of the EIS/EIR is not required under the CEQA Guidelines Section 15088.5 because no new significant information was added to the EIS/EIR, and under subsection (b) recirculation is not required where the new information added merely clarifies or amplifies or makes insignificant modifications in an adequate EIS/EIR.

This appendix contains the following information:

- **State of California Governor's Office of Planning and Research State Clearinghouse and Planning Unit Letter.** The attached letter dated May 11, 2009, states that CDFG has complied with the State Clearinghouse review requirements for the Draft EIS/EIR pursuant to CEQA. No comment letters were submitted directly to the Clearinghouse.
- **Master Responses.** Where the same or similar comment or question was raised by multiple commentors, the USFWS and CDFG prepared "Master Responses." The comments on the Draft EIS/EIR warranted several such responses, which are presented first. The subjects of the Master Responses range from responses to technical comments to responses to comments generally supporting or opposing the project. These responses provide an overview response to many of the comments and are referenced in the responses to individual comments as appropriate.
- **Comments and Responses.** The letters and emailed comments on the Draft EIS/EIR received from regulatory Agencies, non-profit and community organizations, and interested individuals that required preparation of specific responses to comments are listed in the following Table of Contents. The comments provided in each letter are numbered and specific responses follow each letter. The Master Responses appear first and the responses to specific comments refer back to the Master Responses as appropriate.
- **Letters of Support.** Letters of support were received from numerous non-profit organizations and private citizens. Over 500 letters and emails were received in support of the project that did not require specific individual responses. Many of these letters and emails are not printed in this appendix. Examples of these letters are provided in Attachment 1. However, each supporting comment letter is addressed in a Master Response that includes at tabular listing of each letter of support. Further, these letters and emails are provided on compact disk.

STATE OF CALIFORNIA
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT

ARNOLD SCHWARZENEGGER
GOVERNOR

CYNTHIA BRYANT
DIRECTOR

May 11, 2009

Stafford Lehr
Department of Fish and Game
North Central Region
1701 Nimbus Road
Rancho Cordova, CA 95670

Subject: Paiute Cutthroat Trout Restoration
SCH#: 2002052136

Dear Stafford Lehr:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. The review period closed on May 4, 2009, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Terry Roberts

Terry Roberts
Director, State Clearinghouse

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH# 2002052136
Project Title Paiute Cutthroat Trout Restoration
Lead Agency Fish & Game #2

Type EIR Draft EIR

Description CDFG and USFWS proposes to eradicate non-native trout from the project area using the piscicide rotenone, to neutralize the rotenone downstream of Silver King Canyon at its confluence with Snodgrass Creek using potassium permanganate and to restock Silver King Creek with the native Paiute cutthroat trout (PCT), (Oncorhynchus clarki seleniris), a federally threatened species. The agencies are also evaluating the necessity of removing frish from Tamarack Lake at the headwaters of Tamarack Lake Creek, a tributary of Silver King Creek, if fish are present.

Lead Agency Contact

Name Stafford Lehr
Agency Department of Fish and Game
Phone 916-358-2838 *Fax*
email slehr@dfg.ca.gov
Address North Central Region
1701 Nimbus Road
City Rancho Cordova *State* CA *Zip* 95670

Project Location

County Alpine
City
Region
Cross Streets about 9 miles north of Hwy 108 & about 7 miles east of Hwy 395
Lat / Long
Parcel No.
Township *Range* *Section* *Base*

Proximity to:

Highways No
Airports No
Railways No
Waterways Silver King Creek, East Fork of the Carson River
Schools No
Land Use Forest Land
Z: Timberland Preserve
GP: Wilderness

Project Issues Biological Resources; Water Quality

Reviewing Agencies Resources Agency; Department of Conservation; Department of Fish and Game, Region 2; Cal Fire; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; Office of Emergency Services; Caltrans, District 10; Department of Health Services; Integrated Waste Management Board; Regional Water Quality Control Bd., Region 6 (So Lake Tahoe); Department of Toxic Substances Control; Native American Heritage Commission; State Lands Commission

Date Received 03/20/2009 **Start of Review** 03/20/2009 **End of Review** 05/04/2009

Note: Blanks in data fields result from insufficient information provided by lead agency.

Appendix C

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #2002052136

Project Title: Paiute Cutthroat Trout Restoration

Lead Agency: California Department of Fish and Game — Contact Person: Stafford Lehr
Mailing Address: 1701 Nimbus Road, Suite A — Phone: (916) 358-2838
City: Rancho Cordova — Zip: 95670 — County: Sacramento

Project Location: County: Alpine — City/Nearest Community: Markleeville
Cross Streets: About 9 miles north of Hwy. 108 & About 7 mi. east of Hwy 395 — Zip Code: 96120
Longitude/Latitude (degrees, minutes and seconds): ____° ____ ' ____ " N / ____° ____ ' ____ " W Total Acres: ____
Assessor's Parcel No.: ____ Section: ____ Twp.: ____ Range: ____ Base: ____
Within 2 Miles: State Hwy #: none — Waterways: Silver King Creek, East Fork Carson River
Airports: none — Railways: none — Schools: none

Document Type:

CEQA: ☐ NOP ☑ Draft EIR — NEPA: ☐ NOI — Other: ☐ Joint Document
☐ Early Cons ☐ Supplement/Subsequent EIR ☐ EA ☐ Final Document
☐ Neg Dec (Prior SCH No.) ____ ☑ Draft EIS ☐ Other: ____
☐ Mit Neg Dec Other: ____ ☐ FONSI

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Local Action Type:

☐ General Plan Update ☐ Specific Plan ☐ Rezone ☐ Annexation
☐ General Plan Amendment ☐ Master Plan ☐ Prezone ☐ Redevelopment
☐ General Plan Element ☐ Planned Unit Development ☐ Use Permit ☐ Coastal Permit
☐ Community Plan ☐ Site Plan ☐ Land Division (Subdivision, etc.) ☐ Other: ____

Development Type:

☐ Residential: Units ____ Acres ____
☐ Office: Sq.ft. ____ Acres ____ Employees ____ ☐ Transportation: Type ____
☐ Commercial: Sq.ft. ____ Acres ____ Employees ____ ☐ Mining: Mineral ____
☐ Industrial: Sq.ft. ____ Acres ____ Employees ____ ☐ Power: Type ____ MW ____
☐ Educational: ____ ☐ Waste Treatment: Type ____ MGD ____
☐ Recreational: ____ ☐ Hazardous Waste: Type ____
☐ Water Facilities: Type ____ MGD ____ ☑ Other: ____

Project Issues Discussed in Document:

☐ Aesthetic/Visual	☐ Fiscal	☐ Recreation/Parks	☐ Vegetation
☐ Agricultural Land	☐ Flood Plain/Flooding	☐ Schools/Universities	☑ Water Quality
☐ Air Quality	☐ Forest Land/Fire Hazard	☐ Septic Systems	☐ Water Supply/Groundwater
☐ Archeological/Historical	☐ Geologic/Seismic	☐ Sewer Capacity	☐ Wetland/Riparian
☑ Biological Resources	☐ Minerals	☐ Soil Erosion/Compaction/Grading	☐ Growth Inducement
☐ Coastal Zone	☐ Noise	☐ Solid Waste	☐ Land Use
☐ Drainage/Absorption	☐ Population/Housing Balance	☐ Toxic/Hazardous	☐ Cumulative Effects
☐ Economic/Jobs	☐ Public Services/Facilities	☐ Traffic/Circulation	☐ Other: ____

Present Land Use/Zoning/General Plan Designation:

Forest Land/Zoning TP (Timberland Preserve) General Plan designation Wilderness

Project Description: *(please use a separate page if necessary)*
See Attachment

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Revised 2008

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Master Response A:
Response to Comments in General Opposition to the Proposed Action/Preferred Alternative

Section 2.2 (Objective/purpose and need for action) in the EIS/EIR discusses the purpose and need for the proposed Action which is to restore Paiute cutthroat trout to its historic range as stated in the Revised Recovery Plan (USFWS 2004), and thereby satisfy one critical Recovery Plan component for delisting the species. Furthermore, the project would make Paiute cutthroat trout the only trout species in Silver King Creek above Silver King Canyon. By expanding the populations and range of the species, the proposed Action would also increase the probability of long-term viability and reduce threats from genetic bottlenecking and stochastic events.

The Agencies propose to use rotenone (Alternative 2- proposed Action), a naturally-occurring compound that is a safe and effective agent used for fisheries management across the United States (Finlayson et al. 2000). The EIS/EIR addresses the potential environmental issues as required by CEQA and NEPA. Please refer to the responses provided below addressing specific concerns regarding the project, including analysis and disclosure of potential impacts on natural resources (including species and taxa other than Paiute cutthroat trout), evaluation of alternatives, effects of greenhouse gases and climate change, compliance with Federal and state laws, and other issues raised in the comments.

The Agencies do not plan to withdraw the project or to use non-chemical means. The only non-chemical options that passed the initial screening were physical removal techniques, such as electrofishing, gill netting and seining (see EIS/EIR Appendix B). These techniques were combined in a physical removal alternative (Alternative 3). This alternative was evaluated in the EIS/EIR; however, the Agencies determined it would be extremely difficult to implement, would result in long-term impacts on recreational values, and would need to be implemented over multiple years (at least 10 years) and crews would likely be in the wilderness area for most of the summers during peak recreation use. Further, this alternative would carry a much higher risk of being ineffective (please see Master Response D).

Master Response B:
Response to Comments that the Agencies have not Completed a Species Inventory

Several commentors have stated a need for a species-level inventory of all invertebrates in the watershed prior to implementation of the proposed Action. Species-level invertebrate inventories were not included as a method for establishing baseline information or assessing impacts because of the difficulties in developing a complete inventory, the lack of comparison data from other watersheds which would be needed to determine the rarity of any particular species, and the fact that the proposed Action avoids effects on unique macroinvertebrate habitats where potentially endemic species are most likely to occur. The methods used, and proposed for use by the Agencies, to describe the baseline conditions for, and assess impacts on, macroinvertebrate taxa were chosen because they provide extensive information on the invertebrate community, are robust and thorough, meet the accepted standards of both regulatory and management Agencies, and have been scientifically peer-reviewed.

In response to commentors use of the term species throughout the document, appropriate changes have been made to the Final EIS/EIR to clarify the differences between “taxa” and taxonomic ranking (e.g species). The following definition is provided: The taxonomic ranks for classifying living things are (in order) Kingdom, Phylum, Class, Order, Family, Genus, and Species. Taxa is considered a taxonomic group of any rank, including all subordinate groups; any groups of organisms, populations or taxa considered to be sufficiently distinct from other such groups to be treated as a separate unit; taxonomic unit, populations. Most macroinvertebrate studies typically identify taxa collected to the genus level.

Due to the spatial and temporal complexity of macroinvertebrate communities and the diversity of macroinvertebrate life histories, conducting a complete macroinvertebrate inventory requires work over many years, at different seasons corresponding to species life histories, and use of diverse collection methods. Such efforts may still fail to describe each taxa to the species level. Vinson and Vinson 2007

(Appendix D) report that there have been no complete inventories of invertebrates in any body of freshwater worldwide. Even with intensive sampling on the Logan River (monthly for 7 years using aquatic qualitative sampling, terrestrial sweep netting, and light traps), new genera are collected about every two months (See Appendix D in the EIS/EIR). This information is in addition to the compilation of effort listed in Section 5.1.1.3 (Benthic macroinvertebrates) in the EIS/EIR. In fact, when species level studies have been undertaken for streams, many have focused on species within a targeted family (e.g. stoneflies) and have not resulted in a species level inventory of all taxa present (Erman 1996). Even in a better studied watershed, such as Sagehen Creek, many taxa such as true flies and mayflies have not been identified to species (Erman 1996).

A macroinvertebrate inventory provides a list of the species found to inhabit an area, but does not provide information as to the rarity of the species. For this, it is necessary to determine if each of these species occurs elsewhere - upstream, downstream, or in adjacent or nonadjacent watersheds. A systematic species inventory of all macroinvertebrate species is not available for California (Vinson et al. 2010, Erman 1996; see Section 5.1.1.3 (Lack of inventory data) in the EIS/EIR) and no complete species inventories have been completed within other tributaries in the East Carson River Basin or the adjacent Walker River Basin watershed. Vinson and Vinson (2007) stated that based on occurrence of taxa collected, the majority of taxa collected in Silver King Creek could be considered rare. Because complete species inventories are not available within the East Fork Carson River Watershed, adjoining watersheds, or Sierra-wide, a rarity determination based on distribution has limited value (see Section 5.1.1.3 (Benthic macroinvertebrates)).

The proposed Action avoids unique habitats such as seeps and springs; these habitats types have a high probability of containing rare and/or endemic invertebrates (Erman 1996). The likelihood that there are endemic macroinvertebrates in Silver King Creek is very low because waters within the treatment area are not unique (See Mangum note in Section 5.1.1.3 (Rare and Endemic species)). Soda springs are present in the Silver King Creek watershed, which may harbor unknown taxa. These soda springs are away from streams and will not be treated. Few springs and seeps have been located within the project area; however these would not be treated if they are deemed fishless. Most springs and seeps within the watershed are located above barriers outside of the project area.

Please refer to Section 5.1.4.2 (Alternative 2: proposed Action) in the EIS/EIR for discussion of community level impacts and recovery of benthic macroinvertebrates in response to rotenone treatments. To determine the baseline condition of macroinvertebrate taxa, to analyze impacts for the proposed Action, and to monitor effects of the proposed Action, the Agencies have used, and are planning to use, data acquired using scientifically accepted collection methods, protocols, metrics, and taxonomic resolution in accordance with accepted standards used by regulatory and land management Agencies. These methods include describing and assessing the status of invertebrate assemblages (groups of similar species and genera) and communities.

The baseline information encompasses three survey periods. The earlier baseline information is derived from surveys conducted from 1984-1996 throughout the Silver King Creek to monitor effects of livestock grazing as well as effects of chemical treatments using rotenone. Impacts were analyzed using several community assemblage metrics and in some cases by evaluating response of individual taxa/species to disturbance (Mangum and Madrigal 1999; Trumbo 2000a; 2000b). Additional baseline information comes from 2003-2006 surveys conducted throughout the Silver King Creek watershed that further describe the macroinvertebrate community using nationally accepted metrics (NAMC 2003, 2004, 2005, 2006). Appendix D and E in the EIS/EIR provide lists of all past taxa (e.g., families, genera, and species) collected in Silver King Creek Basin. Many were identified to the species level. Finally, surveys were also completed in 2007, 2008 (NAMC 2007, 2008), and 2009 under a revised monitoring plan (Appendix E in the EIS/EIR). These surveys and reports provide relevant baseline data (See Section 5.1.1.3,

Community Characterization) as well as the basis for the analyses of environmental consequences (See Section 5.1.4 (Environmental impact assessment).

This robust data set for pre-treatment information far exceeds the data available for any past or proposed rotenone project. Vinson and Vinson (2007, Appendix D, Table 2) list various rotenone projects and where pre-treatment sampling was conducted prior to rotenone treatment. Among the river studies Vinson and Vinson (2007) identified three studies that collected no pre-treatment data, four studies that collected samples just prior to the treatment and one study that collected data a year before the treatment. None of the projects listed completed a baseline species inventory prior to rotenone treatment. Some studies were based on aquatic invertebrate assemblage information or limited species evaluation based on larval identification (Mangum and Madrigal 1999; Trumbo et al. 2000a; Whelan 2002; Darby et al. 2004).

An Agency monitoring plan for this project was developed that considered comments from public Agencies and the scientific community on past projects in the Silver King watershed. These macroinvertebrate sampling and analyses of changes in macroinvertebrate assemblages and taxa will be conducted by the Agencies as described in Appendix E, Aquatic Invertebrate Interagency Monitoring Plan 2007-2015 and will be based on collections of aquatic larval forms. The Agencies agree that collections of these types cannot be used to identify all taxa to the species level. However, the Agency study plan will be useful in indicating changes in invertebrate assemblages in response to some impact if proper controls are established. In the 1996 SNEP report Erman states that such studies, with proper controls can be used to assess impact in lieu of species level inventories (Erman 1996). The macroinvertebrate monitoring plan for the proposed treatment has established proper controls (Appendix E). The monitoring plan has been reviewed by Dr. Mark Vinson and Dr. Eric Dinger (Mark Vinson email and attachment to Jim Harvey, June 24, 2008).

Master Response C:
Paiute Cutthroat Trout Historic Range

The historical range of Paiute cutthroat trout is in Silver King Creek from Llewellyn Falls downstream to a series of barriers located in Silver King Canyon as well as the accessible reaches of three small named tributaries: Tamarack Creek, Tamarack Lake Creek, and the lower reaches of Coyote Valley Creek downstream of barrier falls. The historical range has been documented in numerous scientific documents (Behnke and Zarn 1976, Ryan and Nicola 1976, Busack 1975, Behnke 1979, Behnke 1992, Moyle 2002). The original specimen (the "type specimen" or "holotype") of Paiute cutthroat trout was collected by Snyder (1933) outside of the historical range described above. Behnke (1992) clarifies the discrepancy between the collection location (type locality) and the historical range,

> "The distribution of the Paiute cutthroat trout is unique in that the sub-species is not native to its type locality above Llewellyn Falls in Silver King Creek, but was introduced there in 1912 by sheepherders (Behnke and Zarn 1976, Ryan and Nicola 1976, Busack 1975). When Snyder (1933) described seleniris, he believed it was native only to the headwaters isolated by Llewellyn Falls. Virgil Connell, a stockman who pastured sheep in the Silver King Creek watershed, later provided the information that no fish existed above Llewellyn Falls until transplanted from below the barrier in 1912. This transplant was fortunate because by 1933 the trout below Llewellyn Falls represented a rainbow X cutthroat hybrid swarm (Behnke 1960)."

Several commentors claim there is evidence of the historical range being above Llewellyn Falls based on a Carson-Iceberg Wilderness guide which states,

> "Llewellyn Falls is a barrier that trout cannot ascend (upstream trout occasionally go over the falls unharmed). Perhaps as a giant glacier slowly retreated up Silver King canyon, perhaps about 140,000 years ago, cutthroat trout followed its path. They would have been

> able to swim into Upper Fish Valley and to higher valleys *if* (author's emphasis) they did so before Silver King Creek eroded away bedrock to form the falls." (Schaffer 1992).

There is no evidence to support the claim that the previous quotation declares the historic range of the Paiute cutthroat trout was above Llewellyn Falls. The area above Llewellyn Falls was historically fishless according to early stockmen as described above. A description of the historical range is found in Section 5.1.1.3 (Paiute cutthroat trout) in the EIS/EIR.

The purpose and need for the proposed Action is to restore Paiute cutthroat trout to its historic range as stated in the Revised Recovery Plan (USFWS 2004), and thereby satisfy one critical Recovery Plan component for delisting the species. The project would make Paiute cutthroat trout the only trout species in Silver King Creek above Silver King Canyon. By expanding the populations and range of the species, the proposed Action would also increase the probability of long-term viability and reduce threats from genetic bottlenecking and stochastic events.

Master Response D:
Electrofishing as a Means of Eradicating Hybridizing Species

Non-native rainbow trout are currently the greatest threat to Paiute cutthroat trout, resulting in loss of its historical habitat through competition and hybridization. Competition from non-native trout has been identified as one of the most detrimental threats to native inland cutthroat trout (*Oncorhynchus clarkii* spp.) (Gresswell 1988, Behnke 1992, Young 1995). Both abiotic and biotic processes can influence competitive advantages for non-native trout over native cutthroat trout (Dunham et al. 2002, Peterson et al. 2004, Shepard 2004, de la Hoz Franco and Budy 2005, Quist and Hubert 2005, Korsu et al. 2007, McGrath and Lewis 2007, Budy et al. 2008, Seiler and Keeley 2009, Wood and Budy 2009).

Hybridization from non-native salmonids is also a threat to all native western trout species (Gresswell 1988, Behnke 1992, Young 1995). Non-native rainbow trout readily hybridize with native cutthroat trout and produce fertile offspring; however, fitness decreases as the proportion of rainbow trout admixture increases (Muhlfeld et al. 2009). Even with reduced fitness over time, hybridization spreads rapidly because the initial F_1 hybrids have high fitness, hybrids tend to stray more frequently, and all offspring of hybrids are hybrids (Boyer et al. 2008, Muhlfeld et al. 2009). Extensive genetic mixing of natives, non-natives, and hybrids contribute to the loss of locally adapted genotypes and can lead to the extinction of a population or an entire species or sub-species (Rhymer and Simberloff 1996).

The level of risk from non-native species depends on the mechanism by which the non-native species threatens the native species (i.e., competition, predation, hybridization). Complete eradication of non-natives is usually desirable, but not always feasible. When native species coexist with competing or predatory non-native species (i.e., cutthroat trout and brook trout), reduction and suppression of the non-native species may be a management option. Reducing the population of the non-native species decreases their ability to suppress the native species. During suppression activities the native species is able to reoccupy lost habitat and maintains its genetic purity. Reduction of the non-native species is only temporary; however, and maintenance (repeated suppression effort) of that population will have to occur into perpetuity (Peterson et al. 2008). In contrast, when native and hybridizing species coexist together (i.e., cutthroat trout and rainbow trout), complete eradication is the only management option if a genetically pure population of the native species is the desired outcome. If only a few hybridizing individuals are left in the population, they can still reproduce with the native species. All offspring are hybrids which perpetuates the problem.

Techniques for eliminating non-native species from stream environments are limited (Meronek et al. 1996). Electrofishing has been shown to be costly and time consuming, and its effectiveness is limited to small, relatively noncomplex streams (Moore et al. 1986, Finlayson et al. 2000, Moore et al. 2005, Meyer et al. 2006). Additionally, electrofishing has been most effectively used when the project goal is the

control of competing non-native species, rather than eradication of hybridizing non-native species (Larson et al. 1986, Moore et al. 1986, Thompson and Rahel 1996, Kulp and Moore 2000, Shepard et al. 2002, Meyer et al. 2006, Peterson et al. 2008). Chemical treatments are the most effective technique of eradicating non-native species in large, well connected, complex stream habitats (Finlayson et al. 2000, Moore et al. 2005, Peterson et al. 2008). When hybridizing species are being targeted, the most effective technique should be used because complete eradication is needed for the effort to succeed.

Electrofishing efficiency is influenced by biological, environmental, and technical factors (Reynolds 1996). Two important biological factors that influence capture probabilities include the species and size of fish being targeted (Reynolds 1996, Dolan and Miranda 2003). Salmonids are more susceptible to electrofishing than other groups of fishes (i.e., cyprinids), making electrofishing a useful tool to sample salmonid populations, especially in stream environments (Reynolds 1996). However, electrofishing techniques are biased by size, with larger fish being more prone to capture than smaller fish (Anderson 1995, Dolan and Miranda 2003, Peterson et al. 2004). Additionally, as the number of passes (number of times a sampling effort moves through specific habitat units) increases and individuals are removed, the capture efficiency decreases, significantly increasing the effort needed to remove fewer and fewer individuals (Peterson et al. 2004, Rosenberger and Dunham 2005). This sampling bias leads to over- or under-estimates of population abundance and becomes even more problematic when using electrofishing as an eradication technique.

Important environmental factors which influence capture probabilities in stream environments are water conductivity and stream complexity which includes size of stream (e.g., length, width, flow), substrate, and cover (Reynolds 1996). Streams with low conductivity (e.g., Silver King Creek) exceed the capacity of most power sources which reduces capture probabilities (Reynolds 1996, Kolz and Reynolds 2000). As stream complexity increases, electrofishing efficiency and capture probability decrease due to the inherent difficulties in sampling larger habitat sizes (Kennedy and Strange 1981, Habera et al. 1992, Kruse et al. 1998, Rosenberger and Dunham 2005). Additionally, large cobble and boulders, undercut banks, deep pools, large woody debris, and riparian vegetation decrease the ability of observers to locate and capture stunned fish (Kennedy and Strange 1981, Peterson and Cederholm 1984, Habera et al. 1992, Rodgers et al. 1992, Kruse et al. 1998, Peterson et al. 2004, Rosenberger and Dunham 2005).

Technical factors include personnel, equipment, and organization (Reynolds 1996). Most technical factors can be either selected for or controlled to a degree by maintaining equipment, training personnel, timing of sampling, and allowing for the appropriate number of personnel to accomplish stated goals and objectives (Reynolds 1996).

Fish in certain lakes and streams within the Sequoia-Kings National Parks have been successfully eradicated using gillnets and electrofishing. However, the streams that were successfully eradicated are short in length, small in width, have effective downstream barriers which prevent fish from reinvading, and all but one is ephemeral. The one perennial stream where non-native fish have been successfully eradicated is a short stream connecting two lakes where the fish were eradicated using gill nets. Another stream, which has been electrofished since 2001, has had a significant reduction in the fish population; however, non-native fish have not been completely eradicated. This stream is 1.8 km long, has an incomplete barrier downstream, and is perennial (D. Boiano, NPS Fishery Biologist, pers. comm. 2009).

The Lake Tahoe Basin Management Unit (LTBMU) has initiated a brook trout eradication program using gill nets in several small lakes (85 surface acres) and electrofishing methods in approximately 10 miles of stream habitat. The LTBMU estimates that it may take 15 years to eradicate non-native fish from their proposed project area. There are substantial differences in the size and flow regimes between the Upper Truckee River watershed and Silver King Creek as described in CDFG's memorandum (Lawson 2009). Another difference between the two streams is the number of barriers (12-14) which occur in the Upper Truckee River compared to Silver King Creek (LTBMU 2008). Because the Upper Truckee River

contains numerous barriers, biologists are able to treat short sections of stream without having brook trout reinvade.

Silver King Creek has no barriers within the treatment area except for Llewellyn Falls and the series of barriers in Silver King Canyon. It is also characterized by meadow habitats that contain large undercut banks and deep pools. The system also has higher gradient reaches that have large boulders, cobbles, deep pools and large woody debris. The other key difference is the species of non-native fish which occurs in the two streams; brook trout (competitor) in the Upper Truckee River and rainbow trout/hybrids (competitor/hybridizing) in Silver King Creek (refer to discussion above on differences between the two species).

Master Response E:
Response to Letters in Support of the Proposed Action

The Agencies appreciate the letters received in support of the Paiute cutthroat trout restoration project. In addition to more than 400 letters and emails from private citizens, USFWS and CDFG received letters from the Alpine County Fish and Game Commission, the Washoe Tribe of Nevada and California, and a number of fly fishing groups including Stanislaus Fly Fishers, California Fly Fishers Unlimited, Trout Unlimited, and Diablo Valley Fly Fishermen. These letters cite the success of the Lake Davis pike eradication project, the decline of native trout species, and other factors. These and other support letters (Letter Nos. 22 - 36) are provided in Attachment 1. All support letters are listed on Table 1 and include over 75 letters received by USFWS and over 500 letters received by CDFG.

Table 1 Letters Received in Support of the Paiute Cutthroat Trout Restoration Project

Support Letters Presented in Attachment 1			
Randy van Vliet	David Lipscomb	Drew Irby	Marie Barry
Derald Lahti	Jim Lowe	David Zellmer	Michael Leo Cronin
Bill Felts	Pat Munday	Stephen Haggard	
Kevin Mather	David William Lass	Keith Pfeifer	

Other Support Letters Received by USFWS and CDFG			
Ralph Cutter	Jane Shandoff	Jeff Voth	Richard L. Hall
B. Pritchett	John Rogers	Jeff Walters	Edgar Fincher
Nick P.	James Peterson	Keith Veltkamp	Timothy Devine
Michael Leo Cronin	Michael J. Miller	Ward H. Shandoff	Brenda Dabner
Jerom?	Mick McFarland	Brian J. Johnson	Michael Carl
J?	Rock Libby	Steven Gilbert	Patrick Bunker
D. Aruilla	Ian Hunter	Cullen Emsing	William Schudlich
Jay Brusseau	Harold Hunter	John E. Crane	Bruce Hysmith
David Katz	Roger Houck	Betsy Clark	Lisa & Mike Lynch
Dwight Hendrix	Buddy Holtzendor	William R. Young	Gary Slade
Dave Trimm	Bryant C. Helvey, P.E.	Dennis O'Conner	Dave De Ruysscher
John Roe	Tony Gronich	Scott Ahlf	Gary Marston
Ian Parrott	Jim Goodwin	Tim Smith	Sam Patton
Kevin M. Matthews	Andy DeMarco	Thomas Sabol	George Starn
Stephen E. Hanks, MD	Don M. DeLano	Pat Roe	Corey Kruitbosch
Chris Diamante	Seth Davis	Dr. C. Mark Rockwell, D.C.	Daniel Line
David Choweller	Darryl Crow	Linda S. Perone	Ray Found
Alvin Browdeer	Barbara Conroy	Ken Murray	Tony Van Houten
Cody B. Walker	Tane R. Abbott	Chris Land	Tulio Bran
Lucas Young	Dustin Aldridge	Donald N. Krueger	Michael Tomlinson
Daniel J. Trozak	David Sproul	Doug Kelly	Alice Rich
Jeff Sudol	Jonathan S. Vordermark, MD	Monte Hendricks	John Brinkley

Jim Keys
Paul Mouriski
Bill Kreisl
Ricardo da Silva
Richard James
Denise Lytle
Bob Gomez
Jeff Schillings
Andy Coradeschi
Karen Burchett
Alex Vollmer
Mike Frederick
Steven Esgate
Charles Hammerstad
Jay Kaneshige
Ross Munro
Mike Soria
Robert Nash
Jim Johnson
John Kolarik
Janet Corwin
Kenneth Siebel
Linsey Fredenburg
Glenn Short
Harvey Zeidwerg
Steve Mckee
William Joost
Ryan Davidson
John Winzler
J.W. Byrne
Patti Victorine
Jon Abbey
Jon Vanderhoef
Steve Birndorf
Jeff King
Alan Roesberry
David Thomas
P. Gauld
Joseph Herzog
Steven Wiessler
Peter Pelletier
Jeffrey Martin
Timo McIntosh
Ed Phelan
David Balducci
Pete Arnaudo
Jack Cooke
Gary Brugman
Ken Rasler
Kent Hull
Judith Brown
Glen Bennett
Louise Le Cam
Duane Nascimento

Dean Mades
James Grant
Richard Harvey
Joe Tax
Rachel McCain
Charles Bemis
Anthony Andreini
Scott Cavin
Michael Carlson
Steven eggert
Eric Adema
Jack Doo
Janet Hillgen
Brad Martin
E. Byron McCulley
Christopher Jones
Eamon Moriarty
Dan Beveridge
Kirston Koths
Ronald Ramsey
Willie Labrie
Jerry Urban
Rochelle Lafrinere
Hugh D. Barron
Roger Williams
Guy Williams
Spencer Adkisson
James Lundeen
Bruce Raskin
Audrey Williams
Michaei Taguiam
Fred Webster
Brian Waters
Leon Felus
Michael Jordan
Ronda Reynolds
Joseph Marcotte
Don Kennelly
K. Krupinski
John Shean
Douglas Warson
Arthur Strauss
Robert Theys
Greg Ballmer
Dwight Hendrix
Rita Guidi
Nathan Hall
Ann Roche
Dan Silver
Glenn Tochioka
Zane Vorhes
Douglas Biederbeck
Keith VAughn
John Blair

Mark Sapiro
Wayne Louie
Redge Hawley
Keith Coulston
Richard Cedor
Ron Zigelhofer
Daryl Honey
Lisa Hogan
Gil Dias
Luke McKeever
Kirk Hopkin
Ray Nielsen
Joseph Sturla
John DeMartino
Terry Fernandez
Anthony Brookfield
Bruce Ashley
Clifford Aggen
Duane Nascimento
Richard Hanavan
Gregg Whitley
Steven Ramsey
Michael Ogden
Christopher Lima
Andrew Youngmeister
Larry Cebull
Dougald Scott
Julie Whetzel
Michael Henstra
William Wickliffe
Kathy Hall
Mark Flippin
Sunni Wigand
Gary Backman
Scott Lyons
John Lucas
William Wharton
Terry Langowski
Mark McCleary
Michael Rettie
Walter Wolford
James Feller
Dennis Harper
Ellen Hecht
Christopher Moua
Bob Rosenberg
Ben Croce
Noemi Johansson-Miller
Teri Slingerland
Martin Stockel
David Torres
Shigeyoshi Hara
Cindy Charles
Larry Lundberg

Sarah McKee
Robert Chang
Glen Anderson
Phil Bemis
Paula Zerzan
Stanley Ohara
Trevor Rhodes
David Peterson
Lisa Burford
John Fitzgibbon
Danny DeTora
Jim Carpenter
Sarah Wassmund
Mike S. Goodman
Laura Loper
Bryan Sesser
Kimberly Peterson
Paul Crafts
William Okelly
Jerome Marek
Kristen Westphal
Dale Yamashita
Stephen Gibbs
Dennis Klimke
Rev. Jeffrey Earl Womble
Brian O'Rourke
Randy Wilson
Scott Williams
Kim Neill
Gary Steddom
Michael Green
Thomas Smith
Bruce Valentine
Brian Hines
Fred Lonigro
Jack Ish
Richard Kuhwarth
Don Meehan
Gerald Young
Larry Shelburne
Spence McIntyre
David Haskell
Bill Werner
Michael Russell
Jim Marchio
Penny Dobb
Donald Heisey
David Borgonovo
Allen Hasty
Helen Prusiner
Barry Tang
Michael Kielich
Chuck Schultz
Benny Calderon

Alan Colombano
Sandra Noah
John Parmenter
David Smith
Jon King
Terry Manson
Ronald Shumaker
Scott Holtslander
Larry Taylor
David Karrs
Don Mittelstaedt
Greg Binon
Andrew Clawson
Benjamin Edwards
Nicholas Salle
Elliot Ichinose
Jason Bowman
Steve Netti
John Weatherman
Gabriel Lopez
Candy Bowman
Jim Basye
Stuart McCarthy
Ryan Hollister
Patricia Matejcek
Candy LeBlanc
William Chinnock
Charles Breneman
Joe Latham
Francisco Vernaza
William Seward
Thomas Allen
Robert Simas
James Collins
John Musick, PhD.
Carl Salmonsen
Erik Helgeson
Jerry McKnight
Mary Lee
Cruz Soto
Matthew Edens
Robert Constantine
Bill Ditz
Jeannine Brewer
Davin Henderson
Carl Roner
Ernie Swanson
Drew Kelsey
Mike Storm
Steve Vannort
Whitney Schutt
Geoff Pryor
Edward Filice
Robert Matzke

Fred Mitsch
Rick Saunders
Gary Bard
Gary Slade
Philip Havlicek
Russell Mcburney
Carl Robins
Glen Quintos
Vincent Berry
Chris Cordano
Gene Gantt
Michael McDevitt
Rob Phillips
Nicolas Bauer
Deborah Lancman
Linda Ach
Randall Parrish
Rick Wiggins
Jim Mangels
David Sopjes
Les Gilman
Francis McCarthy
Sonia Dinger
Casey O'Hara
Madeleine Flandreau
Jim Parks
David Katz
John Rees
Tom Robbins
Ed Jackovic
Dan Bacher
Jim Hirzel
Robert Larne
Bob Fink
Gary Strawn
R Parcell
Terry Sternberg
Timothy Hunt
Fletcher Larson
Bob Pester
Dave Grometer
Dave McGraw
Jerry Krohn
Larry Durocher
Leslie Prestwood
Wade Goertz
Wayne Smith
Mark Olinger
Jinx Hydeman
Lew Riffle
James Blackburn
Richard Golden
Richard Anderson
George Carter

David Peterson
Michael O'Brien
Gerald MacIntosh
Scott Houck
Kathleen Kockritz
Raymond Lorenson
Lyle Timmerman
Jerry Prine
Malcolm Sowell
Richard Ingram
Ron Casimere
Dinda Evans
Jack Ingram
John O'Hern
Walt Levitus
Allan Nilson
Gary Adams
Teri Meadows
Charles Spain
Charles Gunther
Sandra Fergus
Andrew Maurer
David Posner
Norb Toon
Henry Little
Mike Learmouth
Stephen Wheeler
Maria Kanaan
Lincoln Silver
John Wolcott
John Hamilton
Robin Soper
Wayne Radmilovich
Malcolm Powell
Leonard Baker
Jim Hann
Ramsey Gregory
Bill Markwood
Gary McCoy
Richard Draeger
Austin Pearson
Mark Swartz
Todd Gillihan
Dennis Leski
James Grizzell
Bruce Dau
Robert Hall
Jon Bowman
Gary Azevedo
Perry Schaefer
Nathan Lentz
Larry Jindra
Gary Dunning
Thomas Deetz

Collin Davis
Kenneth Timmons
Jim Phillips
Bruce Ajari
James Walker
Tripp Diedrichs
Greg Jacobs
Paolo Franzi
Stephanie Hodges
Catherine Dunwoody
David Gates
Bruce Forsythe
Mark York
Michael Kalinowski
Louis Gullett
Noah Kussin-Bordo
Maury Swoveland
Terry Henry
James Baird
Michael Ferguson
Charles Ward
Ron Neighbors
Andrew Bassak
Mark Momberg
Kenneth Cochrane
Kevin Britton
Stephen Spiller
Michael Turner
John Dolinsek
Creighton Reed
Rodi Martinelli
Leroy McPherson
Lars Hanson
Thomas Nelson
Dan Doble
Marc Kiefer
Charlene Chatham Price
David Peck
Will Gardner
Bruce Smithhammer
Rocky Taylor
Brooke Collins
Phillip Beck
Julie Ford
Rich Lobrovich
Colleen Lobel
Gregory Gaxiola
J. Geagan
Darrell Boyle
W. Felts
Joseph P. Paoluccio AIA PE
Dennis Fitzgerald
Greg Maars
Linda Perone

John Woodward	John C. Lee	Ben Laur?	John Niem?
Gerald Haslam	Gene Gantt?	Michael Wellbroses?	John Nafft?
Robert Oliver	Bif L. Ryan?	Barry Bussy?	Karen Johns
John McCosker	Phillip J Sy?	Isaac Mather	Jay Prigge
Brian Currier	Edward Wehl?	Shirley Richardson	Nick Orr
Stan Backlund	Mark Elliot	David Stay?	Bill Jaffe?
Gary Morris	Gregg Quinn?	Jennent Marnebay?	Robert Holland
Larry Nevills	Lee Troy?	David Johnson	Rachel Berelson
Mark Moskowitz	Stephen Karr	Anna Q. Lamms?	F. Goulelet
Dan Arvila	Bill Templin	Cheryl Mather	Erin F. Wilcox
Jay Brusseau?	Marjorie C. Brosier	Joshua Mather	Abby Jay?
Roger D. Bryan	Dan S. Brosier	Kevin Mather	Neeolet Travis?
Ralph Cutter	Dan Lahg?	Gaye Mueller	Lisa Brode?
Lisa Cutter	Bill Bass?	Nick Lambert?	Ed Manny?
James Ellinger	Jack S. Cent?	Bry Pruett?	Linda Cotter
Bev Lorens	Alan Jarril?	Susan Vrayle?	Carl R. Gustafsen

? – Signature unreadable

Master Response F:
Treatments in the Lahontan Basin

The following paragraphs describe other native salmonid restoration chemical treatments conducted in the Lahontan Basin.

1988 - 1990 CHEMICAL TREATMENT OF THE UPPER TRUCKEE RIVER, ALPINE COUNTY

In 1988 the Agencies conducted a chemical treatment of the Upper Truckee River in Alpine County to remove non-native brook trout and restore native Lahontan cutthroat trout to a historic range watershed. The multi-year chemical treatment used Nusyn-Noxfish® at 1 ppm (25 ppb active ingredient rotenone) to successfully eradicate brook trout.

- successes of 1988–1990 chemical treatment of the Upper Truckee River:
  - Successful eradication of brook trout from native Lahontan cutthroat trout historical habitat using back-to-back annual chemical treatments.
- problems associated with 1988–1990 chemical treatment of the Upper Truckee River:
  - Persistence of rotenolone (byproduct of rotenone oxidation) in Meiss Lake in the upper watershed.
  - Rotenone detected downstream (4.5 to 8.6 ppb) of neutralization in 1990 and 1991.

1988 AND 1989 CHEMICAL TREATMENT OF MILL CREEK IN MONO COUNTY

In 1988 and 1989, the Agencies conducted a chemical treatment in Mill Creek in Mono County to eradicate non-native brook trout and restore native Lahontan cutthroat trout to a historic range watershed. The multi-year chemical treatment used Nusyn-Noxfish® at 1 ppm (25 ppb active ingredient rotenone) to successfully eradicate brook trout.

- successes of the 1988 and 1989 chemical treatment of Mill Creek, Mono County:
  - Successful eradication of brook trout from native Lahontan cutthroat trout historical habitat using back-to-back annual chemical treatments.

- problems associated with 1988–1989 chemical treatment of Mill Creek, Mono County:
  - None.

1991 AND 1992 CHEMICAL TREATMENT OF WOLF CREEK, MONO COUNTY

In 1991 and 1992, the Agencies conducted a chemical treatment in Wolf Creek in Mono County to eradicate non-native brook trout and restore native Lahontan cutthroat trout to a historic range watershed. The multi-year chemical treatment used Nusyn-Noxfish® at 1 ppm (25 ppb active ingredient rotenone) to successfully eradicate brook trout.

- successes of the 1991–1992 chemical treatment of Wolf Creek, Mono County:
  - Successful eradication of brook trout from native Lahontan cutthroat trout historical habitat using back-to-back annual chemical treatments.
- problems associated with 1991–1992 chemical treatment of Wolf Creek, Mono County:
  - Rotenolone detected inside project boundaries after a two week period established by the Basin Plan. The persistence was in Wolf Lake and the problem was similar to that encountered in Meiss Lake in the Upper Truckee River chemical treatment. Rotenolone persisted due to unseasonable cold snap; rotenone was measured at 9.3 ppb while rotenolone measured 17.0 ppb.

1993 AND 1994 CHEMICAL TREATMENT OF SILVER CREEK, MONO COUNTY

In 1993 and 1994, the Agencies conducted a chemical treatment in Silver Creek in Mono County to eradicate non-native brook trout and restore native Lahontan cutthroat trout to a historic range watershed. The multi-year chemical treatment used Nusyn-Noxfish® at 1 ppm (25 ppb active ingredient rotenone) to successfully eradicate brook trout.

- successes of the 1993 - 1994 chemical treatment of Silver Creek, Mono County:
  - Successful eradication of brook trout from native Lahontan cutthroat trout historical habitat using back-to-back annual chemical treatments.
- problems associated with 1993 – 1994 chemical treatment of Silver Creek, Mono County:
  - None.

The progression of chemical treatments in the Lahontan region has led to many successful restoration efforts of native cutthroat trout populations throughout their native historical ranges. The establishment of the Lahontan Regional Water Quality Control Board and implementation of Basin Plan standards have increased the level of monitoring required to ensure that projects are carried out in a manner that is least detrimental to other components of the aquatic ecosystem. Initial restoration efforts (1964, 1976, and 1977) for Paiute cutthroat trout did not have the project oversight that more recent projects have required. Technology and methods have progressively improved using streamflow dye studies and water quality monitoring to ensure project control and compliance are carried out to the best available standards. The information gained from each project has been carried out (see Table 2) and incorporated into subsequent project design; thus ensuring that the best available management practices for chemical treatments are used.

Master Response G:
Silver King Basin Treatments

In 1964, CDFG undertook (see treatment details below) the first chemical treatment of the Silver King drainage. Although this treatment covered numerous portions of the drainage, it was successful only for Whitecliff Lake and its tributary. In 1976 and 1991-1993, CDFG treated the area upstream of Llewellyn

Falls and successfully remedied the errors that occurred in 1964. Similarly, in 1977 and 1987-1988, CDFG successfully retreated Coyote and Corral Valley Creeks, again reversing the errors from the earlier treatment. These areas have not been re-treated since 1993, due to CDFG's success in complete eradication of non-natives in these areas. None of these previously treated areas are included in the current proposed Action.

1964 TREATMENT OF SILVER KING CREEK AND TRIBUTARIES UPSTREAM OF LLEWELLYN FALLS, COYOTE AND CORRAL VALLEY CREEKS

The California Department of Fish and Game embarked on the first chemical treatment in the Silver King drainage in 1964. This first effort at removal of hybridized fish and non-native rainbow trout used a 1.0 part per million (ppm) concentration of Pro-Noxfish rotenone (50 parts per billion (ppb) rotenone, active ingredient). The treatment included portions of Four Mile Creek, Upper Silver King Creek, Bull Canyon Creek, Whitecliff Creek, Whitecliff Lake, Coyote Valley Creek, and Corral Valley Creek. Neutralization was attempted using 2 ppm potassium permanganate immediately upstream of Llewellyn Falls and 200 feet upstream of the confluence of Coyote-Corral Creeks and Silver King Creek (Beland 1964, Warner 1964).

The 1964 treatment was only partially successful and led to several unanticipated problems that had to be corrected later. The 1964 chemical treatment of Silver King Creek and tributaries successfully eradicated Lahontan cutthroat trout from Whitecliff Lake and tributary to the lake (Richard 1965, Ryan and Nicola 1976, Bacon 1977). However, the 1964 treatment also led to a fish kill downstream of Llewellyn Falls to the confluence of Tamarack Creek due to incomplete neutralization of rotenone with potassium permanganate (Beland 1964). In addition, there was the failure to treat high enough in the tributaries to successfully eradicate hybridized and non-native trout that were resident upstream of the uppermost drip stations (Bacon 1977 and Flint et al. 1998). Since backpack sprayers were not used, slow backwater areas or off-channel habitats that were occupied by hybridized and non-native trout were not treated (Bacon 1977, Flint et al. 1998).

After the discovery of hybridized and non-native trout in the late 1960s, CDFG attempted to eradicate the hybridized and non-native trout from Silver King Creek upstream of Llewellyn Falls during electrofishing surveys. This effort was not successful and led to the decision to re-treat Silver King Creek upstream of Llewellyn Falls in 1976 and Coyote and Corral Valley Creeks in 1977.

1976 TREATMENT OF SILVER KING CREEK, UPSTREAM OF LLEWELLYN FALLS

Treatment of Silver King Creek in 1976 used two different piscicide formulations of antimycin (Fintrol) and rotenone (Pro-Noxfish). The first treatment used a 10 ppb concentration of Fintrol. This resulted in an incomplete eradication at all locations that were treated with this formulation. The ineffective use of Fintrol resulted in a decision to retreat all of the stream sections and tributaries using 1 ppm of Pro-Noxfish. This retreatment also resulted in an incomplete eradication in Bull Canyon Creek and it was treated again with a concentration of 5 ppm concentration of Pro-Noxfish. Neutralization was performed by adding 1 ppm of potassium permanganate at Llewellyn Falls, and there was a documented fish kill for approximately 1.0 mile downstream of the falls (Bacon 1977). The lack of success of this treatment has been attributed to the use of uncertain genetic stocks for restocking post-chemical treatment and not treating high enough in the drainage (Flint et al. 1998).

1977 TREATMENT OF COYOTE AND CORRAL VALLEY CREEKS

The 1977 treatment of Coyote and Corral Valley Creeks used a concentration of 4 ppm Pro-Noxfish for 1.0 hour and then reduced to 1 ppm for an additional 3.0 hours. Neutralization was performed using a potassium permanganate concentration of 3 to 4 ppm just upstream of the falls located on Coyote – Corral Valley Creek. The treatment used multiple drip stations located throughout the drainage. Backpack spray

rigs and small drip stations were used to treat slow backwater areas and tributary streams. This treatment used rhodamine dye to determine the streamflow transport times to assist in determining the placement of drip stations. This was a single year treatment of the two tributaries to Silver King Creek (Wickwire 1978).

The 1977 treatment was successful in removing hybridized and non-native trout from Corral Valley, and there have been no further treatments of this area. However, the treatment of Coyote Creek did not successfully eradicate hybridized and non-native trout and led to further treatments in 1987-1988.

1987 AND 1988 TREATMENT OF COYOTE AND CORRAL VALLEY CREEKS, TRIBUTARIES TO SILVER KING CREEK

In 1987 and 1988, back-to-back treatments were conducted on Coyote Creek. Noxfish was administered via drip stations and backpack spray rigs at 0.575 ppm (86.3 ppb active ingredient rotenone). The 1987 treatment resulted in complete removal of hybridized and non-native trout upstream of a partial barrier on Coyote Creek, and the 1988 chemical treatment completed the removal of hybridized and non-native trout in Coyote Creek downstream to the barrier falls located immediately upstream of the confluence with Silver King Creek (Flint 1989). In addition, there were no fish kills downstream of the neutralization station located just upstream of the barrier falls on Coyote-Corral Valley Creek.

1991-1993 TREATMENT OF SILVER KING CREEK, UPSTREAM OF LLEWELLYN FALLS

The continued presence of hybridized fish in Silver King Creek upstream of Llewellyn Falls led to the decision to retreat upper Silver King Creek beginning in 1991. The project was conducted over a period of three years due to failure of past single year treatments on Silver King Creek. This treatment employed the use of detailed flow modeling using rhodamine dye to assist in the placement of drip stations and provide overall project control (Flint et al. 1998).

In 1991, two treatments of 1.0 ppm Nusyn-Noxfish® (25 ppb active ingredient rotenone) were applied at multiple drip stations throughout Silver King Creek, upstream of Llewellyn Falls. The treatment also employed backpack spray rigs and spray bottles so that slow moving or backwater areas along with springs and seeps could be treated to eliminate untreated refugia areas for fish to escape the rotenone. Neutralization was performed immediately upstream of Llewellyn Falls.

During the 1991 treatment, there was a third treatment conducted approximately one month after the initial two treatments of the upper most section of Silver King Creek. This section was located upstream of the confluence with Fly Valley Creek. This was necessary due to the discovery of trout in that reach during the first treatment in 1991. This partial treatment had a neutralization station located approximately 0.5 mile upstream of the confluence with Fly Valley Creek (Flint et al. 1998).

In 1992, a second year of treatment was conducted in Silver King Creek upstream of Llewellyn Falls. The treatment used a concentration of 1 ppm Nusyn-Noxfish® (25 ppb active ingredient rotenone) and was neutralized at Llewellyn Falls using a concentration of potassium permanganate ranging from 1.5 to 3.0 ppm. There was a hybridized fish discovered upstream of the uppermost drip station (1991) on Four Mile Canyon Creek and therefore a decision was made to add a drip station on Four Mile Canyon Creek approximately 0.3 miles upstream of the barrier falls where the drip station was located in 1991 (Flint et al. 1998). A fish kill occurred on the third day of the project in Silver King Creek downstream of the 30-minute neutralization zone located below Llewellyn Falls. The visual estimates of the numbers of fish killed ranged between 600 to 1,000 fish.

In 1993, a decision was made to perform a final year of treatment of Silver King Creek upstream of Llewellyn Falls. This was due to the number of trout found during the 1992 treatment and the presence of hybridized fish that were found among the survivors.

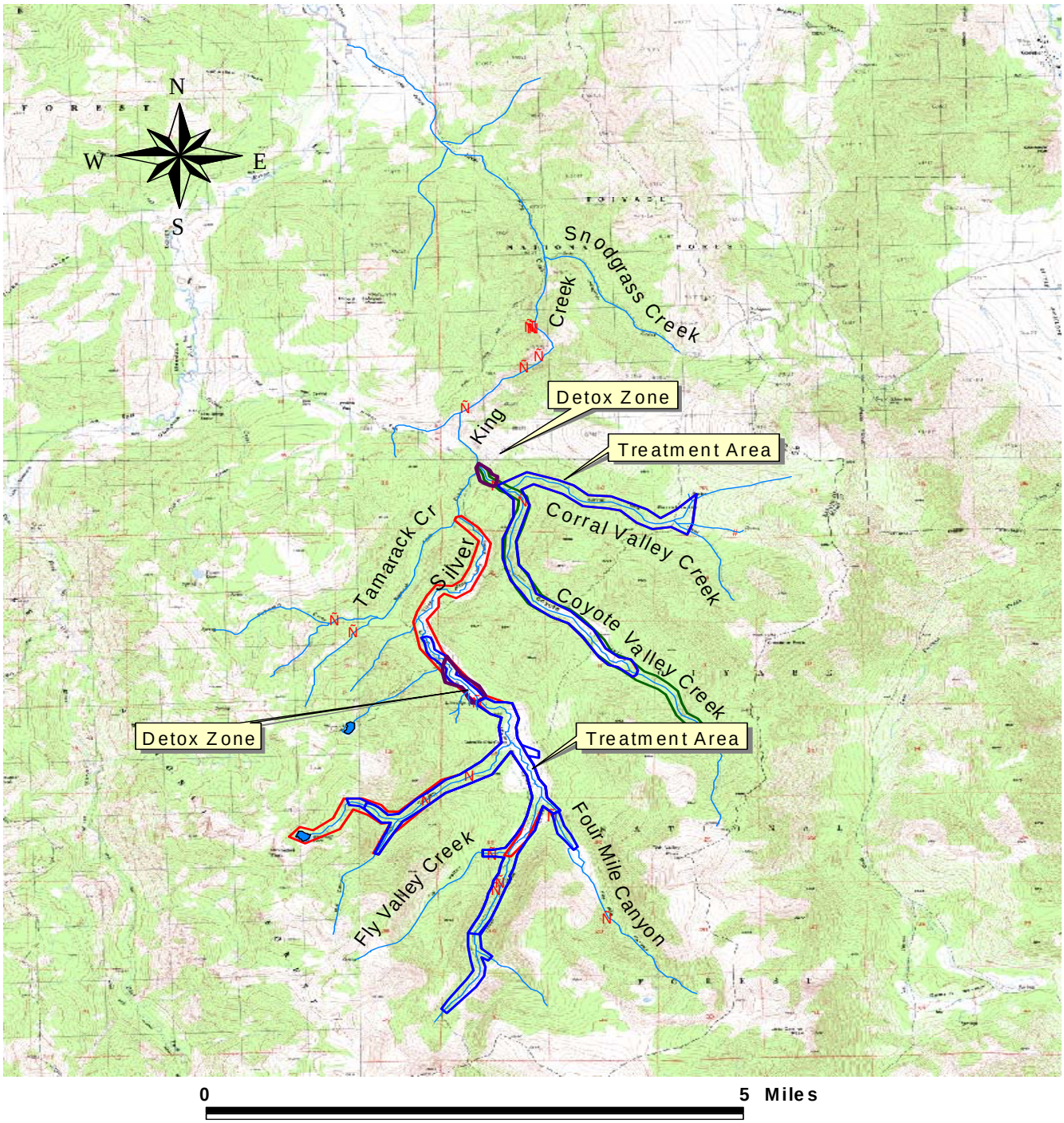
The final treatment in 1993 was delayed until late September to await the results of an allozyme analysis that would dictate the extent of the treatment area on Four Mile Canyon Creek. It was also delayed to ensure that all of the fry had emerged from the gravels. The treatment used 0.5 ppm (12.5 ppb active ingredient rotenone) Nusyn-Noxfish® instead of 1.0 ppm (25 ppb active ingredient rotenone) due to cold water temperatures and concern for the efficacy of neutralization under those conditions. An additional consideration was to prevent a fish kill downstream of Llewellyn Falls as had occurred in the previous year through the continuous application of a higher concentration of potassium permanganate (4 days) (Flint et al. 1998).

A second drip station was also added to Four Mile Creek and a higher concentration of Nusyn-Noxfish® was applied at 2.0 ppm (50 ppb active ingredient rotenone) to ensure adequate toxicity. The higher concentration did not create an issue for neutralization due to dispersal distance from the downstream neutralization station and the overall reduction in drip stations for the project on the second day of treatment.

The 1993 treatment also used a field monitoring methodology to determine the amount of residual potassium permanganate present at the 30-minute monitoring station at the downstream end of the project. This methodology used a portable colorimeter to evaluate potassium permanganate and its oxidation products. This methodology also provided additional quality control to ensure that residual levels of potassium permanganate did not exceed levels that would affect fish and wildlife outside of the project area (Flint et al. 1998).

Several issues arose during the final year of treatment that were not anticipated. An escape of hybridized sentinel fish held in an unnamed tributary immediately upstream of Bull Canyon Creek led to an immediate spray treatment that caused an unexpected pulse of higher concentrate rotenone to pass downstream to neutralization. This pulse peaked at 40 ppb, about double the concentration that was expected.

Also, due to the cold water temperatures, there were sub-lethal levels of rotenone detected at the 30-minute neutralization monitoring station (downstream compliance point for the project). The small concentration of rotenone detected at the 30-minute monitoring station did not manifest biologically as all sentinel fish at the 30-minute station remained alive throughout the project, and there was no fish mortality observed in the stream below the neutralization station. The cold water temperatures apparently slowed the oxidation of rotenone as there were sufficient levels of potassium permanganate available (Flint et al. 1998). See map below.



Silver King Chemical Treatments 1964 through 1993

Notes: Treatments conducted in Upper Silver King Creek 1964, 1976, 1991,1992,1993.
Treatments conducted in Corral Valley Creek 1964, 1977
Treatments conducted in Coyote Valley Creek 1964, 1977, 1987, 1988
Red lines indicate extant of 1964 treatment
Blue Lines indicate extant of 1976 – 1993 treatments
Red crosses indicate fish barriers in the system.

Master Response H:
Tamarack Lake

As a result of extensive sampling in 2009 the Agencies have deemed Tamarack Lake to be fishless (Somer and Hanson 2009, Hanson 2009). The result of this determination is that Tamarack Lake will not be chemically treated and is no longer considered part of this project. In the event unforeseen conditions lead the Agencies to later determine that chemical treatment of Tamarack Lake is necessary to the goals of restoring the Paiute cutthroat trout to its historic range and delisting the species, the Agencies will take all necessary steps to ensure that any subsequent treatment of Tamarack Lake satisfies the requirements of NEPA and CEQA. The analysis of chemical treatment and the impacts associated with the lake are contained in Sections 5.1.4.2 (Alternative 2: proposed Action) and 5.4.4.2 (Alternative 2: proposed Action). Since the lake will not be treated these impacts will not exist.

Master Response I:
Climate Change

The Agencies do not contest the potential deleterious effects of climate change. Nor do the Agencies contest the effects of climate change on biota. No information that specifically discusses the effects of climate change within the project area is available. However, general information that discusses past and potential future climate changes on a regional and world-wide scale is available.

Research has shown that the annual mean temperature in North America has increased from 1955 to 2005; however, the magnitude varies spatially across the continent, is most pronounced during spring and winter months, and has affected daily minimum temperatures more than daily maximum temperatures (Field et al. 2007). Other effects of climate change include, but are not limited to, changes in types and amounts of precipitation (Knowles et al. 2006, Seager et al. 2007), earlier spring run-off (Stewart et al. 2005), longer and more intense fire seasons (Brown et al. 2004, Westerling et al. 2006, Bachelet et al. 2007), and more frequent extreme weather events (Diffenbaugh et al. 2005, Rosenzweig et al. 2007). Climate change is predicted to have several effects on cold water habitat including: (1) increased water temperature; (2) decreased stream flow; (3) change in the hydrograph; and (4) increased frequency and severity of extreme events such as drought and floods (Stewart et al. 2005, Ficke et al. 2007, Bates et al. 2008, Webb et al. 2008). These changes in climate and subsequent effects can be attributed to the combined effects of greenhouse gases, sulphate aerosols, and natural external forcing (Karoly et al. 2003, Barnett et al. 2008).

Warming trends seen over the past 50 years are predicted to continue (Field et al. 2007). The Intergovernmental Panel on Climate Change states that of all ecosystems, freshwater ecosystems will have the highest proportion of species threatened with extinction due to climate change (Kundzewicz et al. 2007). Species with narrow temperature tolerances and cold-water species (*e.g.*, salmonids) will likely experience the greatest effects from climate change, and it is anticipated that populations located at the margins of the species' hydrologic and geographic distributions will be affected first (Meisner 1990, Dunham et al. 2003b, Bates et al. 2008). Several studies have modeled the effects of increased water temperatures on North American salmonids (Meisner 1990, Keleher and Rahel 1996, Jager et al. 1999, Rahel 2002, Mohseni et al. 2003, Flebbe et al. 2006, Preston 2006, Rieman et al. 2007, Kennedy et al. 2009). The extent of habitat predicted to become unsuitable for salmonids ranges from 17 to 97 percent, depending on various factors such as the magnitude of the temperature increase and the region of North America in which the species exists (Rahel 2002, Flebbe et al. 2006, Preston 2006, Rieman et al. 2007). Additionally, these studies predict the loss of suitable habitat for salmonids mainly at the southern extent of their range and at lower elevations.

In response to increasing temperatures, salmonids will shift their distributions to northern latitudes (if possible) and/or higher elevations to find adequate stream temperatures (Keleher and Rahel 1996, Poff et al. 2002). This will likely increase fragmentation of populations and coupled with increases in stochastic events, will further disrupt metapopulation dynamics which increases the probability of extinction

(Dunham et al. 1997, Fagan 2002, Opdam and Wascher 2004, Frankham 2005, Wilcox et al. 2006). Restoring physical connections among aquatic habitats may be the most effective and efficient step in restoring or maintaining the productivity and resilience of many aquatic populations (Bisson et al. 2003, Dunham et al. 2003a, Rieman et al. 2003, Dunham et al. 2007). The focus should be to protect aquatic communities in areas where they remain robust and restore habitat structure and life history complexity of native species where aquatic ecosystems have been degraded (Gresswell 1999, Seavy et al. 2009).

Climate change could have an effect on invertebrates worldwide, not just in Silver King Creek and not just at high altitudes. Burgmer (2007) describes how Odonata are expanding their range northward through Britain, improving water quality indices. The authors caution that improvements in calculated indices may actually be a function of species changes resulting from climate change. Chessman (2009) looked at response to drought and extrapolated results to state that species may be vulnerable to climate change. Hogg (1996) conducted an experiment by splitting a stream and subjecting one half to warming and describing the changes in species composition. Hogg (1996) also described the uncertainties of extrapolating these data. The Agencies believe that using such articles to make findings regarding the potential impacts of the project would require considerable and inappropriate extrapolation regarding the extent of climate changes, where temperature rises may occur, the extent to which these changes will affect baseline conditions, the adaptability of invertebrates to temperature changes, and finally, considerable speculation regarding the potential effects of the proposed Action when considered together with the effects of climate change. Both CEQA and NEPA advise against such speculation.

The impacts of global warming to macroinvertebrate are likely to occur over the long-term, be slow to materialize, and the impacts are highly uncertain. Other than making a general qualitative statement, it would be highly speculative to evaluate the potential loss of invertebrate species resulting from the project on top of losses of invertebrates from global warming decades or centuries in the future. This project, on the other hand, is limited in duration and very focused geographically. Given the differences in the time frames for the impacts, there is no reasonable basis on which to conclude that this brief project will have any synergistic effect with the long-term impacts associated with global warming.

To the extent commenter's suggest the Agencies evaluate the cumulative impacts of the project and climate change on the project area, such an evaluation is not required by CEQA or NEPA, both of which require consideration of the project impacts in combination with other past, present and reasonably foreseeable projects. Climate change and global warming are not projects that fall under this definition, but global phenomena believed to be occurring due to man-made sources and natural processes. It is both unnecessary and infeasible to evaluate the cumulative impacts of the Paiute cutthroat trout restoration project in combination with global warming.

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Californians for Alternatives to Toxics

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May 4, 2009

To: Robert D. Williams, Field Supervisor
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U.S. Fish and Wildlife Service
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Stafford Lehr
Senior Environmental Scientist
Paiute Cutthroat Trout Restoration Project
California Department of Fish and Game
North Central Region
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Rancho Cordova, CA 95670
SilverKingPublicComment@dfg.ca.gov

From Julia Olson on behalf of:

Californians for Alternatives to Toxics
315 P Street
Eureka, CA 95501

and

Wilderness Watch
P.O. Box 9175
Missoula, MT 59807

Re: Comments on the Draft Environmental Impact Statement/Report (DEIS/DEIR) for the Paiute Cutthroat Trout Restoration Project, Carson-Iceberg Wilderness, Humboldt-Toiyabe National Forest, Alpine County, CA; Rotenone poisoning in the Silver King Creek watershed.

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Mr. Williams:

Californians for Alternatives to Toxics ("CATs") and Wilderness Watch (jointly referred to herein as CATs) submit these comments on the Paiute Cutthroat Trout Restoration Project DEIS/DEIR ("DEIS"). CATs is a non-profit organization dedicated to promoting alternatives to the use of pesticides and toxic chemicals in order to keep such chemicals out of the environment and prevent harmful results to people, animals, water and the land. Wilderness Watch is a non-profit organization dedicated solely to protecting the lands and waters in the 110 million-acre National Wilderness Preservation System. Wilderness Watch strives for proper stewardship of these remarkable Wilderness reserves through citizen oversight, education, and continual monitoring of federal management activities.

Both CATs and Wilderness Watch were plaintiffs in the prior lawsuit, which led to the preparation of this DEIS and which resulted in an injunction of this project in 2005. Both organizations have a long-standing interest in protecting this watershed from poisoning. Members of both organizations depend for their health, culture, education, recreation, enjoyment and well-being on the preservation and protection of Sierra Nevada wilderness areas and all the natural resources, species and biodiversity within them.

Please send a copy of the FEIS/FEIR, ROD, other notices, WDR permits and any other documents relevant to this project to the above addresses for CATs and Wilderness Watch. Please also send copies of the same to the attorneys who represented CATs in its prior lawsuit against the Forest Service on this same rotenone project, Julia Olson and Pete Frost, at the following addresses:

Julia A. Olson
Wild Earth Advocates
2985 Adams Street
Eugene, OR 97405

Peter M.K. Frost
Western Environmental Law Center
1216 Lincoln St.
Eugene, OR 97401

CATs appreciates that the USFWS and CDFG have finally prepared a joint EIS/EIR to evaluate this project. However, the NEPA/CEQA analysis is deficient in many respects and does not properly consider, disclose or evaluate critical impacts of this project or reasonable alternatives to the preferred alternative. Further, the agencies have not addressed probable violations of other federal 1-1

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and state laws, if this project were implemented. All of these concerns are addressed below. Because the DEIS is so deficient, CATs respectfully requests that the agencies withdraw the project, or issue a new DEIS for public review and comment. Further, CATs requests that the use of rotenone be removed from consideration for this project and that non-piscicide means of protecting Paiute cutthroat trout and other native fish populations be used in order to preserve the integrity of this wilderness stream ecosystem and increase the probability that it will remain an important source of biodiversity in the face of global warming and continued human impact. CATs strongly opposes single species management, in the form of poisoning, to the detriment of other native species in the ecosystem. 1-1 continued

NEPA/CEQA

In 2005, in issuing a preliminary injunction enjoining the 2004 iteration of this stream poisoning project, the Federal District Court for the Eastern District of California recognized "[Nancy] Erman's and Dr. Herbst's notable and well recognized expertise in the precise area of Sierra Nevada mountain invertebrate ecology" and found that "their opinions and concerns deserved close and extensive attention; the Service should have carefully and publicly weighed their opinions against other comparable expert opinions. While the Service's conclusions are clear in the EA and FONSI, how and why the Service reached those conclusions is not at all clear. That process of assessing and balancing the environmental impacts deserves far more transparent and careful analysis." *CATs v. Troyer*, NO. CIV. S-05-1633 FCD KJM, p. 9 (E.D. Cal. Aug. 31, 2005).

The Court also held, that "it appears to the court that the solid scientific data regarding Ms. Erman's declaration that there is a high probability that rare and endemic species live in the Project area, is 'precisely the [type] of information . . . that is required before a decision that may have a significant adverse impact on the environment is made.' *National Parks & Conservation Ass'n v. Babbitt*, 241 F.3d 722, 733 (9th Cir. 2001)." *CATs v. Troyer*, NO. CIV. S-05-1633 FCD KJM, p. 9 (E.D. Cal. Aug. 31, 2005). " The court notes that on this issue, the Forest Service had two years to gather this information, between the earlier 2002 EA and the 2004 [and] choose not to do so." *Id.* at p.9, fn. 9. 1-2

As described herein and in the 2009 Comments of Nancy Erman and Don Erman, attached as Exhibit A, the agencies have not carefully and with transparency analyzed the impacts of the project. Nor did the agencies diligently collect the relevant data that would have allowed for informed decision-making. 1-3

The DEIS continues to ignore much of Erman's work and comments over the years. 1-4

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Proposed Action and Alternatives

The stated purpose of the project is to prevent hybridization of Paiute cutthroat trout with other salmonids as a step towards preventing extinction of the fish and to allow it to be removed from the federal threatened species list. The second stated purpose is to restore Paiute cutthroat trout to its so-called "historic range as stated in the Revised Recovery Plan (USFWS 2004)." p.1-3.

1. The DEIS should have considered an alternative that would have specifically addressed the agencies' perceived threat of an illegal introduction of non-native trout into Paiute cutthroat trout habitat above Llewellyn falls. The primary stated project purpose is to prevent hybridization with other salmonids and the only threat of hybridization specified in the EIS is that someone, like a rogue angler, might intentionally or accidentally remove a live non-native trout from below Llewellyn falls and move it to the stretch of stream above the falls where native Paiute cutthroat trout live. 1-5

2. It does not seem possible to wholly prevent an illegal transplant. If an angler wanted to do so, he could accomplish the task in such a remote location by carrying in a fish and placing it in the water. However, because the EIS pinpoints anglers as the real threat, a reasonable alternative (or component of an alternative) that should have been considered would be to prohibit fishing in the stretch of creek below Llewellyn falls or to prohibit fishing in the entire watershed or wherever the threat seems most likely to exist. In addition to restricting fishing, the agencies could increase fishing and backcountry education when permits for entry into the wilderness are issued in order to make users aware of the risk to the Paiute cutthroat trout. Further, the agencies could create a greater wilderness ranger or volunteer presence in this stretch of creek to talk to anglers or hikers about how to handle fish appropriately in the area. As the DEIS notes, informational kiosks or signs could be posted outside of wilderness informing people of the restrictions on moving fish. 1-6

3. None of the alternatives really address how to decrease the chances of an illegal transplant to Paiute cutthroat trout habitat or what methodology they are employing in stating that the preferred alternative will reduce chances of an illegal transplant. Even if the project successfully removed non-native or hybridized fish from the 11 miles of Silver King Creek, below the alleged barriers, there will still exist non-native and hybridized fish that could be illegally moved upstream (and as we demonstrate below, the fish may on their own pass the barriers which are not truly impassable at high water). Thus, no matter how much of Silver King Creek is inhabited by Paiute cutthroat trout, there will always be the risk of an illegal transplant, which could contaminate that stretch of creek up to 1-7

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Llewllyn falls. The DEIS completely ignores this reality, even though preventing illegal transfer is intended as the primary project purpose. 1-7 continued

4. An alternative addressing illegal fish transplanting does not address the other stated purpose of the project, which is to "restore Paiute cutthroat trout to its historic range as stated in the Revised Recovery Plan (USFWS 2004)." However, the reference to the Revised Recovery Plan is a red herring as there is no scientifically valid evidence establishing that the creek below Llewellyn falls was ever historical habitat for the Paiute cutthroat trout and there is evidence stating that native habitat for the Paiute CT was above Llewellyn Falls (J.H. Ryan in Schaffer 1992). The DEIS should explicitly provide the scientific evidence demonstrating that the habitat below Llewellyn falls was Paiute CT historic habitat. 1-8 In addition, there are no known genetic markers to distinguish the Paiute cutthroat trout from the Lahontan cutthroat trout. How will managers stock SKC with pure Paiute cutthroat trout, when it cannot genetically or visually distinguish them from Lahontan cutthroat trout? 1-9 Further, the agencies have recently admitted that visually, they cannot distinguish between a pure Paiute cutthroat, a Lahontan cutthroat or a hybridized one. Since the DEIS admits there is no way to genetically test in the field, how can this project be successful? 1-10

5. One significant flaw with the current alternatives presentation and analysis is that it does not take a hard look at why the preferred alternative should be selected over Alternative 3 when both alternatives can achieve the project's purpose and Alternative 3 would do so without killing other gill-breathing organisms, such as macroinvertebrates. Neither alternative is guaranteed to be 100% successful, but the preferred alternative has significant and unmitigable consequences, which may permanently eliminate other rare and endemic species to the creek and wilderness area. The EIS should clearly disclose why the perceived disadvantages of Alternative 3 outweigh the significant harm caused by stream poisoning in the preferred alternative, including the unavoidable adverse effects and irretrievable commitments of natural resources to species and water quality, which are completely avoided by Alternative 3. This is not addressed head on in the DEIS and is an essential component of informed decision-making for this project. 1-11

6. Relatedly, the DEIS does not explain why a ten-year project (Alternative 3 in its worst-case scenario; it could be completed in three years, however) will not achieve the project purpose or will have adverse effects compared to the three-year rotenone alternative. The DEIS merely states that it would be a low-efficiency method, but it does state that it would be conducted until "fish are no longer found," which suggests that it is an effective method for achieving the project purpose. p. B-24. Efficiency is a function of many different factors, which are not fully disclosed in the EIS. For instance, how many people and hours 1-12

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would it take to implement the mechanical removal, compared to the poisoning? Could volunteers be used for the formal and not the latter? The PCT populations are currently stable, the fish have survived for hundreds or thousands of years, five back up populations in discrete stream segments exist and the DEIS presents no evidence to show that ten years is an unacceptable timeframe for completing the project. 1-12 continued 1-13

7. The DEIS is facially biased toward the preferred alternative and does not present a valid comparison of the efficacy of Alternatives 2 and 3. It is undisputed fact that rotenone poisoning does not always have the intended effect of removing all non-native fish from a stream system, as is evidenced by poisoning projects within this watershed and many others, but the DEIS does not disclose this fact. Instead, the DEIS assumes that the project will be successful and uses that as a benchmark by which to compare Alternative 3, to which it does not give the same assumption. These agencies have also had frequent mishaps when applying piscicides in the past including accidents, using the wrong amount, not neutralizing soon enough, etc. There is no guarantee that the rotenone alternative will guarantee a pure strain of PCT, but the DEIS does not admit that and it should in order to give the public and decision-makers a fair analysis of the two action alternatives. 1-14 1-15

8. In the DEIS' description of Alternative 3's impacts on PCT and the project purpose, it states without any citation to evidence, that "[e]lectrofishing or various net methods may not result in complete removal of undesired trout species in the treatment area. Therefore, this alternative *may* not meet the purpose and need for the proposed Action and *may* not be consistent with the Revised Recovery Plan." p.5.1-49 (emphasis added). Those are a lot of conclusory "mays," without supporting evidence. The DEIS must state what the comparative chances of success are for both alternatives, taking into account the greater likelihood of accidents or mistakes in stream poisoning than with elecrofishing or gillnetting. It must also cite to valid evidence of the success of nonpoisoning methods on other similar systems. The agencies did not take a hard look at the viability of this alternative. In Erman and Erman's comments on the DEIS, they cite multiple references demonstrating that mechanical removal of fish is an effective way to remove non-native fish. Both the Forest Service and the National Park Service have successfully removed all fish from streams, rivers and small lakes, in some instances even where rotenone failed. Yet, the DEIS states only that electrofishing, presumably alone, is not a proven method to remove all fish. p. 5.10-3. Yet, Alternative 3 is not just about electrofishing and again the DEIS cites no supporting evidence for this claim. Alternative 3 deserves greater attention and analysis and a complete review, using Erman's references as a starting point. 1-16 1-17

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9. Alternative 3 could be strengthened further by restricting fishing and through enhanced education and warden or ranger patrol of the area, as described above and by using greater specificity of mechanical removal methods and protocol such as that discussed in Erman and Erman 2009. 1-18

10. The agencies should consider an alternative that does not include motorized formsof access within the wilderness area. 1-19

11. Erman and Erman propose other alternatives to further strengthen Paiute cutthroat trout populations if having small isolated populations is a risk. Current fragmentation of populations has been created by the agencies and could be undone. (Exhibit A; Erman and Erman 2009). 1-20

12. The designation of Alternative 2 as the environmentally preferred alternative, when it is the only alternative that results in significant adverse effects, violates both CEQA and NEPA's mandate to fully and accurately disclose impacts. There are no significant adverse impacts stated for Alternative 3, not even to Paiute CT. Thus, besides the No Action Alternative, Alternative 3 is the environmentally preferred alternative. 1-21

Environmental Consequences

13. The DEIS does not consider, analyze and disclose a complete inventory of all other species, in addition to Paiute cutthroat trout, in the streams to be poisoned. 1-22

14. The DEIS does not consider, analyze and disclose all published literature and unpublished agency literature on the impacts of stream poisoning with rotenone formulations on non-target species. 1-23

15. Nineteen years ago, CDFG claimed in the Programmatic EIR for Rotenone use that it would be doing species level studies on macroinvertebrates. Yet, to date, none has been done. In lieu of actually identifying the species that could be extirpated or go extinct as a result of this project, the agencies now claim one of two things depending upon the page of the DEIS you are reading, either: (a) we haven't looked, therefore no rare or endemic species exist that would be harmed or (b) the project could result in the loss of rare or endemic species and this would be a significant and unavoidable impact. This is not sufficient environmental analysis. The public and the decision-makers are entitled to know if the project is about trading the viability of one or multiple rare species of macroinvertebrates for a habitat extension for PCT, in a wilderness area. 1-24

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16. In its review of rotenone, EPA concurred with Erman and Erman that system functioning could be altered as a result of rotenone's significant impacts on invertebrates. The DEIS fails to thoroughly evaluate and disclose the potential impact of this project, not just on some species of invertebrates, or populations, but on ecosystem functioning. 1-25

17. The DEIS incorrectly concludes that there would not be a significant impact to amphibians because it is moving them out of the project area. Is this a separate project that is already occurring without NEPA review? Or is it a part of this project? How many have been found and how many have been successfully relocated?

18. The DEIS should disclose and analyze the fact that the agencies are not moving tadpoles and cannot easily remove any frogs or toads from the area and that many will be killed as a result of the project. Also because their habitat will be poisoned, their food source will be affected. All of this is a significant adverse effect to amphibians in the project area, including mountain yellow-legged frogs and potentially Yosemite Toads. 1-26

19. The DEIS does not consider, analyze and disclose the impacts to other native fish within the project area including the mountain sucker, a sensitive species, the Paiute sculpin or the mountain whitefish. 1-27

20. The DEIS does not adequately analyze of disclose that springs and seeps are refuges or repositories for species that may expand their ranges as temperatures change in the future. These habitats are critical to biodiversity and longevity of species and the impacts of poisoning them are not fully disclosed in the DEIS. Significant adverse impacts are likely to occur to these micro-ecosystems, where nearly all animal life within them will be killed. 1-28

21. The DEIS inadequately discusses aquatic and terrestrial food web impacts of stream/lake poisoning. Erman and Erman 2009 discuss the importance of aquatic invertebrates on the food web. This information is not addressed in the DEIS and is an important impact of the project. 1-29

22. The DEIS must consider analyze and disclose a complete compilation of all past errors, mistakes, and accidents in past poisoning projects in the Lahontan Basin specifically and other areas generally so that the full potential ramifications of this project and mitigation efforts can be evaluated and understood. 1-30

23. The DEIS must provide scientific evidence that areas to be poisoned and stocked with Paiute cutthroat trout were the historic habitat of the PCT, since restoring historic habitat is one of the purposes of the project. Citing only the 1-31

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2004 Recovery Plan does not constitute valid evidence as the 2004 Recovery Plan relied upon the invalid 2002 Forest Service EA for this same project. Where is the proof of historic habitat? The DEIS should reference published genetic work on the PCT, including all theories for past distribution of this sub-subspecies. 1-31 continued

24. The DEIS overstates the potential impact from a catastrophic event. It ignores recent events, such as the 1997 flood and the impacts from it. It was the largest flood on record for 87 years and there were no noticeable impacts to Paiute CT. This kind of comparative analysis of threats to species should be honestly disclosed and evaluated and contrasted to the immediate death that rotenone will cause to species. 1-32

25. The DEIS must address the true impacts of this project on PCT, when scientific evidence indicates that there are no molecular markers to distinguish between Lohanton cutthroat trout and Paiute cutthroat trout and that determining their true genetic relationship and the possibility of hybridization would be important prior to any restoration projects. (Cordes et al. 2004). 1-33

26. The entire impacts assessment to fish should be reevaluated in light of the gross error in calculating the number of adult Paiute CT in the Silver King Creek drainage. More than four times as many adults than the DEIS claims live in the drainage. Erman and Erman 2009. If the entire impacts analysis was founded on only 1,020 fish when actually there are at least 4,151, the analysis should be altered significantly. 1-34

27. The DEIS fails to disclose and analyze a complete list of chemical ingredients to be placed in the SKC watershed, including all inert ingredients of identified products. 1-35

28. The DEIS underestimates the true impacts of rotenone on aquatic life because it does not account for preexisting toxins, which work synergistically or cumulatively with rotenone to weaken the natural defense systems of organisms. The rotenone risk assessment and other literature discuss these effects. 1-36

29. The DEIS's evaluation of the links between Parkinson's disease and rotenone is also inadequate. It ignores hundreds of more recent published articles on the issue. (Erman and Erman 2009). This is a significant issue for the workers and any other handlers of the pesticide. The role of accidents in stream poisoning and work over uneven terrain should be factored into the analysis of possible spills and exposure. 1-37

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30. The DEIS does not provide valid scientific evidence that an impermeable barrier to upstream fish migration exists at all times in all years at the lower boundary of the proposed stream poisoning project. The singular memo supporting the agencies' belief that the barrier is impassable was based on a low-water visit to the area, where it was determined that the barrier was between 8-10 feet high. As Erman and Erman (2009) demonstrate in their expert comments, Rainbow/steelhead trout can leap 10.8 feet vertically or 9.8 feet vertically while extending 9.8 feet horizontally. Thus, even at low water, fish could likely surpass the alleged 8-10 foot barrier. Further, at high water, even Heise admitted that the barrier may not be impassable and that at flood levels, the barrier would be reduced to 2-3 feet in height. The entire poisoning project would be for naught if the barrier is passable, which seems likely. The significant adverse impacts that will certainly occur as a result of the stream poisoning clearly deserve more than one low water unscientific assessment of impassability, but a rigorous consideration by unbiased scientists on the certainty of the barrier and risks involved in relying upon it. 1-38

Cumulative Impacts

31. The entire cumulative impacts discussion is inadequate. The DEIS lists in a chart specific actions that may have a cumulative impact on the project area, but it never discusses what those cumulative impacts would be for those projects combined with the proposed action. Courts have repeatedly held that a list does not make an adequate cumulative impacts analysis. 1-39

***Global Warming*:**

32. The DEIS only looks at global warming in terms of the project's impacts on carbon dioxide emissions, but it ignores the cumulative effects that global warming will have on the project area combined with the project's impacts. The combination of poisoning and global warming would be worse and unpredictable for invertebrates. Scientific evidence indicates that species at the top of mountains and the farthest north, such as those in cold alpine streams, will be the first to go as temperatures warm. If species are already at high elevations and in cooler environments, they cannot easily adapt to warming temperatures by moving higher in elevation. Species living in a cool alpine stream system, with limited mobility will also be at risk. There is scientific evidence that the level of aquatic macroinvertebrate gene flow among habitats may be critical to the degree of impact seen from large scale global-warming. (Hogg 1996). There is a body of literature describing the impacts of global warming on macroinvertebrate species and populations, which should be reviewed and addressed in the EIS. (*See e.g.* Burgmer 2007; Chessman 2007; Durance 2007; Hogg 1996). 1-40

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Residual Pesticides and Toxins:

33. There is valid scientific evidence that pesticide residues and other contaminants remain in the aquatic sediments of even remote waters in National Parks and wilderness and that they adversely affect aquatic organisms. The DEIS should consider the cumulative and synergistic effects of toxins in the aquatic ecosystem and their effect on all wilderness species and functioning. Amphibians and invertebrates generally have been highly effected by pesticides. 1-41

Past Stream Poisoning:

34. The DEIS should disclose the cumulative impacts of stream and lake poisoning in the Sierra Nevada and how many stream systems have been impacted by poisoning and will no longer provide baseline conditions for study and protection of watersheds. Specifically, the DEIS should provide a complete history and locations of all past, present and reasonably foreseeable stream/lake poisoning projects conducted in the Sierra Nevada by the CDFG and/or US Fish and Wildlife Service as part of the cumulative impact analysis of use of poisons on target and non-target species. Further, the DEIS does not adequately assess the on-the-ground impacts from past poisoning within this watershed. It should disclose everything that has been lost already by poisoning, both in terms of documented impacts and presumed impacts where data collection and study are lacking, but based upon relevant scientific understanding. All of the past spills, mistakes, etc. should be disclosed in the DEIS so that the public can understand the true impacts of these kinds of projects. We need to know what has already been lost, to understand the true impacts of what more we will be losing. 1-42

Continued Fish Stocking Practices:

35. The DEIS should address the cumulative impacts within the watershed and the High Sierra Nevada more generally of fish stocking by government agencies or their agents. Specifically, the DEIS should include a complete review with dates and mapped locations of all past fish stocking, planned and accidental, by state and/or federal agencies in this watershed. These actions have a significant effect on the area and are cumulative to this project's impacts. The government agencies have largely created the problem they now seek to remedy through stream poisoning, yet fish stocking of non-native fish continues and this story must be completely disclosed to the public and decision-makers. A complete discussion of past fish stocking and future (planned) fish stocking practices and actions must be disclosed and analyzed. The CEQA document being prepared by CDFG about fish stocking practices in California has cumulative impacts with this project and must be analyzed here. 1-43

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Recreational Fishing

36. The DEIS fails to consider how this project will be used for the purpose of establishing a fishery for the Paiute cutthroat trout and for including the PCT in the Heritage Trout fishing contest run by the CDFG. The DEIS avoids any analysis of the impacts of this project on future fishing by claiming that those decisions will be made later by the Fishing Commission. But the agencies have an obligation to assess reasonably foreseeable connected actions and impacts. The DEIS should answer the question of whether a goal of the project is to increase fishing of PCT above or below Llewellyn Falls. 1-44

Reasonable and Appropriate Scientific Methods/Data for Evaluating Impacts

37. The DEIS fails to disclose or evaluate the sampling and data collection protocol and methodologies proposed repeatedly by N. Erman since at least 1994. The DEIS claims that species' inventories would require sampling at multiple stations over different seasons and across multiple years, but it does not state that such sampling cannot be done or that it is infeasible. Instead it states that it is outside the scope of the project. What the agencies fail to recognize is that this sampling is a prerequisite to the project, not outside its scope. The agencies have had seven years since this project was first proposed to conduct macroinvertebrate sampling and have intentionally failed to do so, even after the Court's ruling that this type of information must be gathered *before* a decision to proceed with this project is made. The collection of data would remove speculation as to the true effects of the project. This is precisely what the agencies continue to avoid doing. 1-45

38. The DEIS' confused findings that there are no known rare or endemic macroinvertebrate species in the project area (for the unstated reason that no one has looked for them) and that there will be significant adverse effects and possible significant cumulative effects to such rare and endemic species does not comport with NEPA or CEQA's mandates that agencies take a hard look at the impacts of a project and provide sufficient disclosure and analysis to the public and to allow for truly informed decisionmaking. The decision-making occurring here is no more informed as to the effects on macroinvertebrates than it was in 2004-05, when this same project was enjoined for lack of appropriate analysis. 1-46

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39. Erman and Erman 2009 point to many other flaws in scientific methodology and analysis throughout the DEIS and the appendices, including the most recent analysis of Vinson and Vinson. All of these errors make the DEIS unreliable as an environmental review document. Significantly, the errors they point to cannot be ascribed to conflicting expert opinion, but to unscientific and unreliable analyses. 1-47

40. One significant issue raised by Vinson and Vinson is that the creek below Lewellyn Falls had been previously poisoned, which is not otherwise noted on the maps in the DEIS. Was the project area of the creek previously poisoned, which the agencies have not stated in the past, and if so, where is the evidence and project information? 1-48

41. In addition to the scientific literature and evidence referenced above, there is an extensive body of material already available for the USFWS' use in preparing the draft EIS, including public comments and expert testimony. Thus, the USFWS should review, analyze and disclose and compile as part of its administrative record for this project: (1) all of the past correspondence and documentation on the first two Environmental Assessments prepared for this project by the Forest Service; (2) all of the correspondence and documentation to the Lahontan Regional Water Quality Control Board and the State Water Resources Control Board regarding this project and the NPDES permitting; (3) all of the pleadings and declarations filed during CATs' challenge to the most recent Forest Service EA and FONSI for this project and (4) the Honorable Judge Damrell's written opinions on CATs' requests for a temporary restraining order and preliminary injunction over this project. 1-49

CLEAN WATER ACT and PORTER-COLOGNE

42. The agencies must obtain an NPDES permit or WDR for this project. The DEIS incorrectly concludes that the project would not violate the Lahontan Basin Plan's requirement for a two-year recovery of invertebrates. The scientific evidence does not support this conclusion, but shows that invertebrates do not recover within two years. Impacts in Silver Creek and other stretches of Silver King Creek were significant and long-term, exceeding the two-year limit in the basin plan. Thus, the project would violate the Basin Plan and the Clean Water Act. 1-50

43. The antidegradation policy of the Clean Water Act requires that water quality and beneficial uses be protected. Silver King Creek is designated for "COLD" water habitat beneficial uses, which includes protection of all aquatic life, including invertebrate communities. This project does not protect, but adversely 1-51

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effects the cold water habitat beneficial uses of the waters. This project would violate the Clean Water Act. 1-51 continued

44. The DEIS also fails to disclose the status of the permitting process and when the agencies will seek the permit. 1-52

WILDERNESS ACT

45. The DEIS admits that the action would impair the untrammeled quality of wilderness, but misstates the reasons for this. The wilderness values of the resource include all of the native species, not just the Paiute CT, and water quality. It irrevocably harms the wilderness values of the area to extirpate native, rare or endemic species or otherwise reduce abundance and diversity of macroinvertebrates. The consequences to amphibians and other animals up the food chain are also significant. The DEIS does not adequately or accurately discuss how this project affects these wilderness resources of the Carson-Iceberg Wilderness Area. 1-53

46. The proposed action will cause adverse impacts on people's opportunity for primitive recreation. The impacts on wilderness visitors who will be unable to drink from the creek, because it will contain poison, during their wilderness visit is also significant. 1-54

47. The loss of the stretch of stream as a baseline for scientific study also harms the wilderness value of the area. The ability of natural processes to operate free of human influence is an important wilderness value. This project represents further invasive manipulation that is cumulative to decades of manipulation of these streams and the fisheries, from stocking and other agency action. When will the area truly be treated as wilderness and not be tampered with? 1-55

48. The DEIS does not demonstrate a sufficient need for the project or even a guarantee that the project will be successful, both of which should be present before the wilderness area is poisoned. The Wilderness Act does not allow for single-species management at the expense of other native species, particularly when the real purpose of the action is to expand a fishery outside of proven historic habitat and not take any steps at reducing or prohibiting angling, the potential cause of unlawful transfer of fish above Llewellyn Falls. 1-56

49. The preferred alternative in its current form violates the Wilderness Act and should not be implemented. 1-57

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NFMA

50. The DEIS does not address the Forest Service's obligations under the Sierra Nevada Forest Plan Amendment ("Framework"), including its species monitoring requirements. The DEIS does not demonstrate that the agencies have done the appropriate monitoring to comply with the Forest Plan/Framework requirements. 1-58

PROPOSITION 65

51. The discharge into Silver King Creek of chemicals contained in the rotenone formulations violates California's Proposition 65 because such chemicals are known to cause cancer or reproductive toxicity. CDFG is exempt from Proposition 65, but the federal agencies involved in this project are not exempt. The DEIS must explain how their actions do not violate Prop. 65. 1-59

CALIFORNIA TOXICS RULE

52. Because the EIR is deficient, the agencies have not complied with the exception requirement of the CTR. The DEIS has not shown adequately that the Section 5.3 requirements would be fulfilled. 1-60

In conclusion, we respectfully ask the agencies to reconsider the need for this project. If there is a scientifically valid demonstrated need and there is adequate evidence that an impassable barrier exists, that genetic differentiation between species is possible, and that the area below Llewellyn Falls truly was historic habitat for the Paiute cutthroat trout, we ask that the agencies fully develop Alternative 3 and eliminate poisoning as a viable alternative. The consequences are too great. 1-61

Thank you for this opportunity to comment.
Sincerely,
_____/s/_____
Julia A. Olson
Attorney for CATs

15

RESPONSE

Comment Letter 1

Californians for Alternatives to Toxics (CATs)
Julia A. Olson, Attorney for CATs
May 4, 2009

1-1
Please see Chapter 5 (Environmental consequences) in the EIS/EIR and Master Responses A and D. These responses address comments generally opposing the proposed Action and questioning the adequacy of the EIS/EIR and refer to subsequent sections of the Response to Comments document for responses to specific issues. The Agencies have considered a multi-species approach with avoidance measures taken to protect sensitive amphibians and non-treatment of fishless headwaters including seeps and springs.

1-2
Please see Master Response B. This response addresses whether a species inventory is needed to characterize impacts in the EIS/EIR.

1-3
Please see Section 1.4 (Public involvement summary) in the EIS/EIR that details the Agencies actions that were taken to inform and solicit comments from the public and government Agencies. The CDFG and USFWS have committed to a careful and transparent review of the proposed Action and its alternatives through the EIS/EIR process under the California Environmental Policy Act and the National Environmental Policy Act. Please see response to Comment 1-4 and Master Response B regarding benthic macroinvertebrates and other responses provided below.

1-4
The Agencies disagree. The Agencies have collected extensive, detailed, and relevant information on the project area which is described in sections 5.1.1 (Environmental setting), 5.1.1.1 (Aquatic habitat), 5.1.1.2 (Riparian habitat and wetlands), and 5.1.1.3 (Aquatic biota, Paiute cutthroat trout, and Benthic macroinvertebrates) in the EIS/EIR. Please see Master Response B regarding the need for a species inventory and a discussion of the Agencies' approach specifically in regards to collection and analysis of information on aquatic macroinvertebrates.

1-5
Section 2.2 (Objective/purpose and need for action) in the EIS/EIR discusses the purpose and need for the proposed Action which is to restore Paiute cutthroat trout to its historic range as stated in the Revised Recovery Plan (USFWS 2004), and thereby satisfy one critical Recovery Plan component for delisting the species. Furthermore, the project would make Paiute cutthroat trout the only trout species in Silver King Creek above Silver King Canyon. By expanding the populations and range of the species, the proposed Action would also increase the probability of long-term viability and reduce threats from genetic bottlenecking and stochastic events.

Section 2.2 (Objective/purpose and need for action) in the EIS/EIR also states that the threat is from hybridization, and one possible source of hybridizing fish could be rogue anglers. See also response to Comment 1-6 for additional measures the Agencies are proposing to reduce the chances of illegal movement of fish.

Please see Sections 2.1 (History and background), 5.1.1.3 (Aquatic biota), and 5.6.1 (Environmental setting) in the EIS/EIR regarding past management actions that have been taken to reduce the above stated threat that included a 2006 Fish and Game Commission closure of the 3,600 foot reach below Llewellyn Falls. The Agencies agree that management actions such as fishery closures and regulations cannot completely remove the threat of illegal transplant of fish within and between watersheds.

1-6

See Sections 3.2.2.5 (Post-fish removal), 5.6.4.2 (Alternative 2: proposed Action), 7.1.1 (Aquatic resources), and Appendix B 4.2 (Summary) in the EIS/EIR regarding public education. Informational kiosks and signs at trailheads have already been erected that discuss Pauite cutthroat trout and cite the California Department of Fish and Game fishing regulations (this completed action is common to all alternatives). Although a greater Agency presence may reduce the threat of an illegal transfer of non-native fish, it would not expand the population and range of the species, or increase the probability of long-term viability and reduce threats from genetic bottlenecking and stochastic events. The Agencies have committed to developing informational handouts to inform anglers entering the wilderness of the sensitivity of and threats to the Paiute cutthroat trout. The handouts will be in addition to the informational kiosks and signage currently located at the trailheads. Agency personnel will continue to have a presence in the basin as budgets allow.

1-7

Please see Section 2.2 (Objective/purpose and need for action) in the EIS/EIR and Master Response A regarding the purpose and need for the proposed Action. Non-native salmonids are currently located immediately below barriers on Silver King Creek and Corral/Coyote Creek. These areas are easily accessible to the public. Movement of these fish above the barriers into currently occupied Paiute cutthroat trout habitat would be very easy. The illegal introduction of non-native salmonids into Paiute cutthroat trout habitat will always be a threat (Rahel 2004); however, by conducting the proposed Action, the Agencies will eliminate these sources of non-natives and will effectively isolate Paiute cutthroat trout in the watershed and will further protect the existing populations. While non-natives will be located below the barriers in Silver King Canyon even after implementation of the proposed Action, this area is very remote and not easily accessed by the public. An illegal transfer would require the transport of fish over the high gradient stream channel which is characterized by large boulders and numerous vertical drops in excess of five feet in height and one drop in excess of ten feet. Please see Section 5.1.1.3 (Paiute cutthroat trout) and Figure 5.1.2 regarding the barriers in Silver King Canyon. Based on stream trail crossing and locations of other trailheads, the closest sources of non-native salmonids would be 3.21 miles from Rodriguez Flat trailhead, 3.23 miles from the Snodgrass trail crossing, 3.82 miles from the East Fork Carson River, and 1.77 miles from the Silver Creek trailhead in the West Walker River watershed. Additionally, as part of the proposed Action, the Agencies will develop informational handouts that would inform anglers entering the wilderness of the sensitivity of and threats to the Paiute cutthroat trout. The handouts will be in addition to the informational kiosks and signage at the trailheads which are already in place. Agency personnel will continue to have a presence in the basin as budgets allow.

1-8

Please see Section 5.1.1.3 (Paiute cutthroat trout) in the EIS/EIR and Master Response C regarding the historical range of the Paiute cutthroat trout.

1-9

Please see Sections 2.1.2 (Past restoration efforts in Silver King Creek) and 5.1.1.3 (Existing genetic structure) in the EIS/EIR regarding genetics of Paiute cutthroat trout. Hybridization between Paiute cutthroat trout and rainbow trout can be determined using various molecular methods (Cordes et al. 2004, Finger et al. 2009) and all Paiute cutthroat trout populations have been tested. These populations show no hybridization with rainbow trout (Cordes et al. 2004).

Paiute cutthroat trout are distinguished from Lahontan cutthroat trout by a lack of spots on the body (Behnke and Zarn 1976 and Behnke 1992). Since Paiute cutthroat trout evolved from Lahontan cutthroat trout in isolation 5,000 to 8,000 years ago, the two are very closely related and no single copy nuclear marker (scnDNA) genetic technique has been developed to distinguish between them (Cordes et al. 2004, Finger et al. 2009). Investigations of population genetic structure of the Lahontan group of cutthroat trout (Lahontan, Paiute, and Humboldt cutthroat trout) detected no unique alleles in Paiute cutthroat trout however microsatellite allelic frequency data was high when compared to Lahontan cutthroat trout indicating significant genetic distinction (Nielsen and Sage 2002). The agencies use the original description (as provided by Behnke and Zarn 1976 and Behnke 1992) characterizing the difference between Paiute cutthroat trout and Lahontan cutthroat trout as a lack of spots on the body. All other meristic characteristics (physical attributes) are typical of Lahontan cutthroat trout. Past hybridization with rainbow trout and Lahontan cutthroat trout have led to heavily spotted hybridized fish (Ryan and Nicola 1976). All populations of Paiute cutthroat trout currently meet the original phenotypic (physical) description of Paiute cutthroat trout with few to no body spots. Finally, Paiute cutthroat trout populations in the Silver King drainage originated from populations known not to have been stocked with Lahontan cutthroat trout or rainbow trout (*i.e.*, Fly Valley and Four Mile Canyon Creeks); therefore; all evidence available to us indicate that only putative pure populations exist.

There was possibly an erroneous plant of Lahontan cutthroat trout into Whitecliff Lake in 1955, and these fish were found in substantial numbers during a 1964 survey of the lake and downstream in Bull Canyon Creek (Ryan and Nicola 1976). As a result of the possible erroneous plant it is likely that Lahontan cutthroat trout hybridized with Paiute cutthroat trout in Upper Fish Valley. These fish were eventually removed through various chemical treatments, especially the 1991 -1993 project. Based on the visual inspections conducted during electrofishing surveys and the genetic testing, no rainbow trout alleles are present in the current population. There is no clear evidence of other Lahontan cutthroat trout plants in the basin (Ryan and Nicola 1976).

1-10

Please see Section 5.1.1.3 (Existing genetic structure) in the EIS/EIR, Master Response C, and response to Comment 1-9 regarding genetics of Paiute cutthroat trout.

1-11

Please see changes to Table 5.10-1, Appendix B (Alternatives formulation report), and Master Response D related to Alternative comparisons.

The EIS/EIR will not select an alternative; but will identify the preferred alternative as required by NEPA. The NEPA Record of Decision (ROD) and CEQA Findings of Fact will select which alternative or combination of alternatives will be implemented. The ROD will identify all alternatives considered by the USFWS in reaching a decision, specifying the alternative or alternatives which were considered to be environmentally preferable. The ROD may include a discussion on preferences among alternatives based on relevant factors including economic and technical considerations and the USFWS statutory mission. The decision documents will address why that alternative was selected, and state how the Agency

weighed the facts in choosing the alternative. The CEQA Statement of Overriding Considerations will outline why this alternative was selected given any identified significant and unavoidable impacts.

1-12

Please see changes to Table 5.10-1, Appendix B (Alternatives formulation report), and Master Response D related to Alternative comparisons.

1-13

Please see Sections 2.2 (Objective/purpose and need for action) and 5.1.1.3 (Threat of limited range/occupied habitat) in the EIS/EIR and Master Response C regarding threats to Paiute cutthroat trout. In terms of the proposed Action, the period over which Paiute cutthroat trout have inhabited Silver King Creek is irrelevant. The existing environment, which is the basis for the impact assessment in the EIS/EIR, includes: the potential for inadvertent transfer of fish and the risk of genetic bottlenecking and vulnerability to stochastic events. Prior to the 1860's Paiute cutthroat trout were the only trout species upstream of the Silver King Canyon and thus the threats from hybridization did not exist. The threats of genetic bottlenecking existed, but on a more limited scale due to the interconnectivity and size of the population within the Silver King watershed.

Please see Section 5.1.1.3 (Paiute cutthroat trout) in the EIS/EIR and Master Response C regarding the historical range of Paiute cutthroat trout. The distribution of Paiute cutthroat trout in it historic range was greater than the current distribution upstream of Llewellyn Falls and the tributaries of Coyote and Corral Valley Creeks, thus the risk from a stochastic event was lessened due to the greater amount of occupied habitat. The commenter notes the existence of five out-of-basin populations, however their existence does not assist with fulfilling the purpose and objective of restoring Paiute cutthroat trout to its historic range and reducing the threat of hybridization as described above.

Please see Section 3.2.3 (Alternative 3: combined physical removal) in the EIS/EIR, Master Response D and Comment 1-12 regarding Alternative 3. The effectiveness of Alternative 3 is uncertain and the timeframe to implement Alternative 3 is expected to be at least 10 years, but would likely be much longer and thus may not meet the projects stated purpose and need described above.

1-14

Comment noted and considered. Please see Master Responses F and G for a discussion of unintended consequences of past rotenone projects and Master Response D regarding the efficacy of non-chemical methods for eradication of hybridizing species. Appendix B (Alternatives Report) in the EIS/EIR found that both the proposed Action (Alternative 2) and Alternative 3 may be feasible methods to obtain the project objectives. Neither alternative, however, is guaranteed to work or be completely effective.

Documented experience illustrates that rotenone is an effective tool for removing and eradicating unwanted trout, and it has been used successfully in stream systems similar to Silver King in terms of flow, gradients and other environmental characteristics. Please see Master Response F and G for a summary of successful projects that used rotenone for eradicating non-native fish from stream ecosystems.

Manual removal (e.g., electrofishing) has been shown to be sometimes effective in shallow, low-gradient streams with few undercut banks and lacking habitat complexity. Manual removal has been tentatively successful in the Upper Truckee watershed, and there is a project that will try to expand that success downstream of the Alpine/El Dorado County line. As noted in a CDFG memo (Lawson 2009), the Upper Truckee River watershed is not comparable hydrologically and the reaches downstream are separated by

discrete fish barriers thus enabling short isolated sections to be treated manually. As described in the EIS/EIR, the stream environment within the Project Area is a complex high-gradient system with large boulders, riffles and eddies (see Section 5.1.1 (Environmental setting) in the EIS/EIR). Such characteristics do not match those of streams where manual removal has been shown to be an effective tool.

As the commenter points out, not all rotenone treatments have met their objective of complete removal of the unwanted species. Some historical examples have been within the Silver King watershed, such as the treatments of Upper Silver King creek in 1964 and 1976 (see Figure 5.1-1). Fisheries managers have gained considerable experience and knowledge regarding the application of rotenone during the ensuing years, and this will be applied should the approved project include the use of rotenone. The Agencies are taking a number of steps to ensure that the proposed Action, if chosen, is effective, including but not limited to: necessity of treating streams to upper most limits of fish distribution to ensure that there are no non-native fish present within the treatment area, timing of project implementation must be carried out after all juvenile fish have emerged from stream gravels as rotenone is less effective on eggs, multiple year treatments or dual treatments within a single year are necessary due to complexity of habitats within the stream basins and fish lifestages/distribution encountered during the project, continuous staffing of neutralization to ensure that there are no equipment malfunctions and that water quality monitoring is conducted, and the use of field colorimeters to accurately determine real-time potassium permanganate concentrations during application process (Parmenter and Fujimura 1995). Also use of improved filtrate methodology and continuous monitoring to provide near real time concentrations of residual potassium permanganate at the 30-minute station (downstream boundary of project area) (Fujimura 2006).

1-15

See Master Responses D, F and G and response to Comment 1-14.

1-16

See Master Responses D, F and G and response to Comment 1-14.

1-17

See Master Response D. This response addresses Alternative 3 and electrofishing.

1-18

Please see the responses to Comments 1-5, 1-6 and 1-7 above and Comment 4-2 below regarding public education and warden and ranger patrols. Regarding mechanical removal methods, please refer to Master Response D.

Manual removal (e.g., electrofishing) has been shown to be sometimes effective in shallow, low flow, low-gradient streams with few undercut banks and lacking habitat complexity. Manual removal has been tentatively successful in the Upper Truckee watershed, and there is a project that will try to expand that success downstream of the Alpine/El Dorado County line. As noted in a CDFG memo (Lawson 2009), the Upper Truckee River watershed is not comparable hydrologically and the reaches downstream are separated by discrete fish barriers thus enabling short isolated sections to be treated manually. As described in the EIS/EIR, the stream environment within the Project Area is a complex high-gradient system with large boulders, riffles and eddies (see Section 5.1.1 in the EIS/EIR). Such characteristics do not match those of streams where manual removal has been shown to be an effective tool.

Both Alternatives 2 (Section 3.2.2) and 3 (Section 3.2.3) include restricted fishing, signage, and education. Alternative 3 states that post-fish-removal activities would be the same as those described for the proposed Action. Both Alternatives 2 and 3 include patrols by CDFG wardens as staffing and budgets allow, to monitor bag limits and other restrictions in the Silver King watershed. However, neither alternative includes project-specific patrol of the area by rangers or wardens.

1-19

Neither the proposed Action nor Alternative 3 include use of motorized forms of access within the wilderness area. The only motorized equipment that would be used would be the short term use of generator powered augers used to dispense potassium permanganate at the head of the zone of neutralization. Use of this equipment will require authorization from the U.S. Forest Service. The Agencies in the past have used non-motorized methods of applying potassium permanganate via concentrated slurry. This method is less precise and can lead to an incorrect concentration of potassium permanganate being applied to neutralize rotenone in the downstream reach of the project. Alternative 3 will require the extended use of generators to recharge electrofishing batteries necessary to implement this alternative. Please see Master Responses F and G for past issues regarding other projects issues with neutralization of rotenone.

1-20

See Section 5.1.1.3 (Threat of fragmented populations) in the EIS/EIR, Master Response C, and responses to Comments 2-48, 2-51, 4-1, 7-5, and 8-20 regarding habitat fragmentation.

The proposed Action is intended as a step toward complete recovery of Pauite cutthroat trout and removal of the federally threatened sub-species status. Other management actions may be warranted as part of the Recovery Plan.

1-21

The environmentally preferred alternative will be identified and described in the NEPA Record of Decision. The CEQA Guidelines (Section 15126.6(a) and (e)(2)) require that the EIR identify the "environmentally superior alternative." If the No action alternative is identified as environmentally superior, then the EIR must identify the environmentally superior alternative among the other alternatives.

The EIS/EIR identified Alternative 2 is the environmentally superior alternative. If evaluated strictly in terms of impact significance, Alternative 3 would be designated as the environmentally superior alternative. However, for the following reasons, the EIS/EIR identifies Alternative 2:

- The project is an environmental restoration project. Under Alternative 2, the environmental benefits would be realized much sooner than under Alternative 3, the duration (at least 10 years) and success of which is uncertain.
- The adverse impacts of Alternative 2, although some are significant and unavoidable, are short term.
- The social impacts of Alternative 3, although not identified as significant in the EIR, would be prolonged, and would affect recreational, economic and wilderness values.
- The physical impacts of repeated electrofishing over successive summers for multiple years (at least 10 years) would affect stream and bank habitat quality.

See Section 5.1.4.3 (Alternative 3: combined physical removal). The following provides additional analysis of the physical impacts of Alternative 3 on stream and bank habitat quality including the significance of the impacts. Multiple passes by large crews operating for many days within the stream

channel may have adverse short-term impacts to benthic macroinvertebrate community but less than a chemical treatment. Recolonization from upstream areas would occur similar to Alternative 2. Alternative 3 could also result in short-term impacts to stream banks and associated riparian vegetation as field crews will constantly be passing through the 116 sections installing block nets and staging areas. This effect will occur for a minimum of 72 days throughout the duration (at least 10 years) of the proposed project.

In addition, Alternative 3 may not be effective and if fish cannot be eradicated using electrofishing and other physical means, the Agencies may be compelled to pursue Alternative 2 after years of electrofishing under Alternative 3 to achieve the goals of the Recovery Plan. Please see Master Response D.

Therefore, CDFG identified Alternative 2 as the CEQA environmentally superior alternative. Under CEQA, the goal of identifying the environmentally superior alternative is to assist decision makers in considering project approval. CEQA does not, however, require an Agency to select the environmentally superior alternative (CEQA Guidelines Sections 15042-15043).

1-22

Appendix E in the EIS/EIR discloses the taxonomic level of surveys completed for aquatic macroinvertebrates. Appendix D and E in the EIS/EIR contain lists of aquatic taxa, including many species identified in various surveys from 1984 to 2008. Impacts on other stream dwelling species such as amphibians and terrestrial species which may be impacted by the proposed Action are addressed in Sections 5.1 (Aquatic biological resources), 5.2 (Terrestrial biological resources), 5.10 (Comparison of the Alternatives) in the EIS/EIR and response to Comment 2-30. See Master Response B and response to Comment 1-4 regarding benthic macroinvertebrate surveys for the project area.

1-23

The Agencies conducted a good faith and diligent research effort for current and relevant scientific information for our analysis. Appendix D in the EIS/EIR (Vinson and Vinson 2007) performed an extensive review of the literature regarding rotenone impacts on stream invertebrates and acknowledged that there were “too few published studies” (less than 25 published studies since the 1930’s). The commenter seems to suggest that the Agencies should search for and find every journal article, textbook and other item published. This is not a reasonable nor realistic standard and is not required by CEQA or NEPA. The CEQA Guidelines 15125 (a) state that “The description of the environmental setting shall be no longer than is necessary to an understanding of the significant effects of the proposed project and its alternatives.” We believe the use of the current and relevant scientific information for our analysis meets Council Environmental Quality (CEQ) requirements regarding disclosure of incomplete or unavailable information (40 CFR 1502.22), methodology and scientific accuracy (40 CFR 1502.24) and use of best available science (36 CFR 219.35a). The Agencies believe these guidelines have been met.

1-24

Monitoring under the proposed Action is project specific and does not tier to the 1994 Programmatic EIR. The monitoring of impacts for specific taxa, including species, will be undertaken under this proposed Action (See Appendix E for the monitoring plan and Appendix D for various taxa identified within the Silver King Creek watershed).

See Master Response B and response to Comment 1-4 for discussion of surveys for rare and endemic species, and for discussion of information on existing surveys which provide the basis for the environmental analysis.

Vinson and Vinson 2007 (Appendix D in the EIS/EIR) also discuss the lack of baseline survey data, and the survey type that would preclude the ability to determine if species were lost during previous treatments. Section 5.1.4.2 (Impacts of proposed Action on benthic macroinvertebrates) in the EIS/EIR acknowledges the unlikely possibility that species may have been lost from prior treatments and may be lost as a result of the proposed Action. We acknowledge that there may be an irreversible loss of something that we don't know is there, although based on the available information, this is an unlikely scenario. The analysis in Section 5.1.4.2 (Impacts of proposed Action on benthic macroinvertebrates) in the EIS/EIR discusses the mitigating factors that reduce impacts on macroinvertebrate taxa and render unlikely that species would be eliminated or made extinct. This section in the EIS/EIR describes how taxa and species found within the project area are also likely to be found elsewhere in the watershed or in other western watersheds, making the possibility of extinction remote. Appendix D in the EIS/EIR discusses the presence of taxa known to be sensitive to rotenone that were collected at treated sites, demonstrating that such taxa were not eliminated.

Vinson and Vinson (2007) (Appendix D) state, based on results from limited studies, rarer taxa may have been eradicated by previous rotenone treatments. However, while the Agencies believe the likelihood of eradication of endemic species is remote, the Agencies cannot definitively state it will not occur. For this reason, the Agencies have identified this as a potentially significant and unavoidable impact.

See Section 5.1.4.2 (Benthic macroinvertebrates) in the EIS/EIR and response to Comment 1-1 regarding consideration of other species and regarding impacts to benthic macroinvertebrates.

1-25

Sections 5.1.1.3 (Benthic macroinvertebrates), 5.1.4.2 (Benthic macroinvertebrates), 5.2.4.2 (Wildlife impacts), and 5.3.4.2 (Impact HEH-1, Terrestrial and avian wildlife) in the EIS/EIR contain discussion of food web interactions and the importance of macroinvertebrates in the food web. The effects of rotenone on benthic macroinvertebrates is acknowledged and has been shown to have adverse effects that range from several months to greater than 5 years (see Table 5.1-9 in the EIS/EIR). The Agencies acknowledge that there maybe rare or endemic taxa or species that may be lost as a result of the proposed Action (See Section 5.1.4.2, Impacts of proposed Action on benthic macroinvertebrates, Impact AR-1). The interactions between benthic macroinvertebrates and terrestrial fauna is discussed in 5.2.4.2 (Alternative 2: proposed Action, Wildlife impacts) and the impacts resulting from the preferred Alternative are acknowledged as short term. Hamilton et al. (2009) discusses the benefits of having untreated stream reaches upstream of the project area to facilitate recolonization of the benthic macroinvertebrate community. They also suggest the possible role that decaying fish carcasses may play in increasing the nutrient loads thereby facilitating primary production after a rotenone application (See Section 3.2.2.4 (Rotenone neutralization) in the EIS/EIR). This may be an important driver in processes that lead to an increase in benthic macroinvertebrate density post-treatment. In summary, there may be short-term perturbations to the food web, but the rapid recolonization of benthic macroinvertebrates from large untreated reaches upstream and the possible mechanism of increased nutrient loading that would facilitate primary productivity will not cause long-term disruption of the food web.

1-26

See Section 5.2.4.2 (Alternative 2: proposed Action, Wildlife impacts) and Appendix C in the EIS/EIR and response to Comment 2-29 regarding impacts on amphibians. The Agencies have been monitoring amphibian populations in the Silver King watershed since 2001 and have conducted protocol visual encounter surveys in the project area (Silver King Creek and tributaries downstream of Llewellyn Falls) and above the project area (Silver King Creek and tributaries upstream of Llewellyn Falls).

The Agencies have focused on the Sierra Nevada yellow-legged frog and Yosemite toad for in-depth analysis due to their consideration for listing under the Federal Endangered Species Act and their current status as Candidate Species by the USFWS. They are also listed as Sensitive Species by the U.S. Forest Service (see Section 5.2.1.2 (Terrestrial wildlife) in the EIS/EIR). Their status and the fact that their current range falls within portions of the watershed are the primary reasons that they were the subject of extensive surveys and analysis.

No Sierra Nevada yellow-legged frogs have been detected in the proposed treatment area in any of the surveys. The few Sierra Nevada yellow-legged frogs that were detected upstream of Llewellyn Falls in the 1990s and early 2000's are no longer present at any of the locations where they were observed. The reason for the extirpation from previously occupied sites (upstream of Llewellyn Falls) is not known but is most likely part of the range-wide decline of small populations that has been well documented (Rachowicz et al. 2006, Knapp 2005, Davidson and Knapp 2007, Fellers et al. 2007). Monitoring (2004, 2005, 2008, and 2009) has continued and neither Sierra Nevada yellow-legged frogs nor Yosemite toads have been detected in the project area (downstream of Llewellyn Falls) or upstream of the project area (upstream of Llewellyn Falls).

See Section 5.2.4.2 (Alternative 2: proposed Action, Wildlife impacts) in the EIS/EIR regarding the potential indirect impacts on Sierra Nevada yellow-legged frog and Yosemite toad prey species. However watershed wide surveys that have been conducted over the last 7 years have not detected either species in the project area, therefore this potential impact is remote and will not likely manifest itself. If pre-project surveys detect any life stage of either species, relocation will occur to habitats upstream of Llewellyn Falls where the prey base will not be affected by the proposed Action.

As to how long have the Agencies been translocating individuals outside the project area, only one group of western toad tadpoles was moved in 2003. This was in anticipation of the chemical treatment in 2003 that did not occur due to the lack of a completed USFS NEPA document. No further translocations have occurred to date.

The Agencies have detected Pacific chorus frogs and western toads in every survey conducted to date. These two species have rapid development of tadpoles to terrestrial sub-adult and adult lifestages and would not be in the aquatic tadpole stage at the time of implementation (late August to early September) and thus not subjected to rotenone (Weitzel and Panik 1993, McGee and Keinath 2004). Section 5.2.4.2 (Alternative 2, proposed Action) in the EIS/EIR has been modified to include other amphibians within the project area.

1-27

Section 5.1.1.3 (Aquatic biota), 5.1.4.2 (Alternative 2: Proposed Action) in the EIS/EIR has been revised to discuss other native fish species found in lower Silver King Creek downstream of the Silver King Canyon. Mountain sucker have never been found in lower Silver King Creek (Deinstadt et al. 2004).

1-28

Please see Section 5.1.1.3 (Benthic macroinvertebrates) in the EIS/EIR and Master Response B which discuss the importance of spring habitats within the treatment area. Please see Sections 3.2.2 (Alternative 2: proposed Action), 5.1.4.2 (Alternative 2: proposed Action), and 5.3.4.2 (Alternative 2: proposed Action) in the EIS/EIR which discuss treatment of seeps and springs. The proposed Action does not involve treating fishless tributaries or springs (Section 5.1.4.2, Impacts of proposed Action on benthic macroinvertebrates). Seeps will only be treated if the possibility exists that they provide a refugia source of freshwater from treated water (See Section 3.2.2.3, Fish removal).

1-29
See response to Comment 1-25.

1-30
Neither CEQA nor NEPA require the Agencies to include "a complete compilation of all past errors, mistakes, and accidents" in rotenone treatment projects. However, extensive information on the scope, successes, and problems associated with past treatment projects is included in Master Responses F and G.

1-31
See Section 5.1.1.3 (Paiute cutthroat trout) in the EIS/EIR and Master Response C regarding the historical range of Paiute cutthroat trout.

1-32
All existing populations of Paiute cutthroat trout are isolated in headwater drainages which make them susceptible to stochastic events such as fire, flood, and drought (Dunham et al. 2003a; Rieman et al. 2003). These events have increased in recent history and are predicted to increase as our climate continues to change (Hayhoe et al. 2004, Kim 2005, Westerling et al. 2006, Bates et al. 2008, Westerling and Bryant 2008, Miller et al. 2009). Paiute cutthroat trout will always be susceptible to stochastic events because of its limited range. Paiute cutthroat trout, once it becomes re-established throughout its native range in Silver King Creek, will be less susceptible than the out-of-basin populations due to the size of the drainage, the size of the population, and the quality and distribution of habitat in which it evolved over thousands of years. Further, because this sub-species was originally adapted to this stretch of stream, it is expected to provide the best quality habitat and the highest probability of long-term persistence. Description of stochastic events is presented in Section 5.1.1.3 (Existing threats) in the EIS/EIR.

Both Four Mile Canyon Creek and Corral Valley Creek were sampled in the fall of 1997 after the 1997 winter flood occurred (Deinstadt et al. 2004). Deinstadt et al. (2004) reported that Four Mile Canyon Creek showed no evidence of impacts from the flood because it may have been high enough in elevation to avoid the rain-on-snow event. In contrast, Deinstadt et al. (2004) reported impacts from the flood to Paiute cutthroat trout populations in Corral Valley Creek with densities being 50 percent lower than estimates conducted in 1990. Additionally, Paiute cutthroat trout populations in Stairway and Sharktooth Creeks declined after the 1997 flood and the habitat in both creeks became less complex and diverse (P. Strand, Fisheries Program Manager, Sierra and Sequoia National Forests, pers. comm., with C. Mellison (USFWS), 2005). For these reasons, it is incorrect to state there were no noticeable impacts to Paiute cutthroat trout from the 1997 flood.

1-33
Please see Section 5.1.1.3 (Existing genetic structure) in the EIS/EIR and response to Comment 1-9 regarding genetics of Paiute cutthroat trout.

1-34
The EIS/EIR addresses the impacts of the proposed Action. The proposed Action is to implement one critical component of the Revised Recovery Plan for the Paiute Cutthroat Trout (USFWS 2004). The peer reviewed Revised Recovery Plan for the Paiute Cutthroat Trout analyzed the need for the project, which is to restore Paiute cutthroat trout to historic range. Currently, small isolated populations of Paiute cutthroat trout exist within and outside the Silver King basin that cooperating Agencies and scientists believe are threatened with extinction. These populations are isolated by waterfalls that do not allow for

connectivity of populations. Current estimates for population abundance of Paiute cutthroat trout fall beneath those needed for long term survival of the sub-species (Hilderbrand and Kershner 2000).

Department of Fish and Game fisheries biologists have estimated that an average of 1,020 Paiute cutthroat trout adult fish exist in the basin: Silver King Creek, 600 adult fish; Fly Valley Creek, 100 adult fish; Four Mile Canyon, 90 adult fish; Bull Canyon, 30 adult fish; Coyote Valley, 100 adult fish; Corral Valley, 100 adult fish. These estimates are based on professional judgment of fisheries biologists combined with test section and single pass data collected within the Silver King Creek basin over many years, in some cases decades.

Test section locations in each tributary stream have been selected to monitor trends in abundance of populations in representative reaches of the best trout habitat. The best habitat for Paiute cutthroat trout is generally found in meadow reaches. Paiute cutthroat trout abundance drops dramatically in streams as gradient increases. Erman and Erman 2009 provide their interpretation and analysis of historical fish population data. In their analysis they state that in Upper Fish Valley there are 2.7 miles of habitat. They use the test section data that states a population estimate of 353 adult fish per mile. They multiply the number of habitat in miles (2.7) by the adults per mile (353) for a total population estimate for Upper Fish Valley at 953 adult fish. This analysis was repeated for Four Mile Canyon, Bull Canyon, Fly Valley, Corral and Coyote Valley Creeks. This is a false assumption that all of the reaches are of equal quality and contain similar habitats for their entire lengths. The assumption by Erman and Erman that test section data should be expanded throughout each stream results in a gross overestimate of the population and ignores the fact that reaches with higher gradients have lower fish densities. In addition, to count up numbers of fish in each population and attempt to determine there are more fish in all populations than what is needed for recovery ignores the situation that current Paiute cutthroat trout populations are isolated from each other. The argument of population numbers in headwater tributaries obfuscates the concept that the goal of the project is to restore Paiute cutthroat trout to the historic range of the sub-species as the best action for recovery, as determined in the Revised Recovery Plan for the Paiute Cutthroat Trout (USFWS 2004).

1-35

Appendix C (Table C-13) in the EIS/EIR identifies all the formulation constituents; however, the impact analysis focuses on the most toxic and concentrated formulation constituents. This approach is appropriate because the minor (less toxic and less concentrated) constituents do not significantly contribute to non-target hazard. Table C-17 in the EIS/EIR provides the hazard quotient (HQ) values for the formulation constituents. The HQ approach estimates hazard by comparing calculated exposure values to laboratory-derived toxicity values (i.e. LC^{50} values). The final step in the HQ method is the determination of whether the calculated HQ value exceeds a pre-determined Level of Concern (LOC). The LOC values used in the EIS/EIR were originally determined by the USEPA. Tables C-11 and C-12 in the EIS/EIR provide the LOC values used in this analysis for aquatic invertebrates and terrestrial animals, respectively. With respect to the HQ values derived for the most toxic and concentrated formulation constituents, none exceed the USEPA LOC values.

1-36

See Appendix C (Ecological risk assessment), Sections C.3.2.1 (Bioconcentration, bioaccumulation, and metabolism), C.3.3 (Environmental Fate and Chemistry), and C.3.5.2 (Fate, transport, and toxicity of proposed rotenone formulation constituents and potassium permanganate neutralization solution) in the EIS/EIR and response to Comment 2-56.

Persistence of chemicals in biological tissues is commonly characterized through bioconcentration or bioaccumulation. Bioconcentration of a chemical can occur in an organism when it accumulates

chemicals in its tissues following direct exposure, at a concentration greater than that found in the exposure media (e.g. water, air). Bioaccumulation in the food chain results in higher concentrations in predators. Ney (1998) explains that bioaccumulation of organic chemicals in animals is a function of a chemical's solubility in fat. Fat-soluble (hydrophobic, non-polar) chemicals are more prone to bioaccumulate in fatty tissues and are more slowly metabolized. Chemicals that are insoluble in lipid, exhibit polarity and are readily metabolized.

This response provides more detail to Section 5.3 (Human and ecological health concerns) and Appendix C (Section C.3.2.1 (Bioconcentration, bioaccumulation, and metabolism)) in the EIS/EIR regarding bioaccumulation and biodegradation. Bioaccumulation takes into account all uptake pathways to the organism including respiration, food intake, epidermal (skin) contact with the substance, and/or other means. Bioconcentration differs from bioaccumulation because it refers to the uptake of substance into the organism from water alone. Bioaccumulation is the more general term because it includes all means of uptake into the organism.

A few comments expressed concern about the uncertainties associated with the bioaccumulation potential and environmental persistence of the rotenone formulation constituents. The EIS/EIR provides an overview of the potential persistence of the formulation constituents by summarizing the physical and chemical properties that affect the fate of the constituents if released into the environment (see Appendix C, Sections C.3, and Table C-13). Typical properties that are used to evaluate fate and transport include solubility, vapor pressure, the Henry's Law constant, the log of the octanol/water partition coefficient (Log-P), and empirically measured half-lives. Other parameters are listed in Table C-13.

None of the chemicals have been identified by the EPA as "persistent bioaccumulative toxicants" (PBTs). Further, any exposure that could occur if a chemical treatment is selected would be for an acute/sub-acute duration, and since all compounds in the formulation are readily metabolized, bioaccumulation is not expected. Bioaccumulation references the propensity for a chemical in the environment to accumulate in biological tissues at concentrations that exceed the concentrations of the chemical found in environmental media (water, sediment, air). It refers to both uptake of dissolved chemicals from water (bioconcentration across the gills) and uptake of chemical(s) from ingested food and/or sediment. It is a relevant parameter to examine in ecological and human health risk studies, particularly when the acute toxicity of an agent is low and the physiological effects are not readily observable until a chronic accumulation has occurred.

1-37

Please see Section 5.3.4.2 (Alternative 2: proposed Action) and Appendix C (C.2.6.2, Potential human receptor populations) in the EIS/EIR regarding potential effects of rotenone on human health.

Section 5.3 (Human and ecological exposure) in the EIS/EIR describes the basis of human health effects related to rotenone exposure. The discussion of Parkinson's Disease discloses to the public the available clinical information. The Agencies included the Emory study in the EIS/EIR to disclose to the public that a direct link between rotenone exposure and Parkinson's Disease has been observed under specific laboratory conditions. In this case, the effect was observed in laboratory rats whereby rotenone was directly injected into the bloodstream. The Agencies presented the Emory injection study for full disclosure purposes only. The purpose of the Emory study was to intentionally develop an animal model that induces a Parkinson's-like condition in order to study the disease at the cellular level. The study was not designed to establish thresholds of human exposure or to evaluate human health effects from environmentally relevant pathways for exposure to rotenone. The route of administration for rotenone exposure in this and related studies was via intravenous injection, an exposure method that is not associated with environmental conditions. Many otherwise benign substances (e.g., air, salt, or sugar), if injected directly into the bloodstream, could have toxic effects if administered at high doses and are far more damaging than when encountered in daily life simply because of the route of administration. Direct

injection into the bloodstream is not similar to environmental exposure scenarios because it bypasses all metabolic processes in the gastrointestinal tract and first pass through the liver that result in the rapid metabolism and elimination of the compound. Oral and inhalation exposure scenarios (as described in Section 5.3.4.2 (Alternative 2: proposed Action) and Appendix C (C.2.6.2, Potential human receptor populations)) are more relevant to the incidental human exposures that may occur in the environment during the project treatment period. However, if mitigation measures are followed, rotenone oral and inhalation exposure to the project applicators and general public is highly unlikely.

When rotenone is contacted in the environment, exposure is most likely to occur by swallowing something that contacted the pesticide (oral exposure) or breathing air containing the pesticide (inhalation exposure). As described in Section 5.3.4.2 (Alternative 2: proposed Action) in the EIS/EIR, these typical contact methods offer the body an opportunity for first-pass detoxification of the compound in the liver, a natural process that is bypassed when the compound is directly injected, as in the Emory laboratory study.

1-38

See Section 5.1.1.3 (Paiute cutthroat trout, Status and range) in the EIS/EIR for a discussion on the barriers in Silver King Canyon. Numerous trips into Silver King Canyon by CDFG, Forest Service, and USFWS personnel have documented the existence of natural fish barriers in Silver King Canyon and have concluded that the barriers along with the entire high gradient nature of this section of stream will be effective in stopping fish from migrating upstream into historic Paiute cutthroat trout habitat (for pictures see Humboldt-Toiyabe National Forest 2006). The commenter cites the jumping ability of steelhead trout as evidence that a fish can jump the barriers in Silver King Canyon. Steelhead trout are renowned in their jumping abilities; however, no steelhead trout exist in the East Fork Carson River watershed. The maximum size rainbow trout that has been collected in Silver King Creek in the vicinity of Snodgrass Creek was 260 mm total length (10 inches). The Agencies made a conservative assumption to use a maximum sized rainbow trout equaling 14 inches total length in determining what size to input into the Powers and Orsborn (1985) equations. The results calculated the jumping ability of a 14-inch rainbow trout and found that a rainbow trout of this size could jump a maximum of 3 feet vertically or six feet horizontally not in combination (Lawson and Hughes 2009). Lawson and Hughes (2009) go on to say, "Although we cannot definitively state that no rainbow trout could ever pass this series of barriers, the chance of this occurring should be considered remote, rather than an easily passable series of barriers as indicated in the comments provided on the project EIS/EIR. This is succinctly stated in George Heise's November 8, 2000, memo describing his field visit to Silver King Creek. He commented on the barriers he observed in the field by stating that:

> *Since the barriers in question on Silver King Creek are within a vertical magnitude that could conceivably pass trout under ideal conditions, and since they have multiple flow paths and I have only viewed them under low flow conditions, I have to acknowledge that there may be a remote chance that the right fish, at the right place, at the right flow, might get lucky and pick it's way upstream. But I think it would be a very remote chance."*

The effectiveness of the barriers in Silver King Canyon is further demonstrated by the absence of other native and non-native fishes from Silver King Creek above the identified barriers in Silver King Canyon. Mountain whitefish and Paiute sculpin are found in Silver King Creek below Silver King Canyon. Additionally, speckled dace (*Rhinichthys osculus*), mountain sucker, and brown trout (*Salmo trutta*) are found further downstream in the East Fork Carson River. None of these species are found above the barriers in Silver King Canyon. The only fish found above the barriers in Silver King Canyon are Paiute cutthroat trout and introduced rainbow trout. If the barriers fail at any flow levels, Paiute cutthroat trout would not have diverged from Lahontan cutthroat trout and a complete assemblage of native fishes would be present throughout the Silver King drainage.

1-39

The cumulative impact analysis presented in the EIS/EIR is not simply a list. As described in Section 6.5.2 (Approach) in the EIS/EIR, the CEQA cumulative impact assessment should be based on either the list approach or projections contained in adopted planning documents. The list approach was more appropriate for this analysis. In addition to the list of projects, the analysis contains a discussion of the geographic scope, a summary of the types of environmental impacts that could result from the listed projects.

Projects included in the cumulative impact analysis were identified by several methods, including telephone and email correspondence with Agency personnel from surrounding jurisdictions, internet research, and review of potential cumulative impacts analyses from environmental reports prepared for other projects in the same geographic area as the proposed Action. The evaluation considered projects within an approximate 20-mile radius, such that projects within Alpine County and the Carson-Iceberg Wilderness Area were considered.

The list includes recently completed past projects, projects currently under construction, and probable future projects that would overlap with the treatment schedule of the proposed Action and that could affect the same resources. The analysis addresses potential types of cumulative impacts that could occur in combination with those of the proposed Action.

However, the analysis explains that areas where no impact would occur, as identified in Chapter 4.0, Scope of the Analysis, are not addressed because the proposed Action would not contribute to a cumulative impact (e.g. the proposed Action would not affect scenic vistas, therefore this topic is not analyzed for cumulative impacts).

The cumulative impact analysis then explains that the Agencies were initially inclusive in identifying potential cumulative projects. For example, it identifies projects outside the watershed and projects that do not involve chemical application. However, as explained in the EIS/EIR, because the proposed Action results in only in-stream impacts, most of the projects listed in Table 6-1, because of their type and distance from the proposed Action, would not result in impacts that could occur in combination with the proposed Action. For this reason, the EIS/EIR explains that no impacts other than in-stream impacts are assessed further.

Section 6.5 (Cumulative effects) in the EIS/EIR methodically explains that the list was very inclusive in identifying potential cumulative projects. For example, private development and USFS fuel reduction projects would result in local land disturbance and storm water runoff issues outside the basin that would not occur in combination with the proposed Action. In contrast, although they occurred in the past, the prior treatments of Silver King Creek and its tributaries listed on Table 6-1 would result in the same types of impacts in the basin and are the focus of the cumulative impact analysis, including the impacts of the chemical treatment, which would include benefits for Paiute cutthroat trout and the potential for improved recreational and economic opportunities. The analysis did not identify cumulatively considerable impacts on benthic invertebrate species composition because project impacts were less than significant and did not combine with impacts from past projects to result in significant cumulative effects. In contrast, although not quantifiable, the analysis identified potentially cumulatively considerable impacts on rare and endemic species, if present. The project-specific impact is significant and unavoidable and no mitigation is feasible for either the project-specific impact or the cumulative impact.

1-40

See Master Response I regarding climate change.

1-41
See response to Comment 2-56.

1-42
Please see Section 5.1.4.2 (Impacts of proposed Action on benthic macroinvertebrates) and Master Response B. There are relatively few rotenone projects in the Sierra Nevada. The cumulative impact of these projects would be too small to make a meaningful analysis and would be qualitative and speculative. Projects are taking place in every western state. A broadly-stated, Sierra Nevada cumulative impact could be the potential loss of species; however, this impact would be difficult to quantify, particularly because few areas have completed a detailed species inventory (SNEP 1996).

Section 5.1.1.3 (Benthic macroinvertebrates in Silver King Creek watershed) and Appendix D (Appendices 2-10 and 12) in the EIS/EIR describe existing information on baseline benthic invertebrate populations as well as the fact that no macroinvertebrate population data are available from the period before the first rotenone treatment. Therefore, it is not possible to describe whether species were lost prior to this project. The effects of past treatments are part of the baseline condition for the impact assessment, not an impact of the proposed Action. As described in Section 5.1.4.2 (Impacts of proposed Action on benthic macroinvertebrates) and Master Response B in the EIS/EIR, species loss cannot be ruled out but is unlikely for a number of reasons including headwater areas and springs that will not be treated which will allow macroinvertebrates to recolonize from these areas.

Master Responses F and G provide a list of past CDFG projects where problems occurred. However, these past projects are historical information that contributes to the understanding of existing conditions and are not part of the proposed Action

1-43
Please see Draft EIS/EIR Sections 5.1.1.3 (Aquatic Biota) and 5.2.1.2 (Terrestrial Wildlife)

The only stocking that will occur in the future is the reintroduction of putative pure Paiute cutthroat trout into habitats downstream of Llewellyn Falls that have been chemically treated. We agree that historical stocking downstream of Llewellyn Falls has contributed to the hybridized non-native fishery that is present in Silver King Creek in the historical range of Paiute cutthroat trout; however there has been no further stocking of non-native fish in the streams since 1991. Additionally, as the restoration/recovery program for Paiute cutthroat trout was refined and developed, the societal values that guided the stocking downstream of Llewellyn Falls have changed to those that seek the restoration and recovery of Paiute cutthroat trout and eventual delisting of the sub-species (USFWS 2004).

Although stocking fishless or historically fishless streams and rivers could potentially have negative impacts on macroinvertebrates, stocking of this kind is not occurring in the Silver King Creek watershed or surrounding area. If a fishless stream or river were stocked, there would be the potential to alter the macroinvertebrate community due to foraging. If sensitive amphibians were present, the stocking of non-native fish into a fishless water would likely impact those amphibians. However there is no stocking of non-native fish into fishless waters in the Silver King Creek Watershed or in the surrounding watersheds around Silver King Creek. There is stocking occurring in surrounding watersheds but those waters have fish present or had native Lahontan cutthroat trout prior to their local extirpation in the early 1900s. Thus, the impacts of stocking non-native fish into nearby watersheds would not change the macroinvertebrate communities and thus would not be likely to adversely affect rare or endemic species in such a manner that would create impacts that would be cumulative with those resulting from the proposed Action.

While stocking fishless lakes could have negative impacts on amphibians, zooplankton, and macroinvertebrates, CDFG no longer stocks such lakes, nor does the current project involve any such stocking. The CDFG has historically stocked fish into fishless lakes. This practice no longer occurs and would violate current CDFG policy. There is ample evidence that stocking non-native trout into fishless lakes has had a negative impact on sensitive amphibians and has altered the zooplankton and macroinvertebrate communities in these ecosystems (Knapp and Matthews 2000, Pope et al. 2009). The Agencies will not be stocking Whitecliff or Tamarack Lakes, thus the limnetic ecosytems in these water bodies will remain unchanged from the existing baseline condition. Poison Lake has not been stocked since 2004. Fish population data indicates a strong likelihood that there is a self-sustaining brook trout fishery present in the lake. No sensitive amphibians have been detected at Poison Lake.

This project does not involve any stocking of fish in any lakes, any stocking of non-native fish, or any stocking of historically fishless streams or rivers. For these reasons, project-related impacts will not be cumulative with any impacts from prior stocking of fishless lakes, rivers, or streams or with prior stocking of non-native fish generally.

The CDFG and USFWS have released the Final Hatchery and Stocking Program Environmental Impact Report/Environmental Impact Statement on January 11, 2010, and that document discusses stocking practices and impacts in other watersheds beyond the Silver King Creek watershed.

1-44

Please see Master Response C. The purpose and need for the proposed Action is to restore Paiute cutthroat trout to its historic range as stated in the Revised Recovery Plan (USFWS 2004), and thereby satisfy one critical Recovery Plan component for delisting the species. The project would make Paiute cutthroat trout the only trout species in Silver King Creek above Silver King Canyon. By expanding the populations and range of the species, the proposed Action would also increase the probability of long-term viability and reduce threats from genetic bottlenecking and stochastic events.

The Agencies acknowledge that there is the possibility of a limited fishery opening in the future after Paiute cutthroat trout are successfully reintroduced into their historical habitat. See Section 5.6.4.2 (Alternative 2: proposed Action) in the EIS/EIR for further discussion. Additionally there is a statement in Deinstadt et al. (2004) about a planned addition of a catch –and-release Paiute cutthroat trout fishery downstream of Llewellyn Falls that gives the impression of an agenda of opening up a recreational fishery. The statement in that report was the opinion of the authors and not an accepted policy or position of the Agencies. Such a decision regarding the opening of a recreational fishery for Paiute cutthroat trout is not a purpose of this project, the Agencies are unaware of any current proposal to open such a fishery, and the decision to open such a fishery would be made by the California Fish and Game Commission, which is not one of the Agencies seeking to implement this project. Moreover, the California Fish and Game Commission would be required to comply with CEQA before taking such action.

1-45

See Master Response B and response to Comment 1-4 discussing the need to complete a macroinvertebrate species inventory for the proposed Action. Appendix E includes the Aquatic Invertebrate Interagency Monitoring Plan which includes the monitoring objectives, sampling design, and pre-treatment sampling information. The sampling design was modified based on recommendations by Vinson and Vinson 2007 (Appendix D).

1-46
Please see Master Response B and response to Comment 1-4 regarding rare or endemic species and information available from 2006 in Appendix D.

1-47
See Master Responses A and B.

1-48
Please see Master Response G.

1-49
In preparing the EIS/EIR, the project team reviewed public comments on the USFS EA, USFS decision documents, court filings, and expert testimony from prior proposed rotenone treatment projects in the Silver King Creek Watershed. The EIS/EIR project team considered these points and incorporated appropriate information in the project description, impact assessment and mitigation measures. The administrative record for this project will reflect the full range of documents considered by the Agencies and required under CEQA and NEPA, including those related to prior proposed projects.

1-50
CDFG has applied for an NPDES permit and a hearing on this matter will occur during the spring of 2010. Within two years of the last treatment for any given rotenone project, a fisheries biologist or related specialist from CDFG must assess the restoration of applicable beneficial uses to the treated waters and certify in writing that those beneficial uses have been restored. A project will be considered to have been completed upon written acceptance by the Regional Board's Executive Officer of such certification. The beneficial uses are listed in the Lahontan Regional Water Quality Control Board Basin Plan in Hydrologic Unit 632.10 and they are as follows: Municipal, Agricultural, Groundwater recharge, Water contact and non-contact recreation, Commercial and/or Sportfishing, Cold freshwater habitat, Wildlife habitat, Rare, threatened or endangered species listed by Federal or state law, Spawning or reproduction of fish and wildlife (LRWQCB 1995).

The determination will be made based upon post-project monitoring as to whether the above stated beneficial uses have been restored. Section 5.1.4.2 (Moderating effects and factors for macroinvertebrate recovery) in the EIS/EIR, recovery of benthic macroinvertebrates is discussed in detail. Additionally, several factors have been identified that will facilitate benthic macroinvertebrate recovery. They range from hyporheic zone refugia, non-treatment of headwater reaches (including springs and seeps), relatively brief treatment times, and active ingredient rotenone dosage targeted for trout and not benthic macroinvertebrates (Finlayson et al. 2010). The Agencies propose to use CFT Legumine™ or Noxfish®, non-synergized formulations (do not contain piperonyl butoxide) to reduce toxicity to macroinvertebrates (Finlayson et al. 2010). Thus, this project is expected to be in compliance with the conditions set forth in Section 4.9 of the Lahontan Water Board Basin Plan concerning certification of restoration of beneficial uses. Since it does not violate the Basin Plan, which is certified by the USEPA to be consistent with the Clean Water Act, this project is likewise not in violation of the Clean Water Act.

1-51
The Clean Water Act, implemented by the USEPA, gives states the right to develop and execute their own water quality program. A state program must meet, at a minimum, USEPA water quality objectives, but may be more protective. In California, the water quality program has been approved by USEPA and is

implemented by the Water Board in the form of Basin Plan documents, which are subject to USEPA approval for consistency with the Clean Water Act. The Lahontan Basin Plan Section 4.9 contains provisions that allow for "Rotenone Use in Fisheries Management" if proposed projects using rotenone meet specific conditions given in the Basin Plan. This section acknowledges that there may be "temporary loss of beneficial uses" and "application of rotenone to surface waters by the CDFG will result in a temporary lowering of water quality."

The Lahontan Water Board has considered antidegradation pursuant to 40 CFR section 131.12 and State Water Board Resolution No. 68-16. Discharges must be consistent with both the State and Federal antidegradation policies. The conditions of this permit require compliance with water quality objectives for rotenone projects contained in the Basin Plan. The application of rotenone and potassium permanganate will temporarily degrade waters of exceptional quality; however, this degradation will be temporary. The Basin Plan states:

The temporary deterioration of water quality due to the use of rotenone by the CDFG is justifiable in certain situations. The Regional Board recognizes that the State and Federal Endangered Species Acts require the restoration and preservation of threatened and endangered species ... These resources are of important economic and social value to the people of the State, and the transitory degradation of water quality and short-term impairment of beneficial uses that would result from rotenone application is therefore justified provided suitable measures are taken to protect water quality within and downstream of the project area. Therefore, this permit is consistent with the State nondegradation and Federal antidegradation policies.

1-52

The CDFG has applied for a NPDES permit (Tentative NPDES Permit No. CA0103209, May 5, 2009), and that proceeding is ongoing at this time. The Agencies anticipate that the LRWQCB will be holding a hearing on this permit application in the spring of 2010 and encourage participation in that process. The LRWQCB will be issuing notices of that hearing process pursuant to its notification policies and State law.

1-53

Section 5.7.4.2 (Untrammeled) acknowledges the proposed Action is an intentional manipulation of ecological systems inside wilderness including the reduction of macroinvertebrate populations and displacement of wildlife during implementation. Sections 5.1.4.2 (Aquatic Biological Resources, Alternative 2: proposed Action) and 5.2.4.2 (Terrestrial Biological Resources, Alternative 2: proposed Action) in the EIS/EIR discuss impacts to macroinvertebrates and wildlife species; these sections also discuss the short-term impacts to these species within the wilderness area. Please see response to Comment 1-24 regarding the loss of species from the treatment area. Please see response to Comment 1-25 regarding the food web interactions.

1-54

Section 5.7 (Wilderness values and management) in the EIS/EIR discusses the impacts on primitive recreation opportunities. The Agencies agree the project will have a temporary impact on people's opportunity for primitive recreation during one week of treatment activities each year, for up to 3 years. The description of how the public will be informed of areas to get potable water within the wilderness area is described in Chapter 3.2.2.2 (Pre-fish removal). In addition the public will be informed of areas within the wilderness to avoid during the treatment.

1-55

The Carson-Iceberg Wilderness was established in 1984. The Agencies agree that prior to its establishment the area was subject to large human caused perturbations. These included historic logging of the watershed, livestock grazing which began in the late 1880's, the introduction of non-native trout into the streams with native species, and numerous rotenone treatments within the watershed. Section 5.1.1 (Environmental setting) discusses the suitability of Silver King Creek for use as an unimpaired reference site.

Section 5.7.4.2, Alternative 2: proposed Action) in the EIS/EIR discusses how the project will have a temporary impact to wilderness characters for one week of treatment activities each year for up to 3 years. During this time work crews, equipment, and horses will be visible to wilderness users and will impact their wilderness experience. Sections 5.1.4.2 (Alternative 2: proposed Action), 5.2.4.2 (Alternative 2: proposed Action), and 5.7.4.2 (Alternative 2: proposed Action) discuss how ecological processes will also be impacted during the implementation. It is expected that after the implementation of the proposed Action, any further restoration activities related to Pauite cutthroat trout will have little impact to wilderness values and character. Also see Section 5.7.2 (Regulatory setting) regarding management activities that are permissible in wilderness.

1-56

Please see Section 2.2 (Objective/purpose and need for action) in the EIS/EIR, Master Response C, and, response to Comments 1-4, 1-7, and 1-44 regarding the purpose and need for the project, and Section 5.1.1.3 (Existing threats) which further describes the need for the project. Unfortunately none of the alternatives guarantee that Paiute cutthroat trout recovery will be successful. See Section 5.1.4 (Environmental impact assessment) in the EIS/EIR and Master Response D which discusses the likelihood of successful removal of non-native trout under each alternative.

Please see Section 5.7.2 (Regulatory setting) regarding management activities that are permissible in wilderness and Sections 5.1 (Aquatic biological resources) and 5.2 (Terrestrial biological resources) for impacts on other species within the project area.

1-57

Please see Section 5.7.2 (Regulatory setting) regarding management activities that are permissible in wilderness and Section 5.7.4.2 (Alternative 2: proposed Action) regarding impacts on wilderness values and character from the proposed Action.

1-58

Silver King Creek is designated a Critical Aquatic Refuge (CAR) under the Sierra Nevada Forest Plan Amendment. CARs primarily protect occupied habitat of threatened, endangered or sensitive plant species (USFS 2004). The Silver King Creek CAR has been identified and managed for the recovery of Paiute cutthroat trout (USFS 2004).

Standards and guidelines under the SNFPA require surveys for California spotted owl and northern goshawk when vegetation treatments are proposed that are likely to reduce habitat quality for those species. Surveys for great gray owl and willow flycatcher are required when currently occupied or historically occupied habitat has been documented in the project area. Under alternatives 2 and 3, ground disturbing activities are limited to the burial with shovels of dead fish captured at block nets. No other ground disturbing activities are proposed and the project does not involve any vegetation treatments. However, protocol-level surveys have been conducted in the project area for several of the above species as part of an annual Forest-species inventory effort. Surveys for goshawk, great gray owl and willow

flycatcher have been conducted since 2007 with no detections. Suitable habitat for spotted owl is not present within the project area. Monitoring macroinvertebrates is a component of the proposed Action (see Appendix E). Pauite cutthroat trout have been monitored annually by the California Department of Fish and Game. Paiute cutthroat trout and macroinvertebrates are considered management indicator species. Pre-treatment surveys for Sierra Nevada yellow-legged frog and Yosemite toad are part of the proposed Action.

1-59

Contrary to the commentor's assertion, all state and Federal Agencies and departments are exempt from the prohibitions contained in California's Proposition 65, Health and Safety Code section 25249.5, et seq. Proposition 65 provides that "[n]o person in the course of doing business shall knowingly discharge or release a chemical known to the state to cause cancer or reproductive toxicity into water or onto or into land where such chemical passes or probably will pass into any source of drinking water." (Health and Safety Code, § 25249.5.) Proposition 65 defines "person" for purposes of its prohibitions as "an individual, trust, firm, joint stock company, corporation, company, partnership, limited liability company, and association." (Health and Safety Code, § 25249.11, subd. (a).) In addition, Proposition 65 specifically states that "person in the course of doing business" does not include "the state or any department or Agency thereof or the Federal government or any department or Agency thereof." (Health and Safety Code, § 25249.11, subd. (b).) Thus, because neither the state government nor the Federal government nor their respective Agencies and departments are "persons" or "persons in the course of doing business" within the meaning of Proposition 65, the prohibition in Section 25249.5 does not apply to CDFG, USFWS, or USFS.

1-60

The EIS/EIR has not been deemed deficient. Based upon the LRWQCB NPDES permit (Tentative NPDES Permit No. CA0103209, May 5, 2009) this project has been deemed categorically exempt from the California Toxics Rule. Therefore, effluent and receiving water monitoring priority pollutants, as described in the State Implementation Policy, is not required (Tentative NPDES Permit No. CA0103209, May 5, 2009).

1-61

There is demonstrated need for the proposed Action. Please see Section 2.2 (Objective/purpose and need for action) and Section 5.1.1.3 (Existing threats) which presents scientific evidence regarding existing threats to Paiute cutthroat trout.

The waterfalls in Silver King Canyon provide a barrier to fish passage and protection of restored populations below Llewellyn Falls (see response to Comment 1-38). See Section 5.1.1.3 (Existing genetic structure) and response to Comment 1-9 regarding genetics.

See Master Response C and response to comment 1-8 regarding Paiute cutthroat trout historic habitat, Master Response D regarding Alternative 3 electrofishing, and Master Response A regarding general opposition to the project.

COMMENT LETTER #2

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Re: Comments/ Draft Environmental Impact Statement/ Environmental Impact Report (EIS/EIR) for the Paiute Cutthroat Trout Restoration Project, Carson-Iceberg Wilderness, Humboldt-Toiyabe National Forest, Alpine County, CA. Rotenone poisoning in the Silver King Creek watershed.

We are filing these comments on this EIS/EIR as private citizens, in the public interest.

The preferred alternative in this Draft EIS/EIR is the same project that has been proposed by the Agencies ((California Department of Fish and Game (CDFG), U.S. Fish and Wildlife Service (FWS), and U.S. Forest Service (USFS)) since 2002. It is a proposal to poison streams, springs, and a lake in a California Wilderness Area for the purpose of removing non-native fish. The Agencies propose to poison one or more times a year for three years with several rotenone formulations.

We have filed comments on this project at every opportunity for public comment since 2002 and in the court proceedings. We include by reference our comments previously filed (by one or both of us) with the CDFG, FWS, USFS, Lahontan 2-1

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Regional Water Quality Control Board (Lahontan RWQCB), the State Water Resources Control Board (State WRCB), and the court. We have subsequently also filed comments with the EPA on the use of and impacts of rotenone formulations and antimycin in streams and lakes (Erman and Erman 2005, 2006, 2007). We will not attempt to repeat here all the evidence we have already filed on this issue but will assume it is in Agencies' files and is part of the official record. If the Agencies need copies of any of the above documents, we will provide them upon request. 2-1 continued

The fundamental questions regarding this project are as follows:

a). Are the probable losses of native, non-target species; of losses and changes to the terrestrial and aquatic food web; and changes in community composition and species assemblages worth the potential benefit of a larger population of this cutthroat trout subspecies? 2-2

b) Is there a true barrier to upstream fish migration in the Silver King Creek canyon, and if not, what will further poisoning downstream in this watershed accomplish? 2-3

1-46 & 1-47

c) What is the real genetic status of this trout, what was its true native habitat, and can this subspecies be identified well enough to manage it and move it around? 2-4

Question "a" is fundamental to any intentional poisoning in a Wilderness Area, National Park or any other area of special ecological signficance. Questions b and c are critical to the analysis of long-term success of the Agencies' desire to expand this population of trout and whether or not there is a good reason for the project.

We state at the outset that we are in favor of either Alternative 1, the No Action Alternative or a modified Alternative 3, Combined Physical Removal of fish. We do not support Alternative 2, the Proposed Action using rotenone poisons. We support efforts by the Agencies to remove the nonnative fish, that the CDFG has stocked for decades, from as many habitats as possible. We think removal can be done in ways that do not harm non-target, native species. Alternative 2 is not such a method. Further, our analysis of the whole project and its history suggest that the objective of this particular project—to expand this population of cutthroat trout subspecies downstream—may not be possible because of physical conditions in the habitat and the Agencies' continued actions in the watershed. 2-5

The EIS/EIR produced some new information on the genetic status of the trout subspecies. It also contains contradictions, errors, and misrepresentations of past events and known science. Some relevant information has been omitted from the EIS/EIR.

We have reviewed the EIS/EIR and many of the supporting documents.

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Omissions in Executive Summary under 1.4 Public Involvement Summary

Before discussing the merits of the project, we must make some relevant corrections/additions to the past environmental review process that have been omitted in the Executive Summary.

The CDFG issued a negative declaration on the project in 2002. Comments filed with CDFG by one of us were ignored. We asked for preparation of a joint EIS/EIR when the project was first proposed in 2002.

The current project was halted by legal action twice since 2002. First, it was withdrawn by the USFS in 2003 after legal documents were filed in US District Court to force the USFS to complete an environmental assessment (EA) on the proposed project (Case No.: Civ-S-03-1756 GEB (PAN)). At that time the Lahontan RWQCB had not issued an NPDES permit or held a hearing on the project. However, the Executive Officer of the Lahontan RWQCB had given his approval for the project.

The USFS issued a Draft EA in February, 2004. A Decision Notice and Finding of No Significant Impact (FONSI) was filed on IV-30-2004. Appeals were filed in June 2004. The USFS denied Appeals in August, 2004.

The Lahontan RWQCB held a hearing on a draft NPDES for the project in September, 2004, and declined to issue the NPDES permit. Upon appeal from the CDFG, FWS, and Trout Unlimited, the State WRCB over-ruled the Lahontan RWQCB in July, 2005, and issued an NPDES permit for the poisoning project. In August, 2005, the project was stopped by a preliminary injunction in U.S. District Court, eastern district of California (No. Civ. S-05-1633 FCD KJM) for failure of the USFS to prepare an EIS to address the concerns raised by the public and independent scientists.

2-6

We commented in detail on the FWS Draft Revised Recovery Plan for the Paiute cutthroat trout. Our comments were ignored in the final plan that was issued August 10, 2004.

2-7

Impacts of Rotenone Formulations on Non-Target Species

Aquatic Invertebrates:

We told CDFG (and the Lahontan RWQCB) as early as 1994 (Erman 1994) that they should conduct species-level inventories of aquatic invertebrates prior to poisoning lakes and streams. We reiterated the need for species inventories to the Agencies in 2002. We presented information during court proceedings on how this could be done reasonably. In the present document the Agencies claim that such species inventories are “infeasible” to conduct and anyway they know that no rare or endemic species have been found (“No benthic invertebrate species strictly endemic to the Silver King Creek Watershed have been identified.” (5.1-26 2nd para. under Rare and

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Endemic species). So, in other words their logic is, "if we don't look for them, we won't find them and so, therefore, they don't exist."

But in another part of the document we find this sentence:
"In conclusion because the treatment could result in loss of rare or endemic species, this would be a significant and unavoidable impact" (p. 5.1-46). This conclusion seems strange in a project that is being proposed to "save" a "species" of fish. (In a later section we will discuss the use of "species" as it applies to the Paiute cutthroat trout.)

2-8 continued

We contrast the statements in this document with earlier wording by CDFG in the Final Programmatic EIR (subsequent) for Rotenone Use for Fisheries Management, July 1994.

"CDFG personnel are currently involved in a multi-year study of the effects of rotenone on macroinvertebrates from the Silver King Creek drainage (Alpine County). This study involves the identification of invertebrates at the species level prior to, during and for three years after scheduled treatments." (p. 103, Final Programmatic EIR (subsequent) on Rotenone Use. (July 1994). (Our emphasis added).

We later analyzed the data from the studies referred to above (Trumbo et al., 2000a and Trumbo et al., 2000b). We found that only larval specimens had been collected and that no species level studies had been done. The agencies have now had 19 years to do the species level studies they claimed they had been doing in the 1994 CDFG Programmatic EIR. That is more than enough time to do several species level studies in several watersheds.

Further, contrary to statements made by CDFG in correspondence with the Lahontan RWQCB, long-term significant impacts had occurred in aquatic invertebrate composition following poisoning of upper parts of the Silver King stream system from 1991 to 1993. We presented results of our analyses to the Lahontan RWQCB, State WRCB, USFS, FWS, the court, and more recently to the EPA. The findings are summarized in Erman and Erman 2006 (Exhibit A). We included in that summary the direct statements from the original Mangum Reports on Silver King Creek stating how many invertebrate taxa were still missing at the end of the study. We also included a literature review of other studies showing impacts to macroinvertebrates from rotenone poisoning.

2-9

The EPA (2006) corroborated our evidence of long-term impacts in their review of our material and that of others:

"Despite the fact that invertebrates are less conspicuous members of the aquatic community, they are a major component of aquatic ecosystems and food webs. Any significant effects on invertebrates would most likely influence other components of the ecosystem. Effects may not be limited to merely a change in total biomass as a result of widespread mortality but any changes associated

2-10

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with differential sensitivity could bring about significant changes in the community structure, which could alter system function (p.5)."

"The ecological risk assessment of rotenone states that aquatic macroinvertebrates exhibit roughly similar sensitivity to rotenone as do fish, that it is likely that most if not all fish and macroinvertebrates will be killed in the targeted treatment area, and that the entire aquatic food chain can be affected. The expectation is that treated streams/lakes will repopulate through immigration and/or restocking. Whether species density/richness is identical to pretreatment conditions is uncertain; however, EFED concurs with the Ermans that it is possible that more tolerant species can potentially displace those less tolerant to rotenone if rotenone is repeatedly applied (p. 6)."

"Whether chemical means of manipulation should be used over other mechanical control measures or to what extent other species should be sacrificed to aid in the recovery of endangered species are important questions which the Ermans raise; however, the answers involve policy issues and are beyond the scope of screening-level risk assessment (p. 6)."

"The chapter [on risk assessment] states that although the lowest toxicity value for freshwater invertebrates (48-hr EC50=3.7 µg/L) was chosen for risk assessment purposes, it is likely that more sensitive invertebrates could be found in the wild (p. 5)."

2-10 continued

Dr. David Herbst had also reviewed the Trumbo et al. (2000 a, b) reports and found significant impacts to non-target invertebrates (Herbst 2002, Exhibit B).

2-11

The Lahontan RWQCB stated the need for a species inventory of nontarget species prior to commencement of the project. They acknowledged and are aware that short- and long-term impacts occurred on the aquatic community composition during the last poisoning of the Silver King Creek basin (Harold Singer letter to Robert Williams, July 3, 2006, Exhibit C).

The Agencies have now had many years to conduct species level aquatic invertebrate studies. They are ambiguous in their responses to the issue: on one hand claiming that they are or have been conducting such studies; on the other hand claiming that it can not be done and is too difficult (5.1-26, 5.1 27). And further the EIS/EIR makes the argument that even if there were rare or endemic species present in the past, they may have already been lost because of previous poisonings (5.1-46). While we agree with this last possibility, it seems to us even more reason not to poison the remaining previously unpoisoned stream sections. We find it astonishing that the Agencies would use the possibility that they have already destroyed species in a Wilderness Area as an argument for further destruction.

2-12

We previously have explained in detail how and why adult invertebrate specimens must be collected to determine the species of most aquatic invertebrates. The confusion shown by the Agencies about what the term

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"species" means for the both fish and invertebrates is almost beyond belief. We assume they are purposely trying to confuse the issue to the public and other reviewers. 2-13 continued

The Mangum lab (Provo, Utah USFS lab, no longer in operation) identified larval forms, not adults. That government lab did not, in general deal with adult specimens that could be identified to the species level. It was a biomonitoring laboratory established to see patterns at more general taxonomic levels such as genus, family, order, and class. We note that the Vinson and Vinson (2007) study that was conducted on aquatic invertebrates from 2003 to 2006 was also a study of immature larval forms and more general taxonomic levels. Therefore, many of the statements made in the section of the EIS/EIR on special status macroinvertebrates and rare and endemic species must be disregarded.

For example, the statement that "Vinson and Vinson provide the species list for both historic and recent data"(EIS 5.1-27) is false. There is no species list for any of these studies. The Agencies know this and have stated it on the previous page (5.1-26). Vinson and Vinson acknowledge this in their report as follows: "The collection of adult insects would greatly facilitate our knowledge of species present in the Silver King Basin, which would assist in the routine identification of larval insects" (Vinson and Vinson 2007, p. 68).

2-14

The Vinson and Vinson study includes a review of literature on rotenone impacts to non-target species. In their original report they conclude the following:

"The results of three longer-term more intensively sampled studies in mountain streams suggest that common taxa will quickly recolonize treated areas and rarer taxa may be eradicated for a number of years or potentially forever."(Vinson and Vinson, Summary, p. x).

They also state "This suggests that rotenone impacts to invertebrates will be greatest in mountain streams characterized by cold water and high oxygen levels as these streams are characteristically dominated by small gilled invertebrates, namely Ephemeroptera, Plecoptera, and Trichoptera" (p. 13,14).

The stated purpose of the Vinson and Vinson report was "to evaluate the effects of previous rotenone treatments on aquatic invertebrate assemblages in the Silver King Basin." We, like Vinson and Vinson (p.xiii, #5), found the data unsuitable for such an evaluation. There were too many variables to make a comparison with the earlier studies (1990–1996). Samplers used were different (a modified Winget Surber sampler vs. a standard Surber sampler), mesh sizes were different (0.280mm vs. 0.5mm). The stations had been changed, the number of stations were not the same. The control stations were different. Thus, local stream conditions (microhabitats) could not be accounted for. Vinson and Vinson analyzed the data but apparently did not

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do the sampling. There was no information on who collected the samples. We assume the people doing the sampling were different in both studies and may have been different from one date to the next, thereby introducing another source of variation. Sampling protocols were different. Stratified random samples were collected in the 1991-96 study, while three samples in a single riffle were collected in the 2002-2006 study. And, finally, the samples were analyzed in different laboratories with different protocols. The Provo, Utah USFS lab subsampled in the laboratory; the Utah State BLM lab counted all individuals in the sample.

No credible scientific comparison could or should be made between these studies. The first principle of replication of a study is to use the same methods.

2-14 continued

In addition, we found some major errors in understanding what has and has not been poisoned previously in the Silver King watershed. The Agencies need to get their stories straight on this question. New information appears in the Vinson and Vinson report that claims Silver King Creek below Lewellyn Falls had been previously poisoned. This claim is contrary to information in the earlier EA and to testimony given before the Lahontan RWQCB. The information is attributed to Finlayson, personal communication (Table 3, p. 23, Vinson and Vinson 2007). Either the CDFG poisoned this stream section illegally or the Vinson and Vinson report has made an error that would invalidate the results of their analyses: What is a treatment and what is a control (i.e., non-poisoned) station?

2-15

Also, Vinson and Vinson state that one of the two stations on Bull Canyon Creek is a control station (Table 4, Vinson and Vinson 2007). This station is clearly below the junction with the mouth of Whitecliff Lake which, according to Ryan and Nicola (1976) was poisoned to remove "heavily spotted trout" in an earlier project and was also poisoned in the 1991-93 project (Flint, et al., 1998). Again, if invertebrate sampling stations were not controls but were considered such, and visa versa, no data analyses would be valid.

2-16

It seems that Vinson and Vinson made a major error in data conversion of the earlier Mangum data. The Mangum data were already given in numbers/m_2 and Vinson and Vinson multiplied those numbers by 0.279 and presented them as m_2 in their tables.

2-17

The Vinson and Vinson analyses were made at so general a taxonomic level it would not be possible to see differences between treatments and controls. Our analyses of the Trumbo et al. (2000 a, b) reports found impacts to aquatic invertebrates three years after the final poisoning in Silver King Creek for a total of, at least, six years of impacts. Invertebrate sampling was discontinued by the Agencies three years following the poisoning in Silver King Creek. In another nearby watershed, Silver Creek, major impacts were evident two years following final poisoning for a total of five years of impact.

2-18

2-19

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It is unclear why the Lahontan RWQCB only required three years of followup study in the case of Silver King Creek and two years of follow-up study in Silver Creek. In both cases impacts were still evident at the time the studies were ended (Erman and Erman 2006, Exhibit A). Both studies showed significant long-term impacts to macroinvertebrates including decreases in species diversity, decreases in number of taxa, decreases in number of stoneflies and major reductions in the stonefly family Peltoperlidae, the most abundant stonefly group prior to poisoning.

2-19 continued

In 2003, CDFG provided the Lahontan RWQCB staff the following statement: "No evidence of long-term impacts were found in either study" (Interagency Study Proposal, LRWQCB files, June 15, 2003, Evaluation of Rotenone use in Silver King Basin on Aquatic Macroinvertebrates, 2003-2007).

The Antidegradation Policy of the Clean Water Act states that "where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected"(Code of Federal Regulations, Title 40, Sec. 131.12). The Lahontan RWQCB considers water quality of Silver King Creek to be "exceptional" (p. 5.4–3, EIS/EIR).

The Water Quality Standards Handbook (4.7) outlines specific requirements for ONRWs ((40 CFR 131.12(a)(3)). "ONRWs are provided the highest level of protection under the antidegradation policy." "The regulation requires water quality to be maintained and protected in ONRWs." "ONRWs are often regarded as the highest quality waters of the United States. The regulation "permits States to allow some limited activities that result in temporary and short-term changes in the water quality of ONRW. Such activities must not permanently degrade water quality or result in water quality lower than that necessary to protect the existing uses in the ONRW. It is difficult to give an exact definition of 'temporary' and 'short-term' because of the variety of activities that might be considered. However, in rather broad terms, EPA's view of temporary is weeks and months, not years." (Our emphasis added)

2-20

The antidegradation policy further states for all water bodies, even those without ONRW status, that "species that are in the water body and which are consistent with the designated use (i.e., not aberrational) must be protected, even if not prevalent in number or importance. Nor can activity be allowed which would render the species unfit for maintaining the use. Water quality should be such that it results in no mortality and no significant growth or reproductive impairment of resident species" (Water Quality Standards Handbook, Appendix I-3, 4.9.2.2). And these protections hold for all existing aquatic life whether or not a water body supports fish.

In Chapter 5 the EIS/EIR states "Similarly, the Federal Antidegradation Policy, Title 40 C.F.R. section 131.12, dictates that water

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quality shall be preserved unless deterioration is necessary to accommodate important economic or social development." (p. 5.4-14) Federal policy, however, does not end with this paraphrase of the Antidegradation Policy. The next sentence from Title 40 CFR, section 131.12, part a (2) is "In allowing such degradation or lower water quality, the State shall assure water quality adequate to protect existing uses fully." (our emphasis added).

2-20 continued

Food Web Impacts and Terrestrial and Aquatic Species:

The importance of aquatic invertebrates to the food webs of aquatic and riparian species in the Sierra Nevada was discussed in detail in Erman 1996. Insects are food for other larger insects, fish, and amphibians in the water, and emerging adult insects are a major source of food for many terrestrial insects, spiders, birds, amphibians, reptiles, and mammals including bats (e.g., Nakano and Murakami 2001; Sanzone, et al., 2003; Ballinger and Lake 2006; and Pope, et al., 2009). The loss of large portions of emerging insects for several years during and following poisoning of miles of stream and a lake would be a major impact to riparian animals.

No list of terrestrial species for the Silver King basin has been provided in the EIS/EIR, but species of concern (e.g., yellow warbler, willow flycatcher) are mentioned as feeding on emerging aquatic insects. The impacts of food loss to these species are dismissed, apparently with no data to support the opinion of the Agencies.

Major poisoning disturbances cause changes in quality and quantity of invertebrate assemblages. These changes in turn cause changes in the emergent insect food supply and alter available invertebrate food in not only the aquatic habitat but also the terrestrial environment. To reiterate an earlier EPA (2006) statement, "…any changes associated with differential sensitivity could bring about significant changes in the community structure, which could alter system function."

2-21

A particularly noticeable omission in the EIS and the FWS Revised Recovery Plan for the Paiute CT is that no food habit studies have been conducted for the fish. The Agencies do not know what invertebrates are the preferred food of the Paiute CT. Neverthless, they are planning to poison the food supply of the very fish they are attempting to "save."

2-22

Other considerations regarding aquatic invertebrates:

The Agencies have assumed that upstream species will recolonize downstream areas after poisoning events or that species will fly upstream (EIS, 5.1-19). While this may be true for some species, it will not be true for all or even most species. Macroinvertebrate species, as most animal species, occupy specific habitats. Some species have narrow habitat requirements and are locally distributed along a stream gradient. Other species are generalists and can live in a wide diversity of habitats.

2-23

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In studies on small streams in the Sagehen Creek basin, eastern Sierra Nevada, similarity of caddisfly species composition was only 38% between the spring source and a site 270 meters downstream, and the species similarity at 470 meters downstream from the spring source had decreased to 20% (Erman 1996). 2-23 continued

Species that are generalists, commonly called "weedy" species, may return in high numbers following a poisoning event. Dispersal mechanisms vary by species and some species actively disperse only a few meters (Erman 1984, Sode and Wiberg-Larsen 1993). More restricted species may never return to the area following poisoning. Studies in Denmark at the species level have found aquatic invertebrate species missing up to 40 years following poisoning with insecticides or severe organic pollution (Sode and Wiberg-Larsen 1993). 2-24

The Agencies have an incomplete and incorrect understanding of the "EPT index" that they like to use in biomonitoring. The absolute and relative abundance of mayflies, stoneflies and caddisflies do not necessarily mean a healthy stream system as implied in the EIS. For a discussion of the limitations and cautions of broad taxa monitoring see Erman 1996. High numbers of generalists (including species of EPT) can mean disturbed systems. Here, again, species identification can be critical. 2-25

Monitoring must answer the questions that are asked by the treatment. In the case of poisoning, the questions are how will poisoning change the non-target species assemblages and will species disappear or be reduced over the long-term. General indices like an EPT index, which is at the taxonomic level of order, can not answer the question. Some species will return after even the most drastic disturbances in aquatic systems. The question is not, will something return, or will the same orders of insects return, or will some class of invertebrates return; but rather, will the same species return in the same numbers and proportions? The gross level of analyses conducted by the Agencies did not ask or answer the relevant questions for this proposed project. 2-26

Undisturbed streams in relatively pristine habitats show stability of macroinvertebrate populations from year to year making them excellent references for use in long-term biomonitoring programs (Erman 1989; Robinson et al., 2000). 2-27

Amphibians:

The mountain yellow-legged frog was present in abundance in the Silver King basin in 1993. Several thousand were seen along the shores of Whitecliff Lake. They were also found in Upper Fish Valley and near the confluence with Fly Valley Creek (USFS EA 2004). The present EIS/EIR states 2-28

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"although this species (yellow-legged frog) could occur in the proposed project area, it has not been documented in recent surveys (2001 to present); thus the potential for its occurrence would be low." But then it goes on to state that the Agencies have been relocating juvenile amphibians "to outside the proposed project area" (5.3-11, 12). When and for how long have the Agencies been relocating "juvenile amphibians?" Because it would be impossible to relocate all or even most of the tadpoles or frogs or toads in the area, this reason for claiming poisoning will not affect them is unacceptable. Poisoning their habitat will kill yellow-legged frogs, tadpoles and adults, and possibly immature Yosemite toads, and it will surely reduce and/or eliminate the food of adults.

2-28 continued

As of October 16, 2008, the EPA has made a "May Affect" and "Likely to Adversely Affect" determination for the California red-legged frog (CRLF) from the use of rotenone as a piscicide. The EPA has also determined that there is the potential for modification of CRLF designated critical habitat from the use of rotenone as a piscicide. "Indirect effects to the CRLF may also occur through the loss of both vertebrate and invertebrate aquatic forage items." (EPA webite)

The same impacts of rotenone would be expected to occur directly on the mountain yellow-legged frog and its food web.

2-29

Other Sensitive Fish in Silver King Creek:

The EIS/EIR has reported no sensitive species of fish other than Paiute CT in the proposed project area. We suggest the Agencies look more closely in the reach of Silver King Creek below Snodgrass Creek (the area within the travel time of potassium permanganate and residual rotenone). According to the California Natural Diversity Database list of Special Animals, the mountain sucker (*Catostomus platyrhynchus*) is on the list of sensitive fish species. Although not collected in the sample station immediately above Snodgrass Creek on Silver King Creek, the next station downstream is on the E. Fork Carson River just above the junction of Wolf Creek. This station does contain mountain sucker (Deinstadt et al. 2004). The EIS/EIR should also reveal that within the main project area, the poison will eliminate native Lahontan basin populations of Paiute sculpin (*Cottus beldingi*) and mountain whitefish (*Prosopium williamsoni*) known to exist in the reach above Snodgrass Creek (Deinstadt et al. 2004).

2-30

Springs, Their Protection, and Implications of Climate Change

Our research has revealed rare, endemic, and relict species of invertebrates in many springs, seeps, and headwater streams in the Sierra Nevada (e.g., Erman, 1981, 1984, 1989, 1992, 1997, 1998; Erman and Erman 1990, 1995; Erman and Nagano 1992, Wiggins and Erman 1987). The constant temperature in many seeps and springs makes them habitats for species that were more widespread in the past during different climate conditions, some

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warmer, some colder. Springs, therefore, are refuges or repositories for species that may expand or shrink their ranges as temperatures change in the future. As such they should receive special protection from resource management agencies. But we find no such consideration for these habitats in this EIS. 2-31 continued

The preferred alternative plans to poison springs and seeps (e.g., p. 3-3, 3-8, B-22, p. 5.3-1, p. 5.3-11, C-4), but the EIS (5.1-19) cites Erman (1996) for evidence of endemics in springs. And later, the EIS/EIR states "Endemic species are more likely to occur in small, isolated habitats, such as springs. However, no endemic macroinvertebrate species have been found to date in Silver King Creek Watershed (p. 5.1-21)." Again, we emphasize that no species level studies have been conducted by the Agencies in springs, seeps, or any other aquatic habitats in the Silver King basin, and so they have no scientific basis for this statement. And no studies of any kind have been done on aquatic invertebrates in springs, seeps, or Tamarack Lake so far as we are aware. 2-32

A Memorandum of Understanding was signed in 1999 by the Bureau of Land Management, the FWS, the National Park Service, the U.S. Geological Survey, the USFS, the Smithsonian Institution, and the Nature Conservancy for conservation of springsnails and their habitats, to protect sites and avoid the need to list species of springsnails pursuant to the Endangered Species Act. How has that MOU been followed in this EIS? 2-33

Inadequate Evaluation of Global Warming and Added Stress of Poisoning

Global warming is already causing changes in species composition of lakes and streams (e.g., Burgmer et al., 2007, Durance and Ormerod 2007). Experimental manipulation of first-order streams has shown varied and unpredictable responses in a suite of invertebrate taxa and species (Hogg and Williams 1996). In our studies of springs before, during, and following drought in the Sierra we found that springs with rising temperatures during droughts had lower numbers of Trichoptera species (Erman and Erman 1992, 1995). The added stress of poisoning can only exacerbate species losses and changes occurring at higher elevations because of climate change. 2-34

Absence of Impermeable Barrier to Upstream Movement of Non-native Fish

The existence of a natural, absolute barrier in the Silver King Creek Canyon is critical to the successful permanent removal of unwanted fish in Silver King Creek below Llewellyn Falls. No such barrier exists, in our opinion. The EIS/EIR cites Heise 2000 as the authority for their opinion that there is a real barrier (5.1-9). A reference to Heise is not present in the References cited at the end of this chapter. We assume this reference is to a memorandum that was produced by the Agencies during court proceedings in 2005 (Exhibit D). In this memo Mr. Heise gives his opinion on the falls in lower Silver King Canyon. He states that he only observed the area during 2-35

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low flow and that while he thinks it could be a barrier to fish migration there is a "remote chance" that it is not. He states, however that "a vertical fall of eight feet may be reduced to two or three feet when the stream rises to flood levels. Evidence of high flow at the subject barrier site suggests that the flood flows could be four to six feet or more in depth."

2-35 continued

Rainbow/steelhead trout have the greatest capacity for leaping falls of any migratory salmonid. They can leap about 3.3 m (10.8 ft.) vertically or slightly less than 3 m (9.8 ft.) while extending about 3 m (9.8 ft) horizontally (Reiser et al., 2006). Thus, passing the vertical falls present in Silver King Canyon even at low flow seems within the range of large rainbow trout. It seems likely that large Lahontan cutthroat trout could also pass these falls and may have in the past.

2-36

Without physical measurements, statements about barriers become merely subjective argument. Scientific judgment of potential barriers should be based on accurate data on

1) difference in surface elevation between the upstream water surface and the plunge pool,

2) the horizontal distance from the fall's crest to the plunge pool, and

3) the leaping characteristics of the pertinent fish species (Powers and Orsborn 1985, Reiser et al., 2006).

Further, these data should be obtained at a range of stream flows in order to establish a rating curve of changes in fall distance and other features (Reiser et al., 2006).

2-37

Attached to the copy of the Heise memorandum was a handwritten sheet, titled Barrier Costs, calculating the cost of building fish barriers in the Kern River basin (for golden trout management) and in the Silver King Creek Canyon. It seems the CDFG suspected in 2000 that they may not have a natural barrier in Silver King Canyon. The sorry pattern of poisoning streams repeatedly and then learning that there is no barrier to upstream fish migration has already been tried in the Golden Trout Wilderness. Is it a contingency plan of the Agencies to begin poisoning and then argue for constuction of a barrier (estimated in this 2000 memo at a cost of 1.5 million dollars) later, in a Wilderness Area, as they have done in the Golden Trout Wilderness where so many costly mistakes have been made in fish management? The possible barrier construction discussed at p. 3-14 in the EIS does not sound like the same barrier Heise was referring to in his memo.

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Fishing in Silver King Creek

The EIS/EIR has frequently raised the specter of someone moving hybrid or non-pure PCT above existing fish barriers, especially Llewellyn Falls. "Introduced trout pose the greatest risk to the species."and …."the threat of humans moving other trout species into these protected reaches continues. An ill intentioned angler could easily catch a rainbow trout and release it above Llewellyn Falls, involving a transport of the fish only a few hundred feet. This action would unravel decades of restoration efforts and place the populations of Paiute cutthroat trout in Upper Fish Valley and Four Mile Canyon Creeks at risk" (p. 5.1-11 EIS/EIR).

And further, "Llewellyn Falls is easily accessed by the public, which could lead to rogue or inadvertent transfer of hybridized fish to areas above the falls" (p. C-2).

If anglers are the problem, why has fishing been continued and promoted in Silver King Creek? Fishing was stimulated below the falls even during the period of the last poisoning project from 1991-1993, for example, the EIS states: "… during 1991, approximately 800 rainbow-Paiute cutthroat hybrids were collected by electrofishing and stocked into Lower Fish Valley and Tamarack Lake using a helicopter. These non-native trout hybrids provided good fishing for anglers during the early and mid-1990s" (p. 5.1-16). The section open to fishing extends upstream to Tamarack Lake Creek, above the junction of Coyote and Corral Creeks and their "secure" pure populations of Paiute cutthroat trout. Fishing was continued up to the last request for closure of Silver King Creek in 2005, and then the Agencies asked the California Fish and Game Commission to withdraw the closure in 2006 after the federal court blocked the project. Recently, the Agencies asked the Fish and Game Commission to increase the allowable daily take from 5 to 10 fish (p. 3-3). That request was finalized by the Commission on April 9, 2009. The request was made specifically to increase the removal of fish from the project area. These actions belie the Agencies' concerns for the threat of anglers moving fish. 2-39

The other "most important" threat to continued survival of Paiute cutthroat trout is said to be the existing small, isolated fragmented populations. So, on one hand, isolated populations are a threat; yet on the other hand, they provide a margin of safety from "ill intentioned anglers" or other "catastrophic events." However, if the proposed Action is conducted, the entire 11 miles of connected stream habitat would become fully exposed to "rogue transfer" from below Snodgrass Creek or to other, imagined catastrophes. In other words, expanding the population downstream in no way lessens the threat of "rogue transfer." 2-40

The Agencies are now trying to remove themselves from analysis of implications of a future fishery for Paiute CT as part of the Heritage Trout Fishing Program, claiming it is a decision for the California Fish and Game 2-41

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Commission (e.g., p. 5.1-30, 5.6-9) and "not part of the proposed Action (or its alternatives) which focuses on restoration of the species" (p. 5.1-30). Others in the CDFG, however, have written: "The planned addition of a catch-and release Paiute cutthroat trout fishery below Llewellyn Falls, which is conditioned on removal of the existing trout population, will provide a unique opportunity" (p. 113, Deinstadt et al., 2004).

And earlier, "By the summer of 1973, following a year of discussions and meetings both within the Department of Fish and Game and between the Department and the U.S. Forest Service, it was finally decided that restoration of pure Paiute cutthroat in the mainstream above Llewellyn Falls would be attempted..." and "It was further decided that restoration of pure Paiute cutthroats would be extended to all of Silver King Creek and its tributaries above Silver King Canyon" (p. 38, Ryan and Nicola, 1976). 2-41 continued

Nevertheless, in the 1985 FWS Recovery Plan (U.S. Fish and Wildlife Service 1985) the Paiute CT would be considered recovered "when a pure population of Paiute CT has been reestablished in Silver King Creek above Llewellyn Falls." That objective has been met. 2-42

The EIS/EIR is inadequate because it has highlighted the continuing threat from anglers moving fish, yet has not evaluated the sport fishery being planned to follow removal of hybrid fish from the proposed areas or the current newly expanded fishery above Silver King Creek canyon. 2-43

Agencies Moving Hybrid Fish in Wilderness Areas

Prior to the 1991 poisoning of the Upper Silver King basin hybrid fish were captured and moved to other places in the Wilderness Area (Tamarack Lake and Poison Lake) and in the east Carson drainage (Ryan as cited in Schaffer 1992). Moving hybrid fish to other areas in the Wilderness Area was apparently still occurring as recently as 2004, according to the Trout Unlimited website, August 3, 2004. If the Agencies have so much trouble with hybrid fish polluting Lahontan CTs and Paiute CTs, why have they been expanding the populations of hybrid fish anywhere, let alone in a Wilderness Area and in the same major drainage, the East Carson River, where they think they have pure populations of Lahontan CTs and Paiute CTs? And why has it been CDFG policy for so long to move unwanted hybrid fish, or for that matter non-native fish of any kind, to other areas in a Wilderness Area without any environmental analysis or recognition that this is a form of biological pollution? "Ill-intentioned anglers" and "rogue transfer" of fish are not the only, or even the major agents, of non-native fish pollution in the Sierra. 2-44

We previously raised our concerns about the transport of salvaged hybrid fish into the Poison Creek drainage where pure Lahontan cutthroat trout were said to live (Deinstadt et al., 2004). In the EIS/EIR, a small tributary of Silver King Creek is now labeled "Poison Flat" (Fig. 1-1). 2-45

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Deinstadt et al. states, "Poison Flat Creek is a northern fork of Poison Creek and is not named on maps. Because of its close proximity to Poison Flat it is informally called Poison Flat Creek" (p. 109). Several references to the unnamed tributary of Silver King Creek refer in the EIS/EIR to Poison Flat (e.g., p. 3-4, 5.2-13, 5.4-1). We suggest that the EIS/EIR avoid references to the tributary of Silver King Creek in any way as "Poison Flat" so that confusion in future stocking, fishing, or surveys will be avoided.

2-45 continued

Other Catastrophes

The EIS/EIR frequently mentions the risks of extinction from low frequency, large events, e.g., flood and fire. These risks are overblown. In one place (p. 5.1-2, EIS/EIR), occasional floods, forest fires, and drought help create a "…mosaic of patchy, dynamic habitats that support diverse and resilient communities of aquatic and terrestrial flora and fauna." But later in the EIS/EIR: "Due to the small and restricted populations that continue to face threats from catastrophic events such as floods, fire, and non-native fish populations…" (p. 5.1-8), and "…remaining Paiute cutthroat trout populations are vulnerable to extinction through stochastic factors such as … catastrophic events such as floods and fire…" (p. 5.1-12).

The Paiute cutthroat survived, presumably, over the many years of its existence, in the face of naturally occurring fire and flood when it was confined to a much smaller habitat than it currently occupies. Fish surveyors in the Silver King Creek watershed point out that "Effects of the 1997 flood were not evident from the Four Mile Canyon Paiute cutthroat trout populations or our observations" (p. 108, Deinstadt et al. 2004). This flood was the largest in the 87 years of record for the closest USGS gaging station, the W. Carson River at Woodfords.

Other long-term studies in the eastern Sierra Nevada have shown the persistence and resilience of Lahontan Basin fishes under the natural regime of floods and drought (Erman 1986, Erman et al., 1988).

Risks of large fires are lowest at the highest elevations (such as the Silver King Creek basin) of the Sierra Nevada and especially so in remote locations where attempts at fire suppression and hence fuel build up are minimal (McKelvey et al., 1996).

2-46

Taxonomic status of Paiute Cuttroat Trout

For the first time, we learned in this EIS/EIR that the Paiute cutthroat trout, *Oncorhynchus clarki seleniris*, (Paiute CT) can not be separated visually in the hand from hybrids of it with rainbow trout, *Oncorhynchus mykiss*; golden trout, *Oncorhynchus mykiss aguabonita*; and Lahontan cutthroat trout, *Oncorhynchus clarki henshawi* (Lahontan CT). We also learned in the EIS that genetic markers have not yet been found to separate the Paiute CT from the Lahontan CT.

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We commented previously on the subject of genetic composition of the fish in Silver King Creek and cautioned against moving or poisoning fish before key questions were resolved. Now, again, the Agencies want to push ahead with "restoration" before they know the answer to a fundamental question of the "purity" of Paiute cutthroat trout populations. Lahontan CT have been present in Silver King Creek prior to any attempts at Paiute CT recovery (Ryan and Nicola 1976). And yet, the Agencies still cannot say either that there is any genetic difference between a Lahontan cutthroat and a Paiute cutthroat or whether or not Paiute cutthroat populations are hybrids of the two. The final sentence from the paper by Cordes et al. (2004) is critical: "Additionally, the development of molecular markers that can distinguish between LCT and PCT would be important for determining their genetic relationship and investigating the possibility of introgressive hybridization between the two groups prior to any restorations." (p. 116, our emphasis added).

More recent genetic studies (Finger et al., 2008) plus the summaries in the Draft EIS/EIR support our earlier misgivings about any project going forward. These findings are as follows:

1. In both a report to the USFS and CDFG (Israel et al., 2002) and the subsequent published paper (Cordes et al., 2004) researchers found no way to separate Paiute cutthroat trout from Lahontan cutthroat trout by the means they used to identify hybrids.

2-47 continued

2. The most recent genetic study by Finger et al. (2008) developed more methods of separating and distinguishing "pure" and hybrid trout from Silver King Creek. This study developed single nucleotide polymorphism markers (SNPs) that are said to be quick, inexpensive, and effective for characterizing introgressed populations and to improve on past molecular markers that "…are costly, time consuming, and often are not diagnostic for distinguishing between *O. mykiss* and *O. clarkii*."(Finger et al., 2008, p. 4). Nevertheless, although the new methods could distinguish between subspecies of *O. mykiss* (i.e., between rainbow and golden trout subspecies) and between rainbow and cutthroat trout, the SNPs could not separate or distinguish between subspecies of cutthroat trout (*O. clarkii*) (i.e., between Paiute and Lahontan cutthroat trout).

3. The Draft EIS/EIR points out in several places (e.g., p. 5.1-34, 5.1-48) that Paiute CTs cannot be distinguished from hybrids in the field: "There is no practical way to identify or separate, in situ, potentially pure Paiute cutthroat trout from hybrid individuals in treated areas."

We wonder, then, how Paiute CT can be separated and restocked after rainbows, Lahontans, and hybrids are removed from the area. We also wonder what the CDFG has been moving around and calling Paiute CT if they can not separate it visually.

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The Agencies have moved Paiute CTs into several other areas where it was not native, and so there are now four or five other populations of it in other streamsheds. In the Silver King Creek basin there are now six separated populations of the Paiute CT in part because the Agencies purposely enhanced barriers on some of the smaller streams to separate the fish. Now they claim the isolated populations are a threat to the survival of the fish (see following section on Fragmentation). 2-48

Furthermore, there are conflicting opinions among scientists in the published literature about the origin and age of this subspecies. Is it an old form (J. H. Ryan in Schaffer 1992, Nielsen and Sage 2002) or a relatively recent form (Behnke and Zarn 1976), in evolutionary terms? Or is it perhaps an even more recent color variation that developed in a population of Lahontan CT, that were moved over maybe the last 120 or fewer years? 2-49

Ryan reported that the native habitat of the Paiute CT was above Llewellyn Falls (J. H. Ryan in Schaffer 1992). The type locality for the subspecies is above Llewellyn Falls, that is, the location where the specimens were first collected and subsequently described by Snyder in 1933. The Agencies have rather recently decided, with no scientific evidence, that the native habitat was below Llewellyn Falls. 2-50

Fragmentation of Existing Populations of Paiute CT

The EIS/EIR has built a case for expanding the range of PCT below Llewellyn Falls partly based on the fragmented character of existing populations within and outside the Silver King Creek basin. It cites references that claim minimum stream lengths needed to save a species. "Given the current literature in trout population ecology, the existing small isolated populations of Paiute cutthroat trout are not large enough to sustain the subspecies in the long term" (p. 5.1-12 EIS/EIR). The Agencies have not fully acknowledged (p. 5.1-2) that some of the present fragmentation in Silver King Creek is from their own actions and could be undone.

If more connectedness is important, the EIS/EIR should consider actions that would expand connectedness of existing populations in addition to moving fish among populations. Within the upper mainstem of Silver King Creek above Llewellyn Falls, there are now 2.7 miles of stream without barriers (Table 5.1-7). Prior to construction in 1972 of an artificial barrier by the Agencies (p. 5.1-2 EIS/EIR), Four Mile Canyon Creek (1.9 miles) had only a 2 ft falls that was not a fish barrier. "With the cooperation and assistance of the Toiyabe National Forest personnel, an artificial barrier was constructed in 1972 on a natural falls about 0.6 m (2 ft.) high, situated between several large granite boulders approximately 0.4 km (1/4 mi.) upstream from the mouth" (p. 36, Ryan and Nicola 1976). 2-51

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In addition, the Agencies have likely enhanced or altered barriers on Bull Canyon Creek (0.6 miles). "The 1975 survey, however, revealed that heavily spotted fish were present upstream as far as the mouth of Whitecliff Lake Creek. An inspection of the barrier site revealed that the stream had bypassed the natural barrier" (p. 43, Ryan and Nicola 1976). Thus, it would be possible to redirect Bull Canyon Creek around the existing barrier as naturally occurred in the past and remove the artificial barrier on Four Mile Canyon Creek, thereby restoring an additional 2.5 miles to the existing 2.7 miles on Silver King Creek for a total of 5.2 miles. Removal of these artificial barriers would nearly double the distance of interconnected stream and restore the streams to a natural state.

2-51 continued

Missing basic life history information and characteristics of Paiute CT

For all of the Agencies' professed concerns for the threatened Paiute CT over the past more than 40 years, they have failed to obtain some of the most basic biological information about the fish. We brought to the attention of the FWS five years ago many gaps in data, and the information is still missing in the EIS as follows:

1. No data on food habits of fish from Silver King Creek, and yet, the Agencies are ready to poison out the native invertebrates in the "native" habitat of the fish.

2. No data on age and growth except from fish transplanted to the North Fork Cottonwood Creek a non-native habitat.

3. No data since 1956 when Ryan and Nicola (1976) reported on ages of 40 fish from Silver King Creek.

4. No data in last 53 years on length at age for fish from Silver King Creek.

5. No data on length – frequency for populations in Silver King Creek.

6. No data on when fish reach sexual maturity in Silver King Creek and, therefore, whether 150 mm (the standard size CDFG considers "catchable" or adult trout) as the rule for "adult" makes any sense.

7. No data on fecundity of fish in Silver King Creek.

8. No data on any differences in age/growth/sexual maturity by sex (even though typically trout males mature a year earlier than females).

9. No data to support or refute that there are assumed (by FWS in Revised Recovery Plan) to be only three age classes of PCT in Silver King Creek.

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10. No current field data on age class composition in the EIS/EIR although the Revised Recovery Plan said it would "now" (as of 2004) begin "to monitor abundance and age class composition." (Have they?)

11. No data on microhabitat (e.g., depth, velocity, substrate) preferences.

12. No data on meristic characteristics of PCT (e.g., pyloric ceaca, gill rakers, basibranchial teeth, scale counts) since Behnke and Zarn (1976) examined Snyder's original 1933 collections.

13. No data (as listed above) on any of the out-of-basin populations except NF Cottonwood Creek collected in the early 1970s.

2-52 continued

Errors in Estimate of Number of Fish

We think the values presented in the EIS/EIR (p. 5.1-9) for the number of fish in Upper Silver King Creek and the other tributaries are far too low. The EIS/EIR states: "Approximately 1,020 adult Paiute cutthroat trout reside in the Silver King Creek drainage, based on CDFG population assessments in 2001 (FWS 2004). CDFG estimated approximately 424 fish in Upper Silver King Creek above Llewellyn Falls, and an effective population size of 400-700 fish in Four Mile Canyon, Fly Valley and Corral Valley Creeks combined" (p. 5.1-9).

Shown below are the values we computed from FWS (2004) data given as 2000 and 2001 CDFG estimates (which in nearly all cases were lower than the multi-year average). Data for Coyote Valley Creek are the mean of the two test sections. Data for Bull Canyon Creek are from Deinstadt et al. (2004).

Stream	Adult/mile	Habitat in Miles	Total Adults (> 150mm)
Upper Silver King Ck.	353	2.7	953
Four Mile Cyn. Ck.	126	1.9	239
Bull Canyon. Ck.	160	0.6	96
Fly Valley Ck.	190	1.1	209
Corral Ck.	95	2.2	209
Coyote Ck.	884.5	3.0	2,654
Total Adult Paiute Cutthroat			4,151

If the mean value for stations with many sample years is used, the total number of adult Paiute cutthroat trout is 4,726.

Clearly, if correct values for all the sections were used, there are four times as many adult Paiute cutthroat trout in the Silver King Creek drainage as reported in the EIS/EIR.

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Errors and Accidents in Rotenone Projects

We have previously documented many accidents that occurred in past rotenone applications (e.g., Exhibit A) Most problems were reported by Regional Water Quality Control Boards doing independent monitoring. Some were found in CDFG reports following rotenone projects. They illustrate the difficulty the Agencies have in executing aquatic poisoning projects without major incidents and unforeseen accidents. 2-54

Hazards and Hazardous Materials

The EIS/EIR declares there is no need to consider Hazards and Hazardous Materials because "…The proposed Action and alternatives would not transport...or dispose of hazardous materials (p. 4-3)." How, then, can the Agencies get to Silver King Creek with 300-600 pounds of potassium permanganate and 20 (or 50, p. 3-9) gallons of rotenone formulation? The project would involve hazardous materials and the EIS must deal with that fact. It must also analyze the poor record the Agencies have for conducting these poisoning projects responsibly and without accidents. 2-55

Interactions of Rotenone With Other Pesticides

There is strong evidence that residues of common herbicides, insecticides and piperonyl butoxide (PBO) may remain in aquatic sediments (Woudneh and Oros 2006) or in the water, even in remote national parks (LeNoir et al., 1999, Angermann et al., 2002) and that they affect aquatic organisms (Relyea 2005).

With many toxins, such as rotenone, antimycin and other pesticides, the effect on the electron transport system in mitochondria is mediated by an organism's natural defenses. But when certain compounds are also present in the environment, toxicity is increased because the natural defense system (cytochrome P450) is reduced (Li et al., 2007). This result is well established for the role of PBO, a synergist in formulations of rotenone and other insecticides. However, it is also known that other pesticides themselves may function much like PBO (in blocking cytochrome P450) and, hence, increase substantially the toxicity of insecticides. The EPA is aware of these relationships, and in their rotenone risk assessment EPA cited the work by Bills et al., (1981), for example, that showed polychlorinated biphenyls (PCBs) multiplied the toxicity of rotenone to fish. There is other work that has established similar relationships among a range of pesticides and herbicides (e.g., Bielza, et al., 2007).

It is likely that low level residues of pesticides are present now in many aquatic habitats and that PBO is present in sediments of Silver King Creek from earlier projects. We are unaware of any fish poisoning project that has analyzed water or sediments for low level pesticide residue prior to applying piscicides. The effects of rotenone formulations in these waters are 2-56

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underestimated because of the possible presence of other pesticides already in the water. 2-56 continued

Rotenone and Parkinson's Disease

Prentiss Inc., Foreign Domestic Chemicals, and Tifia International LLC, manufacturers of rotenone in the U.S., have petitioned the EPA to remove rotenone from the list of pesticides for terrestrial use, but not (yet) for aquatic use (EPA website). We suspect, but do not know for sure, that this petition is because of the growing evidence of the connection between rotenone and Parkinson's disease.

The discussion in the EIS/EIR (p.5.3-9) of potential links between rotenone and Parkinson's disease (PD) is as incomplete as that given in the American Fisheries Society's Task Force on Fishery Chemicals (2000). Since the original article by Betarbet et al., 2000, many studies have been published in peer reviewed literature on this association. At latest count, there are 352 studies linking rotenone and PD in the Web of Science. In a recent review on the more general link between PD and many pesticides, including rotenone (Hatcher et al., 2008), the authors noted that "…rotenone is very hydrophobic and, thus, easily can cross biological membranes without the need for a transporter." They concluded "there is evidence of a role for rotenone in PD pathogenesis" although it is "unlikely a major contributor because of its limited commercial use, short half-life in the environment and low bioavailability." Similarly, Brown et al., (2006) concluded that sufficient data suggest rotenone affects development of PD. They, too, caution that although the weight of evidence is sufficient to conclude that a generic association between pesticide exposure and PD exists, more data are needed to prove conclusively cause-effect. 2-57

Furthermore, rotenone testing for PD associations generally have not included other cube resins, especially deguelin and tephrosin (Fang and Casida 1999, Cabizza, et al., 2004), that are major components equal to or greater in concentration than rotenone in the active ingredients of the proposed piscicide formulations. For example, in Nusyn-Noxfish the active ingredients are 2.5% rotenone, 2.5% piperonyl butoxide, and 5% other cube resins. These cube resins have been likewise shown to interfere with mitrochondial function in the same way as rotenone (Caboni et al., 2004).

Silver King Creek is in a remote area. The threat of exposure to rotenone and the threat of Parkinson's Disease would be primarily to the people applying the poisons and working along the stream during the project.

Rotenone Concentrations

The EIS/EIR states that the proposed project would use lower rotenone concentrations than have been used in the past (e.g., p. 5.3-11). We 2-58

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find no basis for this statement. The proposed chemical formulations would all result in a target concentration of 25 µg/L of rotenone (Table 5.3-1). According to Trumbo et al. (2000a) this target concentration is exactly the same as that used from 1991 to 1993.

2-58 continued

Alternative 3, Combined Physical Removal of fish

Alternative 3 is dismissed by the Agencies as being too difficult and taking too long. We disagree. Mechanical removal of fish, using seines, blocking nets, and electrofishing equipment is possible and can be done in ways that would not greatly disturb the aquatic environment or species.

Thompson and Rahel (1996) found that with three-pass removal electrofishing they were able to remove a high proportion of fish in 1 year. The lowest efficiency was for small (age-0) brook trout. However, because the remaining fish the next year were immatures, there was no reproduction and thus, "recruitment was virtually nonexistent following 1-2 years of population control." Therefore, once the large fish are taken, the problem gets easier.

The USFS is currently removing non-native fish in the Upper Truckee River as part of a Lahontan CT Trout restoration project, and they are doing it with a combination of electrofishing and gill netting (See attached Exhibit E). They tried poisoning with rotenone first to remove brook trout in Meiss Meadow and failed. They then switched to electrofishing and were successful as of 2007. They are continuing mechanical removal in the Upper Truckee River. The attached map in Exhibit E illustrates a complicated habitat.

2-59

In Sequoia-Kings Canyon National Parks, biologists recently have been successful in removing all fish from small lakes and feeder streams by entirely physical means (nets and electrofishing) (D. Boiano, NPS fishery biologist, pers. comm. 2005). Fish have been successfully removed from lakes using gill nets in other places (e.g., Knapp and Matthews 1998; Pope et al., 2009).

In the Silver King Creek system electrofishers could begin at the upstream areas and move downstream so that downstream drift of fish would not be a problem. Block nets could be positioned to limit fish movement between upstream and downstream sections. Regular tending of nets to remove debris or maintain position should be possible, especially with volunteers. The Agencies can make little use of volunteers in the poisoning option, given the requirements of training, licensing, risk, and Personal Protective Equipment. But physical removal would be amenable to volunteer labor needed for the many tasks and could effectively reduce total project costs as well as enhance project efficiency (e.g., tending block nets, hauling supplies, refreshing workers, etc.).

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An excessively high voltage is not necessary to collect fish, but fish would have to be killed and buried after they are collected. Moving nonnative hybrid fish to other areas in the Wilderness Area and in the same East Carson River drainage, as the Agencies have been doing, is unsound management that leads to more problems later and should be ceased immediately in all Wilderness Areas.

2-59 continued

Conclusion

In conclusion, the single species management approach proposed in the preferred alternative is out-of-date. It should be rejected. Ecologists have known for decades that species are interwoven and interdependent. Applying non-specific poisons to whole communities for the goal of expanding the range of a single population of fish is unacceptable in modern ecology. The preferred alternative would cause long-term changes of at least 6 years to the structure and function of the biological community. Poisoning may eliminate some non-target species forever, as the Agencies admit in this EIS/EIR. The Clean Water Act requires that existing uses be protected in waters of exceptional quality. The Agencies have refused, again, to conduct a species level inventory of aquatic invertebrate species. An alternative management strategy exists and should be used if the agencies want to try to eliminate the non-native fish they have stocked in the stream system. But before even that alternative is contemplated, a critical question is whether or not an impermeable barrier to upstream fish movement exists. Further, scientists are unable at this time, to genetically differentiate between Lahontan cutthroat trout and Paiute cutthroat trout, and the Agencies cannot visually distinguish "pure" Paiute cutthroat trout from hybrids, thereby making management strategies unrealistic.

2-60

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RESPONSE

Comment Letter 2

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Undated 2009

2-1

The Agencies recognize that comments previously submitted to CDFG, USFWS, USFS, the Lahontan Board, and the State Board in relation to prior proposed rotenone treatment projects to restore Paiute Cutthroat Trout in the Silver King Creek Watershed are part of the administrative record for this project. The Agencies have reviewed these previously submitted comments, and the issues raised in these prior comments are all addressed in the EIS/EIR and the Agencies' responses to comments on that Draft EIS/EIR. Please refer to the EIS/EIR, Master Responses A through G, and the responses to comments generally.

2-2

Please see Sections 5.1 (Aquatic biological resources), 5.2.4.2 (Alternative 2: proposed Action) in the EIS/EIR, Master Response B, and response to Comments 1-1 and 1-25 which disclose the potential impacts of the proposed Action on the aquatic and terrestrial aquatic food web, community composition and species assemblages. Section 5.1.1.3 (Benthic macroinvertebrates) in the EIS/EIR also discusses the impracticability of precisely characterizing changes to the invertebrate community and the fact that studies in the Silver King drainage indicate that the system is healthy and has returned to a high level of diversity after historic treatments. The Agencies have put forth the proposed Action notwithstanding these potential effects, due to the federally-listed status of the Paiute cutthroat trout, its limited range, and the need to recover the species.

2-3

See Section 5.1.1.3 (Aquatic biota) for a discussion on the barriers in Silver King Canyon. See response to 1-38 regarding barriers.

2-4

Please see Section 5.1.1.3 (Existing genetic structure) in the EIS/EIR, Master Response C, and response to Comment 1-9 regarding genetics of Paiute cutthroat trout.

2-5

Please see Sections 2.2 (Objective/purpose and need for action), 2.3 (Proposed Action), 5.1.1.3 (Aquatic biota) in the EIS/EIR, Master Response D, and response to Comments 1-11 through 1-16, 1-21 for an explanation of the reasons why Alternative 3 does not offer the best chances for success in meeting the project objectives of restoring the Paiute cutthroat trout. Please see the responses to Comments 1-5, 1-7, 1-8, 1-31 and 1-38 regarding the rationale for the restoration of Paiute cutthroat trout to the reach of Silver King Creek below Llewellyn Falls and the discussion about barriers present in Silver King Canyon that will isolate the restored Paiute cutthroat trout population.

2-6

Please see Sections 1.4 (Public involvement summary) and 2.1.2 (Past restoration efforts in Silver King Creek) in the EIS/EIR that notes the public involvement and related past legal cases referred to in the comment. Section 2.1.2 (Past restoration efforts in Silver King Creek) describes the extensive legal history of past efforts to restore the Paiute cutthroat trout to its historic range.

2-7

The comments on the draft revised recovery plan were considered. The Endangered Species Act requires public notice and an opportunity for public review and comment 4(f)(4). The USFWS must "consider all information presented during the public comment period prior to approval of the plan." However, Federal Agencies are not required to respond to comments in writing. Unlike other processes that come under the public notice and comment requirements of the Administrative Procedure Act, ESA requires public notice and opportunity for comment. The comments submitted are in the USFWS records for the recovery plan and were considered.

2-8

Please see Section 5.1.1.3 (Benthic macroinvertebrates) in the EIS/EIR, Master Response B, and response to Comment 1-4 regarding the need to complete a species inventory prior to implementation of the proposed Action. In addition, please see response to Comment 1-24 regarding the 1994 programmatic EIR and the potential loss of rare and endemic species the project area.

2-9

Please see Section 5.1.1.3 (Benthic macroinvertebrates) and Appendices D and E in the EIS/EIR for how the Agencies have modified the sampling design in response to comments on previous benthic macroinvertebrate protocols. Please see response to Comment 1-24 regarding the 1994 programmatic EIR.

The Agencies acknowledge that Trumbo et al. 2000a, 2000b) did not include complete species inventories, however it did identify many taxa to the species level.

The Agencies also acknowledge that data collected in 1996, three years post treatment in Silver King Creek, showed changes from pretreatment collections. For example, Stonefly taxa (3 years after final treatment) showed differences from the pre-treatment composition in 1990-91. However, this analysis relied on sampling only a small portion of the treated area. Survey results from nine years at a single sample site found at Four Mile Canyon that nine genera (19%) were found in only one year (Appendix D). This site was not treated with rotenone, however if the area had been treated and these nine genera collected prior to treatment, post-treatment collections would shown these genera to be missing and one might conclude erroneously the treatment was the cause, not sampling limitation or the difficulty in collecting macroinvertebrates of limited densities.

Vinson and Vinson 2007 report that 15 genera (18%) were collected in only one year over the four years sampled from 2003 to 2006. In addition, Mangum (1996) reported "missing" taxa by specific sampling station which were found to be present at other stations within the 1991 to 1993 Silver King treatment area. These results indicate the variability in sampling results within the treatment area from year to year and the difficulty of collecting taxa of low abundance.

The EIS/EIR also cites other studies which show impacts on macroinvertebrates from rotenone treatments. Vinson and Vinson 2007 also provide a literature review of other studies (Appendix D). Please see Section 5.1.1.3 (Benthic macroinvertebrates), Appendices D and E in the EIS/EIR to access

changes in community dominance, EPT taxa, stonefly taxa, and the recovery of the Peltoperlid *Yoraperla* throughout previously treated areas.

2-10

Please see Section 3.2.2.3 (Fish removal) in the EIS/EIR and response to Comment 1-25 and 1-50.

While it is true that the precise changes in species density and richness resulting from a rotenone treatment cannot be determined in advance, the Agencies do expect that recolonization will take place due to factors identified that will facilitate benthic macroinvertebrate recovery. They range from hyporheic zone refugia, non-treatment of headwater reaches (including springs and seeps), relatively brief treatment times, and active ingredient rotenone dosage targeted for trout and not benthic macroinvertebrates (Finlayson et al. 2010). Additionally, the Agencies propose to use CFT Legumine™ or Noxfish® a non-synergized formulation (does not contain piperonyl butoxide) to reduce toxicity to macroinvertebrates (Finlayson et al. 2010). The Agencies acknowledge there could be effects to sensitive benthic macroinvertebrates (see Section 5.1.4.2, Impact AR-1).

2-11

Please see Section 5.1.1.3 (Benthic macroinvertebrates) and Appendices D and E in the EIS/EIR which report changes in community dominance, EPT taxa, stonefly taxa, and the recovery of the Peltoperlid *Yoraperla* throughout previously treated areas. The Agencies agree with Dr. Herbst, and acknowledge that the data collected in 1996, three years after the last treatment showed a high level of community dominance, transient loss of EPT taxa, loss of stonefly taxa, with a notable loss of the abundant Peltoperlid *Yoraperla.*

2-12

Please see Section 5.1.1.3 (Benthic macroinvertebrates) and Appendices D and E in the EIS/EIR for how the Agencies have modified the sampling design in response to comments on previous benthic macroinvertebrate protocols. Also please refer to Section 5.1.4.2 (Impact AR-1) and response to Comment 1-50 describing how the Agencies will minimize impacts to benthic macroinvertebrates. Please see Master Response B and response to Comment 1-4 regarding species level aquatic studies. See response to Comment 1-24 regarding loss of rare and endemic species.

2-13

Please see Master Response B. The Agencies agree that the collection of adult invertebrate is required to identify many taxa to species. The Agencies have changed the usage of the term “species” to “taxa” in the EIS/EIR where appropriate. The commentors assumption about the purpose underlying the Agencies’ use of terminology is both unsupported and erroneous.

2-14

The Agencies agree with the statement regarding Vinson and Vinson 2007 Summary and pages 13 and 14 as well the limitations discussed in Vinson and Vinson 2007 of the making comparison between surveys from 2003-2006 and early surveys. Please see Master Response B and response to Comment 2-13 regarding corrections to the usage of the term “species”. The Agencies respectfully disagree with the assertion that the discussions in 5.1.1.3 (Special status macroinvertebrates, Rare and endemic species) should be disregarded. We have acknowledged shortcomings of previous sample designs and we have modified the current monitoring plan based on comments received (See Appendix E in the EIS/EIR which contains the updated monitoring plan). The Agencies have acknowledged potential impacts to rare and

endemic species (Section 5.1.4.2 Impact AR-1) and we have committed to taking steps to minimize these impacts. See Master Response B and response to Comments 1-50 and 2-10.

The Agencies agree that there is no complete species list for both historic and recent data; however, we do present a list of taxa with many identified to the species level in Appendix D.

The Agencies acknowledge that sampling protocols and methodologies have changed throughout the 30 years that benthic macroinvertebrates have been collected in the Silver King Creek drainage. We stand by the conclusions stated in Vinson and Vinson (2007) (Appendix D). As we have stated in response to Comments 2-9 and 2-12 we have attempted to improve our sampling design so that the some of the short comings identified by the commenter and pointed out in Vinson and Vinson (2007) are addressed.

2-15

Please see Master Response G. Figure 2 in Vinson and Vinson 2007 is correct.

2-16

Table 4. in Vinson and Vinson (2007) (Appendix D) states that Bull Canyon Creek, station 2, is a control; we agree that the station is mislabeled. We do not agree the data analyses are invalid. Bull Canyon Creek, was treated in 1964, 1976, and during 1991-1993. Only the 1984 and 1987 surveys on Bull Canyon Creek, Station 2 were available to Vinson and Vinson (2007). Throughout the document, Vinson and Vinson (2007) analyze Fly Valley and Four-Mile Canyon Creeks as controls. See Table 5 which reports 13 samples obtained from these two creeks as well as Table 6 reporting sample size for control samples. Please see Master Response G.

2-17

Vinson and Vinson (2007) (Appendix D) reported count data in the tables, not the number per square meter. The data were entered correctly (Vinson, personal communication with J. Harvey, USFS, 2009), but the data was not converted back to the number per square meter when presented in the tables. The tables need to be corrected. A sheet informing the reader of the reporting error in the tables in Appendix D (Appendix 12) has been added to the EIS/EIR.

2-18

The Agencies disagree. Vinson and Vinson (2007) were able to statistically determine a significant difference in Coleoptera abundance between treatment and control. The Agencies believe if there were other significant differences in aquatic macroinvertebrate assemblages between treatment and control samples, they would have been identified with the measures used by Vinson and Vinson (2007), Tables 6 and 10. Assemblage is the term used to describe the collection of taxa making up any co-occurring community of organisms in a given habitat.

2-19

The Agencies agree that Trumbo et al. (2000 a, b) found impacts on invertebrates three years following the 1993 Silver King Creek rotenone treatment and that impacts on invertebrates were still evident two years after the final Silver Creek rotenone treatment. Also see response to Comment 2-11 (please see Appendix E where Peltoperlidae is the dominant family at previously treated areas).

To better monitor impacts and recovery of invertebrates in Silver King Creek following the proposed rotenone treatment, the Aquatic Invertebrates Interagency Monitoring Plan in Appendix E in the EIS/EIR

incorporates post-treatment monitoring the first, second, third, and fifth year post-treatment. The Agencies conclude that adding two extra years and doing post-treatment monitoring for five years should be sufficient to determine benthic macroinvertebrate community recovery.

2-20

See response to Comments 1-50 and 1-51.

See section 5.4.4.2 (Alternative 2: proposed Action) in the EIS/EIR which states: "Deterioration of water quality is permissible only if the Regional Board finds that such a change will be consistent with maximum benefit to the people of the State. Similarly, the Federal Antidegradation Policy (40 CFR § 131.12) dictates that water quality shall be preserved unless deterioration is necessary to accommodate important economic or social development. The temporary deterioration of water quality due to the use of rotenone by the DFG is justifiable in certain situations. The Regional Board recognizes that the State and Federal Endangered Species Acts require the restoration and preservation of threatened and endangered species. The Regional Board also recognizes that situations may arise where outbreaks of fish disease or the threat presented by prohibited or exotic species may require immediate action to prevent serious damage to valuable fisheries resources and aquatic habitat. These resources are of important economic and social value to the people of the State, and the transitory degradation of water quality and short-term impairment of beneficial uses that would result from rotenone application is therefore justified, provided suitable measures are taken to protect water quality within and downstream of the project area."

The proposed Action is consistent with the explanation provided in the Lahontan Basin Plan, Section 4.9 for allowing rotenone projects with respect to antidegradation. We believe that the project meets the criteria required in the Basin Plan, Section 4.9, for rotenone use in fisheries management. Therefore, this project is consistent with the State nondegradation and Federal antidegradation policies.

2-21

Please see response to Comment 1-25 regarding food web interactions. Section 5.2 (Terrestrial biological resources) in the EIS/EIR lists all federally-listed species and California State listed species, Federal and State Candidate species, Management Indicator Species, and Forest Sensitive Species known to occur in the project area. Other species also considered include neotropical migratory songbirds and other amphibians. Chapter 5.2 (Terrestrial biological resources) in the EIS/EIR does acknowledge that a reduction in aquatic macroinvertebrates could impact insectivorous wildlife species.

2-22

Paiute cutthroat trout, like other inland trout, are opportunistic feeders, utilizing whatever aquatic and terrestrial invertebrates occur in the drift (Wong 1975, Behnke 1987, Dunham et al. 2000, Allan et al. 2003, Hilderbrand and Kershner 2004, Saunders and Fausch 2007). Behnke (1987) goes on to say that, "food requirements are not a limitation factor for the preservation of Paiute cutthroat trout or for their successful establishment in a new environment." This opportunistic behavior is demonstrated by the fact that Paiute cutthroat trout populations, outside their historical range, survive on prey resources that are present in streams and riparian areas.

2-23

Please see Section 5.1.1.3 (Benthic macroinvertebrates) in the EIS/EIR regarding dispersal abilities of aquatic macroinvertebrates. The Agencies respectively disagree with the comment that most species will not recolonize downstream by drift or upstream through flight (Bilton et al. 2001, Smock 2006, Williams and Hynes 1976, and Ward 1992). Additionally, Herbst (2002) implies that untreated headwater areas are

needed to allow for invertebrates to recolonization through drift from these upstream areas. We agree that less vagile (mobile) species with limited distributions are more vulnerable to disturbance (see 5.1.4.2 Impact AR-1).

We acknowledge that in Sagehen Creek species composition changes along a downstream gradient from the spring source (Erman 1996). However, the proposed Action does not include treating any headwater springs. Instead, treatment areas will begin at Llewellyn Falls on Silver King Creek and at barriers on Tamarack Creek. Upstream of these barriers will include stream and spring habitats that would not be treated and therefore would provide a variety of untreated habitats for macroinvertebrates to recolonize from.

2-24

The Agencies agree that some species have the ability to recolonize more rapidly than others; however the Agencies do not expect this to result in a long-term change in macroinvertebrate assemblages (see response Comment 2-19 regarding the recovery of rotenone sensitive taxa). The impacts reported by Sode and Wiberg-Larsen 1993 are extremely unlikely to occur in Silver King Creek. The nearest habitats for recolonization to the stream described in their study were 80-100 km (50-60 miles) away (Sode and Wiberg-Larson 1993). In contrast, recolonization sources for Silver King Creek are immediately adjacent to the treatment area.

2-25

The EPT index is a useful indicator of macroinvertebrate community health (Section 5.1.1.3, Measuring community health and ecological function). We appreciate the commentor's cautionary note about the limitations of broad taxa monitoring. The Agencies agree that relying solely on the EPT index as an indicator of stream health, in some cases, may not fully capture the condition of the system. The Agencies sampling protocol in Appendix E will be using a suite of metrics commonly used in the National Aquatic Monitoring Centers reports. Also see Appendix E for results from 2007 and 2008 surveys.

2-26

Please see Appendix E in the EIS/EIR, Master Response B, and response to Comment 2-25 for the proposed monitoring to evaluate impacts of proposed recovery actions.

2-27

Please see Section 5.1.1 (Environmental setting) and Master Response G regarding previous disturbances in the Silver King Creek basin, and response to Comment 1-55 regarding reference streams. In addition, the project area is occupied by non-native trout adding to impacts on macroinvertebrate populations (Herbst et al. 2003). Based on the previously described disturbances Silver King Creek and its tributaries are not suitable for references in long-term biomonitoring programs.

2-28

Please see Sections 5.2.1.2 (Terrestrial wildlife) and 5.2.4.2 (Alternative 2: proposed Action) in the EIS/EIR and response to Comment 1-26 regarding the presence of amphibians within the treatment area.

2-29
Watershed wide surveys that have been conducted over the last 7 years have not detected either species in the project area, therefore impacts to Sierra Nevada yellow-legged frog and Yosemite toad from any reduction in prey from the treatment is unlikely to occur (See Section 5.2.4.2 (Alternative 2: proposed Action) in the EIS/EIR and response to Comment 1-26). If pre-project surveys detect any life stage of either species, relocation will occur to habitats upstream of Llewellyn Falls where the prey base will not be affected by the proposed Action.

2-30
Section 5.1.1.3 (Aquatic biota) has been revised to include other native fish species found in lower Silver King Creek downstream of the Silver King Canyon and East Fork Carson River. Any fish species impacted downstream of Silver King Canyon will be able to repopulate this area from downstream sources as there are no fish barriers present.

2-31
See Master Response B and response to Comment 1-28 regarding treatment of springs, seeps, and headwater streams and Master Response I regarding climate change.

2-32
Please response to Comment 1-28 and Master Response B regarding treatment of springs, seeps, and headwater streams. Seeps and springs are only to be treated if they may provide refuge for fish. It should be noted that treatment of Tamarack Lake Creek, Tamarack Creek and Silver King Creek does not begin at source seeps, springs, or headwaters, but begins downstream at barrier locations. Tamarack Lake is no longer part of the proposed treatment. The EIS/EIR clearly states that species level inventory has not been completed (Section 5.1.1.3, 1. Lack of inventory data) and Appendix E describes the collection sites.

2-33
Implementation of the springsnail conservation MOU is a separate activity from the proposed Action. The proposed Action does not conflict with the MOU. There are no known populations of springsnails in the treatment area. The Agencies will make the project data available to the parties to the MOU.

Please see Appendix 1 in Vinson and Vinson (2007) (Appendix D) show gastropods to be tolerant to long exposure/high concentrations of rotenone. Given their relative tolerance for rotenone and the proposed treatment duration and concentration, little impact to springsnails would be expected. Eight gastropods were collected from 2003 to 2006. These were found in previously treated areas. See Response to Comment 1-28 regarding springs and seeps that will be avoided during treatment.

2-34
Please see Master Response I regarding Climate Change.

2-35
Heise (2000) has been included in the references cited. See Section 5.1.1.3 (Paiute cutthroat trout) for a discussion on the barriers in Silver King Canyon. See response to 1-38 regarding barriers.

2-36
See Section 5.1.1.3 (Paiute cutthroat trout) for a discussion on the barriers in Silver King Canyon. See response to Comment 1-38 regarding barriers.

2-37
See Section 5.1.1.3 (Paiute cutthroat trout) for a discussion on the barriers in Silver King Canyon. See response to Comment 1-38 regarding barriers.

2-38
There are no plans to build a barrier anywhere in the Silver King Creek watershed. The commentor's discussion of a possible barrier construction in Section 3.4.5 (Treatment of a smaller area) is related to other alternatives that were considered but dismissed.

2-39
See Master Response A, Section 2.2 (Objective/purpose and need for action) in the EIS/EIR, and response to Comments 1-5, 1-7, 1-43, and 1-44 regarding the purpose and need for the proposed Action.

2-40
See Section 5.1.1.3 (Existing threats) for a discussion on existing threats to Paiute cutthroat trout. See response to Comment 1-7.

2-41
The purpose and need for the proposed Action, is described in Section 2.2 (Objective/purpose and need for action) in the EIS/EIR and see response to Comment 1-44.

2-42
Most of the objectives of the 1985 Plan have been accomplished; however, the 1985 Plan did not address recovery in terms of restoring Paiute cutthroat trout into its historical range because the barriers in Silver King Canyon had not been investigated. The 2004 Plan provides significant further analysis of this issue. Numerous trips into Silver King Canyon by CDFG, USFS, and USFWS personnel have documented the existence of natural fish barriers in Silver King Canyon to determine the feasibility of restoring Paiute cutthroat trout into its historic range and have concluded that the barriers will be effective in stopping fish from migrating upstream into historic Paiute cutthroat trout habitat. Therefore, the 2004 Plan addresses recovery in terms of restoring Paiute cutthroat trout into their historical habitat, from Llewellyn Falls downstream to Silver King Canyon.

2-43
The purpose and need for the proposed Action is described in Section 2.2 (Objective/purpose and need for action) in the EIS/EIR and response to Comment 1-44.

2-44
The proposed Action does not include the pretreatment removal of non-native fish from the project area. See Section 3.2.2 (Alternative 2: proposed Action) in the EIS/EIR. In the past, fish rescues were

performed to limit the number of trout killed during treatment and to provide angling in other areas at the request of Alpine County.

2-45

The stream name has been changed in the EIS/EIR. In 2004, the fish salvage that occurred transferred fish to Poison Lake. The pure Lahontan cutthroat trout population resides in an unnamed tributary to Poison Creek (T8N, R21E, sections 26 and 27). This population of pure Lahontan cutthroat trout is isolated from non-native fish populations in Poison Creek (the outlet to Poison Lake) by an impassable barrier.

2-46

A description of stochastic events is presented in Section 5.1.1.3 (Existing threats) in the EIS/EIR and response to Comment 1-32.

2-47

Please see Sections 5.1.1.3 (Existing genetic structure) in the EIS/EIR and see response to Comment 1-9 regarding the ability to visually differentiate Paiute cutthroat and Lahontan cutthroat trout.

2-48

Please see Section 5.1.1.3 (Existing threats). Besides the Silver King drainage, four isolated populations of Paiute cutthroat trout were founded with very few individuals in the North Fork of Cottonwood and Cabin Creeks on the Inyo National Forest and Stairway and Sharktooth Creeks on the Sierra National Forest. However, the long-term survival of these out-of-basin populations is uncertain due to the small size of the drainages and populations, limited genetic diversity, and no hydrologic connections between other Paiute cutthroat trout populations (Hilderbrand and Kershner 2000, Harig and Fausch 2002, Cordes et al. 2004, Moyle et al. 2008). Small isolated populations exhibit founder effects and inbreeding depression, and are extremely vulnerable to extinction. If recovery of Paiute cutthroat trout relied solely upon the existing out-of-basin populations, the long-term survival of the species cannot be ensured.

The Paiute cutthroat trout Recovery Plan (USFWS 2004) focuses on the historical range of Paiute cutthroat trout as the centerpiece of recovery efforts because the populations outside of the basin cannot be as well protected as populations in Silver King Creek. However, protection of the Silver King population, which is essential to recovery of the species, depends upon taking the actions outlined in the Paiute cutthroat trout Recovery Plan (USFWS 2004). Without this recovery project, Paiute cutthroat trout in the Silver King Creek drainage will be at greater risk from hybridization with non-native trout, and/or stochastic (one time) events such as a large fire or flood, and genetic bottlenecking. Recovery of the species cannot be achieved without this project and the long-term survival of the species will be in doubt (Moyle et al. 2008).

2-49

See Master Response C regarding the historical range of Paiute cutthroat trout. The Agencies agree it is unclear exactly when Paiute cutthroat trout became isolated from Lahontan cutthroat trout (estimated 5,000 to 8,000 years ago (Behnke 1992)); however, the literature is clear that it is not a recent (120 years) color variation.

2-50

Please see Section 5.1.1.3 (Paiute cutthroat trout) in the EIS/EIR, Master Response C, and response to Comment 1-8 regarding the historical range of Paiute cutthroat trout. Additionally, the Agencies disagree that the historic range of Paiute cutthroat trout was recently decided with no scientific evidence. The historical range of Paiute cutthroat trout has been published since the 1970's (Behnke and Zarn 1976, Ryan and Nicola 1976, Busack 1975, Behnke 1979).

2-51

See Section 5.1.1.3 (Threat of fragmented populations) in the EIS/EIR, Master Response C, and responses to Comments 1-20, 2-48, 4-1, 7-5, and 8-20 regarding habitat fragmentation.

This recommendation would not recover Paiute cutthroat trout into their historical habitat. All available habitat in Upper Silver King Creek and associated tributaries is occupied by Paiute cutthroat trout. There is no more available habitat to increase connectedness of the populations as suggested by the commenter. Habitat in Bull Canyon is very poor due to high gradient. More recent surveys have identified two natural barriers in Bull Canyon. The augmentation to the barrier on Four Mile Creek was constructed to protect putative pure populations from hybrids which were eradicated in the early 1990's. Paiute cutthroat trout already occur above this barrier and can move downstream.

2-52

The Agencies have been collecting basic life history data on Paiute cutthroat trout in the Silver King Creek drainage since the description of the sub-species and on a nearly annual basis since 1964. Test section locations in each tributary stream have been selected to monitor trends in abundance of populations and monitor impacts of land use, including grazing by cattle, in representative reaches of the best trout habitat. Single pass electrofishing and snorkel surveys have been conducted in various reaches to assess Paiute cutthroat trout populations. Information collected in test sections includes length and weight measurements, stream flow and site dimensions. Length frequency diagrams show a typical tri-modal distribution.

While most Paiute cutthroat trout may live 3 to 4 years, current research indicates Paiute cutthroat trout may live up to six years in Silver King Creek (Titus and Caulder 2009). There is high variability between years and streams and the 150 mm determination for adult fish is an average, based on observations of maturity of fish over decades. While not all life history data has been collected in Silver King Creek basin, it has been collected in other Paiute cutthroat trout populations. Due to the threatened status of the fish, and low population numbers until recent years, Agencies have been reluctant to conduct studies that required the sacrifice of fish, such as fecundity, meristics, and feeding studies. Meristics analysis, in general, has been replaced by analysis of genetic markers using fin clip samples from fish. Fin clip samples have the distinct advantage of not requiring sacrifice of Paiute cutthroat trout. Genetic markers can also accurately pinpoint hybridized fish.

2-53

See response to Comment 1-34.

2-54

Unforeseen incidents are possible on any project of this nature. Accordingly hazardous materials are subject to numerous Federal, state, and local laws and regulations intended to protect health, safety, and the environment. The major Federal, state, and regional Agencies enforcing these regulations include:

- U.S. Environmental Protection Agency (USEPA) licenses the use of rotenone for fisheries management.
- Lahontan Regional Water Quality Control Board (RWQCB) issues a National Pollutant Discharge Elimination System (NPDES) permit with conditions that must be followed to protect beneficial uses of water quality.
- U.S. Forest Service issues a permit for pesticide application.
- Alpine County Health and Human Services Department

To comply with these regulations and permits and to minimize the potential for accidents, the USFWS and CDFG will prepare an implementation plan for the Silver King Creek treatment. Final implementation and neutralization plans will be completed in accordance with the timelines set forth in the LRWQCB NPDES permit. All project permits will be attached to the plan and available for reference. The plan would also include a contingency plan. Local regulatory Agencies enforce many Federal and state regulations through the Certified Unified Program Agency (CUPA) program. Accidental release of hazardous materials would be regulated by Alpine County Health and Human Services Department (http://alpinecountyhealthandhumanservices.com) and would require a public notification in addition to an emergency response.

The use of rotenone would be supervised by licensed applicators according to label directions and the MOU between CDFG and the Water Board. Transport of chemicals to the proposed treatment area would be addressed through preparation and implementation of spill prevention, contingency and containment plans; a site safety plan; and a site security plan (see Section 5.4.2.2, Water Resources, Porter-Cologne Water Quality Act and Rotenone Policy). The Agencies have applied for a project-specific NPDES permit for rotenone application. The NPDES permit for the proposed Action would outline receiving water limits applicable to rotenone projects as contained in the Basin Plan. It would also require water quality monitoring to verify compliance with receiving water limits within the project area and in downstream waters both during and after the treatment.

Chapter 3 (Project Description) in the EIS/EIR describes addition precautions including qualifications of personnel and water quality monitoring of surface water and sediments. Chapter 3 also describes the types of equipment that will be used to dispense the treatment chemicals and the required monitoring. The equipment used to apply rotenone has undergone technological improvements and is less prone to inadvertent spills.

2-55

Section 5.3 (Human and ecological health concerns) in the EIS/EIR discloses and analyzes human and ecological health concerns associated with the use of rotenone and potassium permanganate. The screening-level ecological and human health risk assessment conducted for the proposed Action can be found in Appendix C in the EIS/EIR. In addition, as described in Section 5.4.2.2 (State), a spill prevention plan will be prepared and implemented by the Agencies as required by the Water Board Rotenone Policy.

Language in Chapter 4 (Hazards and hazardous materials) in the EIS/EIR that states hazardous materials will not be transported has been deleted. Chapter 4 (Hazards and hazardous materials and Hazardous materials spill) in the EIS/EIR explains that no stand-alone Hazards and Hazardous Materials section was prepared because many of the criteria in the CEQA Guidelines do not apply and the other criteria are addressed by regulations and precautions required by the Rotenone Policy including a spill prevention, contingency, and containment plan. Final plans will be completed in accordance with the timelines set forth in the LRWQCB NPDES permit.

See Master Response F and response to Comment 1-14 regarding past rotenone projects and lessons learned.

2-56

The Agencies acknowledge that previous studies have revealed the mass transport of airborne pesticide residues from intensively farmed regions of the California Central Valley into the Sierra Nevada. Further, the Agencies acknowledge that combinations of pesticide residues can pose an increased risk to non-target organisms due to additive or synergistic effects. However, the studies referenced in the comment are limited in geographic scope and cannot be used to infer with certainty the presence of persistent pesticide residues in water or sediment in Silver King Creek. For example, the LeNoir et al. study (1999) cited by the commentor examined the transport of airborne pesticide residues into the western slope of the Sierra Nevada. Further, the author's finding reflected that pesticide residues in Sierran waters "declined significantly" above an elevation of 2040 meters. The Silver King Creek project area is located on the eastern Sierran slope at an elevation of up to 2925 meters. Additionally, the LeNoir study focused on a region of the Sierra Nevada that is immediately to the east, and in the pathway of prevailing winds, of the southern San Joaquin Valley. The southern San Joaquin Valley receives the highest annual use of agricultural pesticides in the state of California. The Silver King Creek project area is to the west of the Sacramento Valley, a region that receives much fewer agricultural pesticide applications. It would be incorrect to assume that the findings of the LeNoir study can be directly applied to the Silver King Creek project area.

The Agencies acknowledge that the synergist PBO is readily found in surface water sampling programs. These findings, however, are generally limited to sampling programs near suburban or urban waterways where PBO contamination likely results from homeowner pesticide use or other, non-pesticide pollution sources. This is likely the case with the Woudneh and Oros study (2006) referenced by the commentor. This study involved PBO detections in urban waterways in the San Francisco Bay Area and cannot be used to predict PBO concentrations in the Sierra Nevada. Further, because PBO residues are short-lived in water (water half life of 8.4 hours) and relatively mobile in the soil or sediment, it is not likely to be persistent in the Silver King Creek environment, in spite of past uses of the PBO-containing Nusyn-Noxfish by CDFG. The lack of persistent PBO residues in Silver King Creek would make concerns regarding its synergistic potential with the proposed use of CFT-Legumine unfounded.

2-57

See response to Comment 1-37.

2-58

The Agencies used Nusyn-Noxfish® in 1991 through 1993. Nusyn-Noxfish® contains the synergist piperonyl butoxide (PBO). The concentration of formulation used was 1.0 ppm of the formulated product (25 ppb active ingredient rotenone) for the first two years of the project (1991 and 1992). The third year of the project (1993) the formulated concentration of Nusyn-Noxfish® used was 0.5 ppm (12.5 ppb active ingredient rotenone) due to cold water temperatures and the concern for maintaining the greatest efficacy of neutralization. While 1993 was effective at the lower concentrations the proposed Action calls for the use of non-synergized formulation Noxfish® which allows for a lower concentration of formulated product (0.5 to 1.0 ppm) the concentration of the active ingredient rotenone would remain at 25 ppb active ingredient rotenone. Thus, the statement of using lower rotenone concentration than have been used in the past on page 5.3-11 was a misstatement and has been corrected.

After additional review, the Agencies propose not to use Nusyn-Noxfish® due to PBO and questions that the formulation has possible greater toxicity to macroinvertebrates (Finlayson et al. 2010). Therefore the Agencies propose to use CFT Legumine™ or Noxfish® as rotenone formulations for use in the project.

2-59

See Master Response D and the response to Comments 1-11 through 1-17. No non-native fish would be moved as part of the proposed Action.

2-60

The commentor suggests that the Agencies are managing a single species at the expense of all other species in the stream. However, the objective is to restore a native species while minimizing impacts on the aquatic community. The Agencies are pursuing their mandate to recover Paiute cutthroat trout pursuant to the ESA and the Paiute cutthroat trout Recovery plan.

The commentor suggests that application of rotenone would result in long-term changes (at least 6 years) in the structure and function of the biological community. See response to Comments 1-24, 1-50, 2-2, 2-20, 2-11, and others. The Agencies cannot determine ahead of time precisely how long it will take a stream to recover from a rotenone treatment. The Rotenone Policy requires recovery within two years (LRWQCB 1995). Individual species may take longer to recover.

Rotenone treatment may eliminate some species as disclosed in Section 5.1.4.2 (Impact AR-1) in the EIS/EIR. However, Section 5.1.1.3 (Benthic macroinvertebrates) in the EIS/EIR describes how it may not be possible, even with years of data collection, to determine whether this would occur or did occur because the complete species inventory needed to make this determination would take years to complete and is beyond the scope of the EIS/EIR, which is to identify, analyze and disclose impacts, determine their significance and propose mitigation. See Master Response B regarding conducting a species inventory.

The Agencies agree that the Clean Water Act protects existing uses in waters of exceptional quality. See response to Comments 1-50, 1-51, 2-20, 2-54, and others. The proposed Action will comply with the Water Board Rotenone Policy and thus with the Clean Water Act.

Please see Master Response D regarding Alternative 3 and alternative physical fish removal methods and the response to Comment 1-38 regarding the presence of an impermeable barrier to upstream fish movement. In addition, please see the response to Comment 1-33 regarding genetic differences between Lahontan cutthroat trout and Paiute cutthroat trout. Finally, please see Master Response A regarding general opposition to the project.

COMMENT LETTER #3

May 3, 2009

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Re: Comments/ Draft Environmental Impact Statement/
Environmental Impact Report (EIS/EIR) for the PAIUTE CUTTHROAT TROUT RESTORATION PROJECT, Carson-Iceberg Wilderness, Humboldt-Toiyabe National Forest, Alpine County, CA.
ROTENONE POISONING IN THE SILVER KING CREEK WATERSHED.

I am filing these comments on this Draft EIS/R on behalf of myself, as a public citizen in the public interest and as a member of Friends of Silver King Creek, a regional public interest unincorporated nonprofit organization based in northern California. Members of Friends of Silver King Creek depend for their health, culture, education, recreation, and well being on the preservation and protection of central Sierra Nevada wilderness areas and all the species that live within them. Our membership is concerned about the effects of pesticides and other toxic chemicals and activities undertaken by the U.S. Forest Service, the U.S. Fish and Wildlife Service, and the California Department of Fish and

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COMMENT LETTER #3

Game in which pesticides are used, and have a special concern for the application of pesticides in wilderness areas.

I have filed comments on this same project in past years, including scoping comments, and Draft and Final EA/Negative Declaration comments. I have hiked and backpacked in the area and am familiar with the terrain and the geography. I am a resident of South Lake Tahoe, and am also quite familiar with the similar terrain and geography of the Upper Truckee River, whose connection to this project will be explained in comments below.

I include by reference each of my comments to the Lahontan Regional Water Quality Control Board, the USFS- Humboldt-Toiyabe Region, the California State Water Quality Control Board, and the California Department of Fish and Game.

I appreciate the opportunity to comment.

Laurel W. Ames

ISSUES OF SIGNIFICANT CONCERN

Failure to Analyze the Claim of Historic Habitat Results in False Basis for Project

The Recovery Plan repeated and adopted the theory from the pervious Environmental Assessment that fish management in Silver King Creek (SKC) began around 1912 and here is stated authoritatively that the specific section of the SKC below the Llewellyn Falls was the historic habitat of the Paiute Cutthroat Trout. (Section 1.7) (PCT) and repeated often in document..

The Draft EIS/R repeats that claim as a fact (Section 1.7) and uses it as a screen to evaluate the No-Action alternative, e.g. "…the No-Action alternative would fail to implement the Revised Recovery Plan (USFWS 2004) and Paiute cutthroat trout would not inhabit its historic range and would be vulnerable to……possible extinction." (Section 1.7)

The Draft EIS/R assumes from the Recovery Plan that what was first reported anecdotally by sheepherders or ranchers in 1912 and the site of the fish later named in 1933 by a Stanford professor is the historic basis of this fish's habitat. That, in itself, is a shocking cultural assumption that ignores thousands of years of history of the people who first lived in the eastern Sierra.

The claim that is the foundational premise of this project, that the section of SKC below the Llewellyn Falls is THE Paiute Cutthroat Trout's historic habitat, is founded on recent history, not on an acknowledgment of the history of the first inhabitants of the Washoe territory

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COMMENT LETTER #3

In order to claim that the habitat to be poisoned is actually the historic habitat, the document had to ignore the role of the Washoe people as the first people in the Washoe territory and their role in the management of fish in the upper reaches of the drainages of the Walker R, and Carson R, including the SKC. Unfortunately the claim of the historic reach is the foundational rationale provided for this project.

However, fish biologists in the eastern Sierra are well-versed in documents and stories that remind us that over time in the past 5,000 to 8,000 years, the Washoe were farming fish. (pers. comm, Craig Oehrli, fish biologist, LTBMU). Impassable falls, barriers, etc were no match for Washoe people, as they moved fish to where they set up encampments in high Sierra meadows, at lakes, and along creeks, rivers and marshes. The Washoe knew how to propagate fish. (pers. comm, Richard Vacirca, fish biologist, LTBMU).

Observations of grinding rocks in the SKC watershed are indicators of Washoe presence, as well as general acknowledgement of the Carson and Walker River watersheds as important places in Washoe history. The EIS/R authors are referred to the UNR library and the Nevada State library to review the anthropologic and ethnographic records of the Washoe and the management of fish.

The Final EIS/R must analyze the historic and cultural resources of the SKC and disclose the likelihood that whatever fish were reported in SKC in 1912 and 1933 had been transported, hybridized, and otherwise substantially altered from even earlier forms for thousands of years before the white miners and ranchers ventured into the SKC.

Once the anthropologic and ethnographic history of the native tribes is included in the analysis, the historic range of the PCT will be seen as irrelevant or, at least, defined with significantly less certainty.

The Final EIS/R must delete references to a specific historical habitat and acknowledge that the historic habitat is generally in the Silver Creek watershed and the specific range is unknown.

3-1

Hyperbole is not an analysis nor an evaluation.

"The survival of a species is at stake" (EISR 3.1.3) That conclusion is derived from the Recovery Plan, but does not explain how each of the other nine areas of sustaining PCT habitat are going to fail, thereby causing the final termination of this sub-species if the 9.1 miles of new habitat is not added.

The Final EIS/R must abandon hyperbole and explain how each of the hazard theories impact the overall populations in a such a manner that the sub-species fails to survive, including, cumulatively, all of the various locations of the PCT in SKC as well as the out-of-basin locations of the fish.

3-2

3

COMMENT LETTER #3

Confused Reasoning is not an analysis nor an evaluation – Cost Effectiveness is Referred to but not Analyzed.

Section 3.1.7 Cost-effectiveness is named as one of the second set of criteria for ranking options and selecting the desired option. However, the analysis fails to perform a cost-effectiveness screen, instead declaring that "..overall cost **and** effectiveness was used as a balancing criteria in comparing options that were approximately equal in effectiveness or environmental impact." What does that sentence mean?

Cost-effectiveness does not refer to cost on the one hand and project effectiveness on the other. It refers to an analysis that clarifies which alternative is more effective in relation to its costs. And, while promised in references to other sections, and appendixes, there is no cost data, no effectiveness data, no cost-effectiveness comparisons, and no indication of the analyses results for the alternatives. NEPA generally requires that any cost/benefit analysis prepared for the project be incorporated into or attached to the EIS.

In a cursory review, it appears that the preferred alternative would prove to be the highest cost, given up to 50 personnel (Section 3.2.2.3) for seven working days (Sec 2.7) plus overtime, plus travel – including official and unofficial vehicle costs, plus agency-supplied food and drink, plus pack animal support for the unidentified number of gallons of liquid poison, plus generators and gasoline, and numerous pieces of equipment and personal gear, all for each of the projected three years. The document even reveals that a second poisoning could occur in one year, resulting in another increment to be added to the initial estimates. The electroshock and gill netting alternative appears to be substantially less costly and clearly less disruptive of the wilderness area. 3-3

The Final EIS/R must disclose the full and actual carefully estimated costs of each alternative. The effectiveness of each alternative has been disclosed, although the alleged effectiveness of Alternative 2 appears to have been understated in order to support the preferred alternative. That issue will be addressed later in these comments, but should be taken into account in the cost-effectiveness analysis.

ALTERNATIVES

Failure to Fairly Analyze Alternatives
CEQ Forty Questions: 5b

NEPA Section 1502.14(b) specifically requires "substantial treatment" in the EIS of each alternative including the proposed action. Here the proposed action and the preferred alternative prepared by the federal agency are the same and the section is relevant.

The EIS/R document focuses on the beneficial and adverse impacts of poisoning, reasoning that the 2004 Recovery Plan is the project. But, the Recovery Plan recommends restoration of the fish, and does not recommend poisoning as the solution. However, the two agencies, which have been involved in poisoning or planning for poisoning in this basin during the past 45 years, determined that a three year schedule 3-4

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was required (Sec 3.1.2) and concluded that poisoning was the only alternative that met that schedule. Therefore, the foregone conclusion was that the EIS must frame the arguments as poisoning vs not-poisoning. Due to this historic agency bias, the document fails to attain the "substantial treatment" of alternatives required in NEPA 1502.14(b) for each alternative. Instead, it focuses primarily on the impacts of the preferred poisoning alternative and gives short shrift to the two non-poisoning alternatives.

If your only tool is a hammer, everything looks like a nail.

The Final EIS/R must clearly analyze the two other alternatives (1 and 3) in terms of the fish , macroinvertebrate populations, frogs, toads, insect-eating birds, and whether the fish will continue to survive, as is the recommendation of the Recovery Plan, given the factors in the two other alternatives. The comparison that is needed is that of the cumulative impacts of each alternative on the SKC ecosystem, not whether poison is faster. Speed is only relative for a fish that for 5-8,000 years has survived fire, landslide, at least one known 150- year drought (1200-1350 est), fish management by the Washoe, and to date, fish management by the fisheries agencies.

3-4 continued

Failure to Analyze the Effects of the No-Action Alternative, in Relation to Recovery of the Fish.

CEQ Forty Questions: 3

NEPA Section 1502.14(d) requires the alternatives analysis in the EIS to "include the alternative of no action." This Draft EIS/R reviews the potential for the No-Action Alternative to not attain the alleged benefits of poisoning, but does not analyze the potential for the No-Action Alternative to provide a stable habitat for the fish, while guaranteeing the benefit of protection of the macroinvertebrates, frogs, toads, and birds that rely on the aquatic insects, as well as not disturbing a wilderness area with three years of poisoning, warning signs regarding poison to the public, transporting gallons of poison into the wilderness, transporting gasoline, transporting and operating motorized generators and augers and the numerous opportunities for hazardous waste spills of poison, neutralizer and gasoline, all in support of up to 50-persons in a seven day assault on the wilderness. In addition, at no time in this document are the non-poison alternatives compared to the alternatives in a favorable light, except when forced to select the environmentally superior alternative.

3-5

The Final EIS/R must, under the" substantial treatment" rule of NEPA 1502.14(b), accurately assess and explain all the benefits of the No-Action alternative.

NEPA Section 1502.14 (d) states "The second interpretation of "no action" is illustrated in instances involving federal decisions on proposals for projects. "No action" in such cases would mean the proposed activity would not take place, **and the resulting environmental effects from taking no action would be compared with the effects of permitting the proposed activity** [emphasis added] or an alternative activity to go forward."

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Again, the focus on poison as the only solution obscures the vision of this Draft EIS/R document and thus it fails to thoroughly analyze the benefits of not-poisoning, or the potential for ongoing sustainable populations of the fish in the 20.9 miles it currently inhabits.

The Final EIS/R must analyze, not just state, the benefits of not-poisoning and the potential for ongoing sustainable populations in the PCT's current habitats.

3-5 continued

Failure to Fully Analyze the Combined Physical Removal Alternative (Alt 3)

Here the agencies assume that there is no good that will come of not poisoning, and declares numerous reasons throughout the document that this is so. For example, in Draft EIS/R PCT Recovery Section 1.5 Alternatives Considered and Proposed Action, and repeated throughout the document, the document states that "the method [electroshocking and gill netting] could have low efficiency in a rocky stream environment". Nowhere in the document is this discussed in more detail. What is the measure of efficiency? How is it applied? Where is the evidence? Concluding a fact of low efficiency is not an analysis.

In fact, in the Lake Tahoe Basin, the Forest Service LTBMU is currently conducting electroshocking and gill netting to remove planted Brook trout in a rocky stream environment. – the upper Upper Truckee River covering 17.25 miles. The project objective is to restore the Lahontan cutthroat trout.

The Upper Truckee project (attached) lies about 30 miles as the crow flies from the Silver King Creek, has the same geomorphic structure of glacier-sculpted valleys, and similar late season base flows in the creek/river. The USGS reports UTR average flows are 16 cfs in August and 10 cfs in Sept. SKC average flows are 15.1 cfs in Aug, and 10.9 cfs in September (USGS Water Data for Nevada [includes Lake Tahoe] National Water Information System).

The Final EIS/R must provide evidence for conclusive statements. If the non-chemical alternative is effective in the Upper Truckee River, a river that is more rocky, the document must explain why the non-poison method is not effective in SKC. The Final EIS/R must provide clear and accurate explanations of the differences.

3-6

Failure to Analyze Historic and Cultural Resources in the **Environmentally Preferable Alternative.**

CEQ 40 Questions: 6a

NEPA Section 1505.2(b) requires that, in cases where an EIS has been prepared, the Record of Decision (ROD) must identify all alternatives that were considered, ". . . specifying the alternative or alternatives which were considered to be environmentally

3-7

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preferable." The environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in NEPA's Section 101. Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources. [Emphasis added].

The Question 6a Answer is specifically included in this set of comments on the Draft EIS/R as a notice to the federal agency (Fish and Wildlife Service) that NEPA is about more than the ESA: NEPA demands that the environmentally preferable alternative is that "which best protects, preserves, and enhances historic, cultural, and natural resources." While the Draft EIS acknowledges that the no-action alternative is the environmentally preferable alternative, the selection of the Recovery Project has narrowed the focus of the agency in a highly biased manner against the environment, cultural resources and natural resources and toward more poisoning, resulting in a comparison to poisoning, rather than to the beneficial effects on the natural resources of the no-action alternative.

The Draft EIS/R is remiss in not providing a substantial section on the history and role of the Native American Washoe tribe regarding the thousands of years they managed fish in the eastern Sierra and high deserts.

The Final EIS/R must step back from its blatant bias for poisoning and fully analyze each alternative as the alternative benefits all the cultural, historical, and natural resources as required by NEPA.

3-7 continued

Failure to Correctly Analyze the Speed of Implementation of Alternatives

Accurate information is critical to a credible analysis of Alternatives. While the document states that the preferred poisoning alternative (#2) will take three years (Sec 1.5), the analysis claims that Alternative 3 will take 10 years to electroshock and gill net 9.1 miles. (Sec. 3.2.2) Yet, an equivalent restoration project in the Upper Truckee River (project description attached) is projected to take 2 seasons to electroshock 8.5 miles in Phase II, using 4-5 crews of two, plus volunteers.

3-8

The calculations in Sec 3.2.3.2 are interesting, especially the calculation that totals 72 days of work for Alternative 3. The equivalent number of days for Alternative 2, based on information in the Draft EIS/R, would be 1,050 days. Clearly an actual formula is required to disclose the mathematical process and result for all three alternatives. In addition, while poisoning cannot use volunteers due to training requirements, electroshocking and gill netting are easily accomplished by volunteers at significantly reduced cost. The Upper Truckee project expects help from the Sierra FlyCasters, CalTrout and Trout Unlimited. As these groups are also supporters of the PCT restoration project, the Final EIS/R can fairly safely include those volunteers in its calculations of work force and speed of implementation of Alternative 3.

3-9

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COMMENT LETTER #3

Given that the agency has been poisoning off and on in various parts of Silver King Creek and its tributaries for the past 45 years, three years in the life of a 5,000 year old fish is infinitesimal. These fish have now been "unprotected by the agencies" for 16 years without incident. 3-10

The final EIS/R must compare the three estimates of total hours and days required to complete the respective alternatives, using accurate information and transparent formulas. The document must also state the exact need for speed, in relation to all of the impacts on the entire ecosystem. 3-11

Failure to Analyze Technical Feasibility of the Alternatives
CEQ 40 Questions 5b

NEPA Section 1502.14(b) notes that "The degree of analysis devoted to each alternative in the EIS is to be substantially similar to that devoted to the "proposed action." Section 1502.14 is titled "Alternatives including the proposed action" to reflect such comparable treatment. Section 1502.14(b) specifically requires "substantial treatment" in the EIS of each alternative including the proposed action.

The EIS/R fails to analyze the comparisons between the alternatives as to the technical feasibility to implement the project. In Section 3.1.4 the document states that "the technology must be technically and logistically feasible to implement" and determines that the criteria are

- number of workers,
- remoteness of area, and unpublished site-specific data and reports regarding
- habitat types,
- stream dimensions,
- fish density.

3-12

The No-Action alternative is clearly the most technically feasible, as well as the least expensive and should be assessed in each of the above categories.

As to Alternative 3, the experience of the FS-LTBMU in the LCT Upper Truckee River Restoration Project is instructive.

- Numbers of workers. (Sec 3.14) The project requires ten Forest Service personnel in five teams of two – one to carry and use the backpack electroshocker and one to carry and use the gill netter. These teams are joined by volunteers.
  The missing comparison with the poisoning alternative is that a much bigger crew is required to horse pack in equipment, liquid poisons, motorized augurs, generators, gasoline, camp site gear for up to 50 people, personal gear and food for nine days (or seven working days if the crew leaves en masse for the weekend) for up to 50 people.. No volunteers are used in the poison alternative due to the training requirements to handle the poisons, while volunteers are encouraged and recruited for the non-poison method.

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- Remoteness.(Sec 3.14) The Draft EIS/R document cites remoteness as a factor in the screening that produced the poisoning alternative. Silver King Creek is the less remote, in comparison to the Upper Truckee project, as the central section of the proposed SKC project stream area is within 3.3 miles of the trailhead. The lower Meiss end of UTR project begins 4 miles from the closest trailhead. Phase II begins 6.5miles from the closest trailhead.

3-12 continued

The two streams are remarkably similar in almost all measures.

Given that the CDF&G agency has been poisoning off and on in various parts of Silver King Creek and its tributaries for the past 45 years, the ten-year window predicted for the non-chemical treatment is meaningless in comparison.

Failure of the Alternatives to Adequately Analyze the Impact on Wilderness Values of the Implementation of the Poison Alternative in Relation to the Other Two Alternatives

The Draft EIS/R notes that the Wilderness Act regulates uses in the wilderness in order to protect wilderness values "Human uses such as recreation are allowed but are subordinate to the higher purpose of maintaining wilderness values of 1) outstanding opportunities for solitude, and 2) the ability of natural processes to operate free of human influence". (Sec. 2.2 DEIS/R)

Forest Service Policies FSM 2100 and FSM 2300 as quoted in the document states that pesticide use and motorized equipment use in designated wilderness areas can occur only when necessary to restore significant values within the wilderness, and to base actual use on analyses of effectiveness, specificity, environmental impacts, economic efficiency and human exposure and that motorized equipment use in designated wilderness areas may occur when an essential activity is impossible to accomplish by non-motorized means because of such factors as time or season limitations, safety, or other material restrictions. (Sec 2.4).

3-13

The document concludes the preferred alternative meets the above requirements to deserve an exemption from the Wilderness Act. However Alternatives1 and 3 have not received the required "substantial treatment" in the Draft EIS/R in terms of their impacts on the wilderness values of solitude and the ability of natural processes to operate free of human influence. (Sec. 2.4.)

The Draft assumes that the USFS will grant an exemption to the use of motorized equipment and the use of a pesticide in a wilderness and that allowing an excessive number of people in a group that exceeds this wilderness standard "will be authorized" for the poisoning alternative (Sec 3.2.2.3) The failure to analyze the impacts of the other two alternatives on wilderness values is another indicator of the bias of the authors, and their inability to grasp that the other two alternatives require equal attention in the analysis.

3-14

The Final EIS/R must analyze and compare the impacts on wilderness values (as above) of the three alternatives.

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COMMENT LETTER #3

ISSUES OF IMPORTANCE

Failure to Analyze the Choice of SKC for Restoration Expansion as a Shield to PCT Extinction Caused by Catastrophic Fire and Other Disasters

"By expanding the populations and range of the species, the proposed Action would also increase the probability of long-term viability and reduce threats from genetic bottlenecking and stochastic events". (DEIS/R Sec 2.2)

The multiple references to the likelihood of a species wipe-out due to stochastic events like catastrophic fire (Sec 1.7 et. seq.) is used extensively to justify poisoning in the SKC, but is a puzzling concept. The Silver King Creek is a forested watershed until its uppermost reaches at around 10,000 feet. (See Google Earth). The proposed restoration area is in the lowest reaches, generally in the most heavily forested areas. If there were a catastrophic fire, the more dense forests in the lower elevations would be the more likely to carry a catastrophic fire.

If it is an important rationale for restoring a fish to escape extirpation by catastrophic fire, as stated by the Draft EIS/R numerous times, this element would lead a decision maker to undertake restoration in an area that is least likely to carry a catastrophic fire. Here, the decision is to extend the habitat by 9.1 miles into the area of highest fire danger.

The Final EIS/R must explain how the 9.1 miles alleged historic habitat is best for the fish in terms of being more protected from catastrophic fire, as well as floods and landslides, than other potential sites outside of this particular basin, or, conversely, how extending the habitat in one small basin (Silver King) reduces the likelihood of a catastrophic fire, flood, and/or landslides to harm the fish.

Further, the Draft EIS/R lists various events (catastrophic fire, floods, landslides) and states that the survival of the species is at stake (Sec 1.7). The concept of the biblical proportion of these various events occurring all at once or sequentially, coming together in one giant cataclysm, so that the eastern Sierra Nevada, ranging from Fresno County to the Silver King basin, would all be swallowed in flames, floods, and landslides such that the PCT habitat from Fresno County to Silver King Creek (100 miles est.) would be wiped off the face of the earth is dramatic, but not explained.

The Final EIS/R must disclose how the threat of these natural events, occurring together or singly, in one PCT population area or all, events which the PCT has presumably survived for some 5 to 8,000 years to date, would suddenly cause mass extinction of the PCT.

3-15

Failure to Disclose the Ingredients in the Alternative Poison Formulation and to Compare That With the Current Poison Formulations Proposed.

The Draft EIS/R states (sec 2.3) that "CFT Legumine™ is a recently developed "alternative" formulation that contains less potentially objectionable 'inert' ingredients."

3-16

10

COMMENT LETTER #3

The 2004 Environmental Assessment on this project disclosed the earlier formulations and their objectionable and highly toxic inert ingredients, used as synergists or accelerators.

The Final EIS/R must disclose the new ingredients in comparison to the old. Further, the Final EIS/R must disclose the presence of endocrine disruptors in the new formulation. And the document must disclose the amount of time the new ingredients are effective as well as the length of time they survive in half-life, and the time until they vanish entirely. The analysis must disclose these factors, adjusted for cold moving water. The document must disclose the number of miles downstream that the endocrine disruptors will migrate. Also, the document must disclose the effectiveness of the potassium permanganate station to neutralize endocrine disruptors as well as the synergists.

The Final EIS/R must also disclose, for each alternative, the impacts on the ecosystem of the high likelihood, based on past experiences, of a failure to control the fish removal process.

3-16 continued

Failure to Disclose the Potential for Hazardous Material Spills and the Escape of Poisons Downstream and Failure to Analyze Impacts of Spills Among the Three Alternatives.

Lahontan Regional Water Quality Control Board files are replete with reports of spills, frozen equipment, six month retention of poison in nearby Wolf Lake, downstream fish kills when the neutralizing station failed, and more. There will be substantial opportunity to spill liquid rotenone (including all the inert but toxic ingredients in whatever formulation is selected, or a combination of two or three), liquid potassium permanganate, and gasoline. Given past experience, the agencies would do well to explain these issues and their relevance in the alternatives analysis between the three alternatives.

Previous failures to control rotenone poisoning projects in this area and adjacent streams and lake are evidence that control is not guaranteed. See Lahontan files and previous comments on this project in the agencies' files for the lists of failures, by date, project and amount of inadvertent fish kills.

The Final EIS/R must disclose the past history of mismanagement and accidents regarding poisoning projects using hazardous materials in a wilderness area and report this in the alternatives analysis in relation to each alternative.

3-17

Failure to Disclose the Existence of Washoe Tribal Communities in both the Environmental Justice and Housing Sections

The Draft EIS/R includes Environmental Justice and Housing sections in the Chapters, as required. However, the document's Chapters ignore the existence of numerous Washoe Tribe communities, in both California and Nevada, including Woodfords, Stewart, Carson City, Dresslerville, Gardnerville, Sparks and Bridgeport, as well as the dispersed populations of Washoe along the eastern side of the Sierra Nevada. The Washoe Tribe are an important population in western Nevada – the former Washoe Territory. For the FWS, based in Reno, this failure is a significant omission.

3-18

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COMMENT LETTER #3

At the hearing before the Alpine County Board of Supervisors in 2003 Phil Stein of CDFG presented the same PCT project, and a Washoe Tribe member spoke against poisoning, citing the adverse effects of a previous project in Bridgeport. This testimony should have alerted the agencies to the presence of the Washoe Tribe population. 3-19

The Final EIS/R must disclose not only the true historic use of the Silver King Creek area, but also recognize that there are significant communities of Washoe in the nearby areas and must be included in the main body as well as in the Environmental Justice and Housing sections. 3-20

The Failure of Alternative 2 to Provide a Shorter Stretch of SKC to Poison by Installing the Neutralization Station at the Upper Barrier to Fish Passage.

The Draft EIS/R announces that the neutralization station will be near the Snodgrass Trail intersection with the SKC. This site is approximately two miles below the uppermost fish barrier as noted on the map in Figure 5.1-1.

Neutralizing 2 miles below the upper barrier causes two more miles of damage to the frogs, toads, macroinvertebrates and insectivore birds that is unnecessary and unwarranted. If the barriers are impassable by the non-native fish from which the project intends to protect the PCT, then there is no point in poisoning through the length of the barriers and destroying two more miles of stream habitat. 3-21

These two miles above the barriers are not intended to provide protected habitat or alleged to be historic habitat, and will not function as habitat for pure PCT. The two miles will be readily available at some time after poisoning to the non-native trout that are presumed to survive below the neutralizing station, providing the neutralizing station is functional throughout the poisoning event.

The Final EIS/R must analyze reducing the extent of the poisoned miles by moving the neutralizing station upstream to the uppermost fish barrier or explain why it is acceptable to poison an additional two miles of this stream.

The On-Again, Off-Again Decision to Poison Tamarack Lake: Necessary or Boondoggle?

The Draft EIS/R carries on the strange issue of whether to poison Tamarack Lake, a shallow lake whose intermittent outflow reaches Silver King Creek in wet years. The lake was unsuccessfully planted with hybridized fish before the last stream poisoning in 1989 or 1990, but has been reported fishless, despite numerous fishing and gill netting efforts. To poison a lake that has been reported fishless for the past 10 years is bizarre, as well as an apparent waste of time, effort and taxpayer's money. 3-22

The document promises to check for fish one more time before making the decision to poison, presumably sometime this summer. The results of that test and the decision must be reported to the public prior to the planned launch of the poison assault on the creek.

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RESPONSE

Comment Letter 3

Laurel Ames
Friends of Silver King Creek
May 3, 2009

3-1
See Section 5.1.1.3 (Paiute cutthroat trout) in the EIS/EIR, Master Response C, and response to Comment 1-8 regarding the historical range of Paiute cutthroat trout. The Agencies have no information regarding Washoe people moving Paiute cutthroat trout. See the response to Comment 3-7 below regarding the Washoe tribe.

3-2
See Section 5.1.1.3 (Paiute cutthroat trout) in the EIS/EIR, Master Response C, and response to Comment 1-8 regarding the historical range of Paiute cutthroat trout. See Section 5.1.1.3 (existing threats), Master Response A and C, and response to Comments 1-13, 1-32, 2-46, 2-48 regarding the risk of stochastic events.

3-3
The sentence in Section 3.17 will be corrected as follows:

> While cost alone was not used to screen out any technology or strategy, overall cost ~~and effectiveness~~ was used as a balancing criterion in comparing options that were approximately equal in effectiveness or environmental impact.

No cost data were promised by the EIS/EIR and none are required. However, the proposed Action/preferred alternative would provide the highest effectiveness with the lowest level of effort. The No Action alternative provided zero effectiveness and Alternative 3 would result in the highest cost with uncertain results.

The Agencies disagree with the commentors assessment that the proposed Action would have the highest cost. While no cost estimates are available for the alternatives please refer to Table 5.10-1 in the EIS/EIR that describes the number of personnel and the duration required for each alternative.

The commenter states that the physical removal (electroshock) alternative "appears to be substantially less costly and clearly less disruptive of the wilderness area." The EIS/EIR, however, makes clear that Alternative 3 would be anything but benign in terms of wilderness impacts. As described in Section 3.2.3 (Alternative 3: combined physical removal) and 5.7.4.3 (Alternative 3: combined physical removal) in the EIS/EIR, this alternative would require large crews over much of the summer over a period of at least 10 years. Further, the document describes the regimen the Agencies would need to follow year after year and with an uncertain outcome and with a high level of effort and cost.

Although the EIS/EIR will not disclose detailed costs, it will be clear on the effectiveness of the alternatives. However, the Agencies believe the effectiveness of Alternative 2 will be high given the low flow conditions in late summer and the potential to treat for a second year and third year if needed. If the commenter meant that the effectiveness of Alternative 3 was understated, then see Master Response D, which addresses the efficacy of electrofishing.

3-4

The Agencies do not agree that the EIS/EIR gave "short shift" to the other alternatives but rather exercised its responsibilities under NEPA, including a full and fair analysis of each alternative. Please see Section 3.1 (Alternatives development), Section 5.10 (Comparison of alternatives) and Appendix B (Alternatives formulation report) in the EIS/EIR, Master Response D, and response to comments 1-11 through 1-16 regarding analysis of alternatives. The EIS/EIR (Section 3.1.2 Speed of implementation) has removed reference to a three year schedule needed to remove non-native trout from Paiute cutthroat trout historical habitat.

3-5

Please see Section 2.2 (Objective/purpose and need for action) in the EIS/EIR and Master Response A regarding the purpose and need for the project. Sections 5.1.4.1, 5.2.4.1, 5.3.4.1, 5.4.4.1, 5.5.4.1, 5.6.4.1, 5.7.4.1, 5.8.4.1, and 5.9.4.1 (Alternative 1: no action) describe the environmental consequences of the No Action alternative; however, this alternative would not meet the purpose and need of recovery of Paiute cutthroat trout into their historical habitat. Additionally, Section 5.10 (Comparison of the alternatives) objectively presents the difference among alternatives.

3-6

Please see Master Response D regarding Alternative 3 and electrofishing.

3-7a

Chapter 4 (Scope of the analysis) in the EIS/EIR explains that historic and cultural resources are not addressed in detail in the document because the project area contains no known historic or cultural resources and that the proposed activities would be conducted on existing trails and campsites and within the creek itself.

See Master Response D and response to Comment 3-5 above which address the degree to which the EIS/EIR presents the beneficial aspects of Alternatives 1 and 3.

The Agencies do not agree that the EIS/EIR is biased toward chemical treatment. The document explains that the technologies for this type of project are few and that seasonal and hydrologic limitations are substantial. After considering all the technologies available, including technologies as unlikely as explosives, the Agencies found only two action alternatives to evaluate. After evaluating the impacts of each alternative and weighing and comparing the effects and benefits, the Agencies identified Alternative 2 as the environmentally superior alternative.

3-7b

The Agencies have not located specific information on the role of the Washoe tribe in managing fish in the project area for thousands of years. The comments suggest that the Washoe were "farming fish," which included activities such as "propagating" fish and moving fish to locations near settlements at lakes and along creeks and rivers.

Fish were an important resource to the Washoe people, but a comprehensive review of ethnographic sources on the Washoe did not identify any activities related to physically propagating fish or moving fish to areas close to settlements (cf., Lowie 1939; Price 1962, 1980; d'Azevedo 1963, 1986). On the contrary, it appears that the Washoe located settlements near water sources to take advantage of plentiful fish resources, which they primarily harvested in the spring. The Washoe also harvested other animal and plant resources by moving from one location to another as the seasons changed, taking advantage of

seasonally available resources in different ecological zones across the Sierra Nevada. Indeed, the Washoe subsistence calendar is divided into three "years": the fishing year, the gathering year, and the hunting year (Downs 1966).

The fishing year began in the spring to coincide with the spawning of fish. With the onset of summer and a decrease in spawning activity the Washoe moved away from lake, rivers, and streams to other areas to gather plant resources and hunt. The Washoe would not return to their settlements near rivers and streams until the fall for the piñon harvest.

In summary, ethnographic sources do not include information related to Washoe moving fish from stream to stream or propagating fish. However, the sources do include substantial information related to Washoe settlement and subsistence that highlights the strategic location of settlements near water sources to exploit fish resources in their natural habitats and seasonal movement across the Sierra Nevada to harvest resources in different ecological settings. Consequently, the Washoe traditional pattern of resource acquisition is to go to the resource and harvest it when it is readily available rather than semi-domesticating resources by relocating them close to settlements.

3-8

See Master Response D and response to Comments 1-12, 1-17, 1-18, 2-5, 3-6, 3-12, and 7-6 regarding a comparison between Silver King Creek and the Upper Truckee River project.

3-9

Time estimates for electrofishing and rotenone treatments are based upon extensive experience within the Agencies conducting electrofishing operations for both fish sampling and fish eradication purposes, and for rotenone treatments under a wide variety of environmental conditions. Table 5.10-1 has been revised to clearly show the personnel needs and time frame estimates for the alternatives.

Although use of volunteers can be an effective implementation tool, due to coordination and training issues, it would not be likely to reduce the amount of time to accomplish implementation.

3-10

See response to Comments 1-13 and 1-32.

3-11

See Section 3.2.3.2 (Fish removal) and Table 5.10-1 in the EIS/EIR and response to Comments 3-3 and 3-9 for additional explanation of the number of days required to complete each alternative. Alternative 2 is greatly expedited because it takes advantage of the creek's flows to disperse chemical to all parts of the creek. Under Alternative 3, crews must manually access every part of the stream using a low efficiency technique, greatly increasing the number of crews and days required to complete the work each year.

3-12

See response to Comment 3-5 regarding the No Action alternative. The Agencies agree that the No Action alternative as proposed is the least expensive. The No Action alternative does not include the use of methods or equipment that could be interpreted as "technology" nor does it consider transport of equipment, supplies, personnel, geographic limitations, or seasonal restrictions that would necessitate the need to "logistically" consider (Alternative 1: no action).

See Master Response D regarding electrofishing as a means of eradicating hybridizing species and the similarities between Silver King Creek and the Upper Truckee River. See Section 3.2 (Alternatives considered in detail for the EIS/EIR) in the EIS/EIR and response to comments 3-3 and 3-9 regarding a comparison between the numbers of people needed to implement each alternative.

3-13

In addition to Chapter 2 (Introduction) please see Sections 5.7.4.1 (Alternative 1: no action), 5.7.4.2 (Alternative 2: proposed Action), and 5.7.4.3 (Alternative 3: combined physical removal) which discuss impacts on wilderness character and values under each alternative.

3-14

See response to Comment 3-13 regarding wilderness.

3-15

Please see Section 5.1.1.3 (existing threats) in the EIS/EIR, Master Response C, and response to Comments 1-32, 2-46, 2-48 and 5-4 regarding the potential for disturbance in the Silver King Creek watershed.

3-16

See Section 5.3 (Human and ecological health concerns and Appendix C (Ecological risk assessment) in the EIS/EIR and response to Comments 1-35 and 1-36 regarding the rotenone formulation ingredients and their properties. The Agencies assume the respondent is referring to CFT-Legumine™ when referring to the "new formulation." The Agencies have no information that indicates that the primary formulation constituents of CFT-Legumine™ are endocrine disruptors. A review of the available scientific literature and of lists of suspected endocrine disruptor chemicals by several public Agencies could find no listing that included CFT-Legumine™ formulation constituents. Additionally see Master Responses F and G regarding past treatments.

3-17

Please see Master Responses F and G and response to Comment 2-54 regarding past treatments.

3-18

Section 5.9 (Environmental Justice) in the EIS/EIR addresses the racial and ethnic composition of the project area by county. For example, it states that in Alpine County "the other racial groups, combined, represent 30% of the local population, led by American Indians/Alaska Natives (17%) and Hispanics/Latinos (9% of the total population). In Mono County, the other racial groups, combined, represent 29% of the local population, led by Hispanics/Latinos (24%)." The EIS/EIR describes the population by county and does not provide a breakdown by town or present the locations of dispersed populations of individual groups.

Nevada populations were not described in the EIS/EIR because the adjacent Nevada communities are geographically (approximately 13 miles) and hydrologically (greater than 25 miles) separated from the project area.

3-19

The Agencies understand that a Washoe tribe member spoke against the project in 2003; however, the Washoe tribe supports the current proposal (see letter in Attachment 1).

3-20

See Section 5.9 (Environmental Justice) in the EIS/EIR and response to Comment 3-7 regarding the historic use of the area, and Comment 3-18 regarding the description of groups inhabiting Alpine and Mono Counties.

3-21

Please see Section 3.2.2.4 (Rotenone neutralization) in the EIS/EIR discussing the location of the neutralizing station. Appendix C (Section C.3.5) and Section 5.1.4.2 (Alternative 2: proposed Action) in the EIS/EIR discuss impacts from neutralization. This location was chosen because it is the first accessible section of stream downstream of the lowest barrier to safely transport and deploy the neutralization equipment and the potassium permanganate. It also provides the safest location to operate the neutralization station.

3-22

Please see Master Response H.

COMMENT LETTER #4

May 4, 2009

To: Robert D. Williams
State Supervisor
Nevada Fish and Wildlife Office
U.S. Fish and Wildlife Service
1340 Financial Boulevard, Suite 234
Reno, NV 89502
Fax (775) 861-6301

From: Ann McCampbell, MD
11 Esquila Rd.
Santa Fe, NM 87508
(505) 466-3622
DrAnnMcC@aol.com

Re: Comments on Draft Environmental Impact Statement (EIS) / Environmental Impact Report (EIR) for Paiute Cutthroat Trout Restoration Project, Silver King Creek, Humboldt-Toiyabe National Forest, Alpine County, California, March 2009

This project proposes to poison 11stream miles in the Silver King Creek basin with formulations of rotenone to eradicate unwanted fish and restock with Paiute cutthroat trout (PCT). The project area lies entirely within the Carson-Iceberg Wilderness.

I oppose this project for the following reasons:

1) There is no need for the project.

This project is not needed to "*save*" the Pauite cutthroat trout, since these fish already occupy more stream miles than they historically did. Although cloaked in ecological rhetoric, the true goal of the project is a recreational one, providing increased fishing opportunities to catch native fish in their alleged historic environment (even though no one knows for sure whether the project area even is the historic range of the PCT). 4-1

2) There are less-toxic ways to prevent fish transplantation.

The stated problem in the EIR/EIS is not that PCT are currently being threatened, but that there is concern that non-native fish could be transplanted into the population of pure Paiute cutthroat trout above Llewellyn Falls. Therefore, the EIR/EIS should have looked at options for how to prevent transplantation rather than only focusing on how to remove non-native fish below the Falls. Alternatives that should have been analyzed include aggressive public education programs aimed at discouraging anglers from transplanting fish, posting signs and guards as necessary near protected PCT populations to prevent reintroductions, and ceasing the stocking of non-native fish so there are less non-native fish available for transplantation. 4-2

1

COMMENT LETTER #4

3) The project violates the Wilderness Act.

Wilderness areas were established specifically to protect them from manipulation by humans, even well-meaning ones. The Wilderness Act states that wilderness areas are to remain "*untrammeled*" by man. The Forest Service Manual Title 2300 on Wilderness Management instructs staff to "*Maintain wilderness in such a manner that ecosystems are unaffected by human manipulation …*". This project clearly violates the Wilderness Act and Forest Service regulations because its specific intent is to manipulate the ecosystem.

While these types of fish poisoning products are of questionable value in general, and fraught with unrealistic goals and expectations, such as expecting a "total fish fill" and believing there will be no unintended consequences, these projects have absolutely no place in designated Wilderness Areas.

It is unacceptable to degrade aquatic ecosystems in Wilderness Areas, which is what fish poisons do by permanently altering the macroinvertebrate community, potentially eliminating rare and/or endemic macroinvertebrate species (one important goal of wilderness areas is to *protect* rare species), and harming amphibians, which are already in precipitous decline worldwide. 4-3

4) The project violates Prop 65.

The EIR/EIS correctly notes that three ingredients in the proposed rotenone formulations are on the Proposition 65 list of chemicals known to the State of California to cause cancer or reproductive toxicity (N-methyl-2-pyrrolidone, ethylbenzene and naphthalene) and that Proposition 65 prohibits the discharge of chemicals into California waters that are known to cause cancer or reproductive toxicity. It further states that state agencies, such as the California Department of Fish and Game (CDFG), are exempt from Prop 65 requirements and argues that it is, therefore, lawful to deploy the Prop 65-listed chemicals in this project. But this is not just a CDFG project. The U.S. Fish & Wildlife Service is a full partner (this is a *joint* EIS/EIR prepared for US FWS and CDFG) and the U.S. Forest Service is a cooperating agency. These two federal agencies are *not* exempt from Prop 65 and thus deploying the carcinogenic and/or reproductive toxins as proposed in this project would be a clear violation of Prop 65. 4-4

I incorporate by reference all other written and oral testimony I have previously submitted about this project to the U.S. Forest Service, U.S. Fish & Wildlife Service, California State Water Resources Control Board, and California Regional Water Quality Control Board (Lahontan Region). 4-5

Thank you for allowing me comment on this EIS/EIR. Please keep me informed of any actions or decisions made concerning this project.

2

RESPONSE

Comment Letter 4 — Ann McCampbell, MD
May 4, 2009

4-1
See Section 5.1.1.3 (Paiute cutthroat trout) in the EIS/EIR, Master Response C, and response to Comment 1-8 regarding the historical range of Paiute cutthroat trout. See Section 2.2 (Objective/purpose and need for action) in the EIS/EIR and response to Comment 1-44 regarding the purpose and need for the project. While Paiute cutthroat trout currently exist in more stream miles than they did historically, the habitat they do occupy is all outside its historical range and occurs in small, highly fragmented habitat which is not adequate for long-term persistence. See Section 5.1.1.3 (Threat of fragmented populations) in the EIS/EIR, Master Response C, and responses to Comments 1-20, 2-48, 2-51, 7-5, and 8-20 regarding habitat fragmentation.

4-2
Please see response to Comment 1-5.

4-3
Please see Section 5.7.2 (Regulatory setting) in the EIS/EIR regarding management activities that are permissible in the Carson-Iceberg Wilderness and Section 5.7.4.2 (Alternative 2: proposed Action) regarding impacts on wilderness values and character from the proposed Action. Additionally, please see response to Comment 1-24 regarding the loss of species from the treatment area.

4-4
See response to Comment 1-59.

4-5
All comments and testimony received by CDFG, USFWS, USFS, and the LRWQCB with regard to prior iterations of this project has been considered by the Agencies and will be part of the administrative record for this project. Comments and testimony submitted to other Agencies or to these Agencies with respect to other, unrelated projects has not been considered and will not be part of the administrative record unless it was also submitted in a timely manner to the Agencies with respect to this project.

COMMENT LETTER #5

April 22, 2009

Mr. Robert D. Williams
State Supervisor
Nevada Fish and Wildlife Office
U.S. Fish & Wildlife Service
1340 Financial Blvd. #234
Reno, Nevada 89502

Paiute Cutthroat Trout Restoration Project
California Department of Fish and Game
North Central Region
1701 Nimbus Road
Rancho Cordova, California 95670

Dear Mr. Williams and PCTRP,

Enclosed are my personal comments about the proposal to poison Silver King Creek in the Carson-Iceberg Wilderness Area and introduce Paiute Cutthroat Trout (PCT).

I oppose this request. My reasons for opposing this request are as follows:

1) I am opposed to the trammeling and human manipulation that is proposed in the Carson-Iceberg Wilderness Area. In my reading of the Wilderness Act such actions are not allowed. Wilderness is supposed to be uncontrolled by humans so that we gain so humility that we are not the most important creature in the world. 5-1

2) The reach of Silver King Creek that the PCT will be introduced has not naturally held these fish. There is no demonstrated biological or ecological need for this reintroduction. 5-2

3) I do not approve of using poison in wilderness and particularly since it will kill not only so-called undesirable fish but also native fish, salamanders, toads, frogs, mayflies, stoneflies, caddisflies, and other macroinvertebrates. The use of this poison is not targeted and is a general killer of most aquatic life in Silver King Creek. 5-3

4) The suggestion that a wildfire or landslide will destroy all areas with PCT is baseless. What is the actual risk, in percent per year, of this happening? This is wilderness and such disturbances, if they occurred, are appropriate and should not be looked upon as disasters but part of naturally functioning ecological processes. 5-4

5) I object to this blatant attempt to increase PCT so people can fish for them. Leave wilderness alone and do fishing related management outside wilderness where such activities are legal and allowed. 5-5

I appreciate this opportunity to comment. Thank you.

Sincerely,

Brandt Mannchen

Brandt Mannchen
5431 Carew
Houston, Texas 77096
713-664-5962
brandtshnfbt@juno.com

2

RESPONSE

Comment Letter 5

Brandt Mannchen
April 22, 2009

5-1
Please see Section 5.7.2 (Regulatory setting) regarding management activities that are permissible in wilderness and Section 5.7.4.2 (Alternative 2: proposed Action) regarding impacts on wilderness values and character from the proposed Action.

5-2
See Section 5.1.1.3 (Paiute cutthroat trout) of the EIS/EIR, Master Response C, and response to Comment 1-8 regarding the historical range of Paiute cutthroat trout.

5-3
See Sections 5.1.4.2 (Alternative 2: proposed Action) and 5.2.4.2 (Alternative 2: proposed Action) addressing impacts on aquatic and wildlife species, Master Response A, and response to Comment 5-1.

5-4
See Section 5.1.1.3 (Existing threats) in the EIS/EIR, Master Responses A and C, and response to Comments 1-32, 2-46, and 2-48 regarding stochastic events.

5-5
Please see Section 2.2 (Objective/purpose and need for action) of the EIS/EIR that describes the purpose and need for the project. The project is consistent with wilderness values as described in response to Comment 1-44.

COMMENT LETTER #6

Friends of Hope Valley
PO Box 431 Markleeville, CA 96120

May 1, 2009

Stafford Lehr, Senior Environmental Scientist (slehr@dfg.ca.gov)

California Department of Fish and Game

1701 Nimbus Road

Rancho Cordova, CA 95670

Dear Mr. Lehr,

Friends of Hope Valley remains strongly opposed to the use of rotenone to re-establish populations of Paiute Cutthroat Trout in the Carson Iceberg Wilderness on Silver King Creek above the confluence of Snodgrass Creek. We therefore support Alternative 1, no action, in the 2009 DEIR.

We question the priority of implementing this project now in this time of economic uncertainty. Expenditures necessary for this project seem misdirected in this time of housing foreclosures and rising unemployment. That the PCT now exist in more stream miles than ever historically obviates the need for additional habitat. 6-1

The use of rotenone in a wilderness is inconsistent with the wilderness act of 1964. Users have a reasonable expectation of clean water, healthy riparian zones and solitude and it is a violation of the public trust to so disrupt a wilderness 3 years in a row. 6-2

We remain concerned that residues of rotenone, the oxidizer potassium permanganate, and the VOC solvents will remain in the ecosystem for years. We remain concerned that discernable traces of these compounds will be present in the Carson River watershed and that they will come back to visit us when we eat the melons grown in Fallon. Everything that goes in the upper watershed ends up in the Carson Sink and considering that geologic events may not change that area for many thousands of millennia, we think you should be careful what you put in there. 6-3

1

COMMENT LETTER #6

As previously noted, we are concerned with the impact of rotenone on the aquatic ecosystem. Studies have shown that up to 12% of the benthic macro-invertebrates may never repopulate poisoned waters. Previous biotic sampling admits that rare, endemic or endangered species may not be detected before being wiped out. This alone is reason enough not to implement. 6-4

Indeed we question whether the State Water Board will even issue an NPDES permit for this project. If after spending huge amounts of money for environmental studies you find yourself without a permit the project will stall. Inevitable litigation will cost agencies and environmental groups untold sums of cash. 6-5

We again question the probability of success, citing Lake Davis as an example. Despite repeated attempts the Northern Pike are still there. We suggest that this will happen on Silver King also. The fish barriers of 8 and 10 feet in Silver King canyon are not sufficient to maintain genetic isolation during high water events. Artificial barriers will not survive the rigorous conditions in this canyon. 6-6

We feel strongly that the money available for this project could be used for restoration work elsewhere that would benefit more people in better ways. There are many areas that need attention and one only need look at CDFG lands in Hope Valley to see the need for ecosystem restoration. The cost benefit ratio for the PCT project is so narrow that it will barely be noticed. The fish already exist in viable populations. Think of what you could do Heenan Lake/Hope Valley areas with the money available for this project. 6-7, 6-8

It has become painfully evident in the last few years that the planet has limited resources and limited carrying capacity for what we put into it. We request that you use more care in protecting future resources and use your agenda to establish harmonious relationships between people and the environment. We therefore ask that you take no action in this project. Thank you. 6-9

Sincerely,

Debbi Waldear, James C. Donald, John Barr, Greg Hayes, Gay Havens,

Board Members

Friends of Hope Valley

Jdonald@gbis.com and dwaldear@gbis.com

2

RESPONSE

Comment Letter 6

Friends of Hope Valley
Debbi Waldear, James C. Donald, John Barr, Greg Hayes, Gay Havens
May 1, 2009

6-1
The appropriate Federal and state agencies must address numerous priorities, including employment and other issues that affect communities. However, the Agencies involved in this project are charged with protection and restoration of endangered species, which is a national issue. These efforts continue, as budgets allow, in both good and bad economic times. See Section 5.1.1.3 (Existing threats) and response to Comments 1-32, 2-48, and 4-1 regarding existing threats to Paiute cutthroat trout and the inadequacy of existing populations.

6-2
Please see response to Comment 1-57.

6-3
See Section 5.3 (Human and ecological health concerns and Appendix C (Ecological risk assessment) in the EIS/EIR and response to Comments 1-35 and 1-36. The formulation constituents of CFT-Legumine™ and Noxfish® are short-lived in aquatic environments. Even at their highest expected concentrations during the project period, no human drinking water standards will be exceeded. Section 5.4.4.2 (Alternative 2: proposed Action in the EIS/EIR indicates that the expected concentrations of all formulated rotenone constituents will be within the current drinking water standards of the Lahontan Regional Water Quality Control Board during the project period. There is no scientific information available to indicate that any of the chemical constituents will persist in, or downstream of, project area waters for more than two weeks after treatment.

6-4
Please see Master Response B and response to Comment 1-24. The Agencies cannot address the studies mentioned in the absence of specific citations. The Agencies agree with the Vinson and Vinson 2007 study (Appendix D) where they report results from 3 studies where some taxa were not found at the end of the post-treatment monitoring. Section 5.1.4.2 (Impacts of proposed Action on benthic macroinvertebrates) in the EIS/EIR acknowledges the unlikely possibility that species may have been lost from the prior treatment and may be lost as a result of the proposed Action.

6-5
As described in Section 2.4 (Permits and approval for the project) in the EIS/EIR, the California Department of Fish and Game will be applying for a NPDES Permit from the Lahontan Regional Water Quality Control Board. The Agencies are planning the proposed Action so that, if approved, it will meet all permit requirements.

6-6
Please see Master Responses F and G and response to Comments 1-14 and 1-22 regarding rotenone treatments in the Silver King Basin for further discussion of the use of rotenone on projects of this nature.

There are a number of examples of successful rotenone treatments that have eradicated undesirable fish from specific waters, such as eradications of northern pike from Frenchman Reservoir, Sierra Valley and Lake Davis and its tributaries in northern California and the elimination of white bass from Kaweah and Success Reservoirs in central California. Post-treatment monitoring of the 2007 Lake Davis Northern Pike Eradication Project has not detected any northern pike in Lake Davis or its tributaries (CDFG, unpublished data). Examples of successful fish eradication project with rotenone in high mountain stream systems similar to Silver King include Wolf Creek and Silver Creek in Mono County.

See Section 5.1.1.3 (Paiute cutthroat trout) in the EIS/EIR and response to Comment 1-38 regarding the effectiveness of the fish barriers on Silver King Creek.

6-7

The proposed restoration activities expressed by the commenter does not meet the Objective/Purpose and Need for the project (Section 2.2). The Agencies have put forth the proposed Action in order to help achieve the recovery of the Paiute cutthroat trout. The proposed Action, if approved, is a critical and necessary step to preventing Pauite cutthroat trout from becoming extinct, conserving the species, and restoring it to a level that could allow it to be removed from the Federal threatened species status.

6-8

See Section 5.1.1.3 (Existing threats) and response to Comments 1-32, 2-48, and 4-1 regarding existing threats to Paiute cutthroat trout and the inadequacy of existing populations and response to Comment 6-7 above.

6-9

The Agencies appreciate the concern for protection of resources. Please see Master Response A.

COMMENT LETTER #7

Briefly, this is the same project, in the same stream, with the same poison, for the same fish.

Well, there is an exception - they are going to choose between their three formulations of the poison, and the newest, latest, formulation contains two new elements - both endocrine disruptors. (If you want to know more about those, watch the PBS Frontline program this Tuesday evening at (from Sacto) or online at PBS, Frontline.) It's called Poisoning our Water. 7-1

Fish and Game has been poisoning Silver King Creek 5ince 1950.

The cost will be approximately $400,000.

During the past ten years, Fish and Game wanted to poison the lower 11 miles to kill the rainbow so that some irresponsible fisherman would not be able to easily move a trout from below the falls to above the falls. But sixteen years have gone by since the last poisoning, and this has not happened. 7-2

The project is to preserve the "historic habitat" of the PCT - the reach below the falls. When did that become the historic reach? For the past 56 years, the historic habitat has been above the falls. 7-3

They can't tell the PCT from the LCT genetically in the lab, according to a study Fish and Game cites (Cordes, Israel and Mays, UCD) and apparently you can't always tell the difference in the field. 7-4

Fish and Game have four successful populations of PCT outside of SKC - in a stream in Madera County, a stream in Fresno County, and two streams in Mono County. Then they have all of the area above the falls - including SKC above the falls, Four Mile Creek and Fly Valley Creek - in other words, the entire upper drainage of SKC. PLUS, they have Corral Creek and Coyote Creek. See the map on page 1-5. 7-5

Alternative 3 - the non-poison alternative is not effective, and not economical. Fish and Game cite having to do the work to electroshock over 10 years, with 72 people working on it. In the Lake Tahoe Basin, they are going to electroshock and gill net the entire upper Upper Truckee watershed, from Carson Pass to the back end of the valley, and it isn't going to take 10 years, or 72 people a year. But there are more drainages and more terrain. 7-6

1

RESPONSE

Comment Letter 7

Alpine County
Jardine
Date

7-1
The Agencies assume the respondent is referring to CFT-Legumine™ when referring to the "new formulation." The Agencies have no information that indicates that the primary formulation constituents of CFT-Legumine™ are endocrine disruptors. A review of the available scientific literature and of lists of suspected endocrine disruptor chemicals by several public Agencies could find no listing that included CFT-Legumine™ formulation constituents.

7-2
See Section 5.1.1.3 (Existing threats) in the EIS/EIR and response to Comment 1-7 regarding existing threats to Paiute cutthroat trout.

7-3
See Section 5.1.1.3 (Paiute cutthroat trout) in the EIS/EIR, Master Response C, and response to Comment 1-8 regarding the historical range of Paiute cutthroat trout.

7-4
See Section 5.1.1.3 (Existing genetic structure) in the EIS/EIR and response to Comment 1-9 regarding genetics of Paiute cutthroat trout.

7-5
See Section 5.1.1.3 (Existing threats) in the EIS/EIR, Master Response C, and response to Comments 1-20, 2-48, 4-1, and 8-20 regarding fragmented habitat. While Paiute cutthroat trout currently exist in more stream miles than they did historically, the habitat they do occupy is all outside its historical range and occurs in small, highly fragmented habitat which is not adequate for long-term persistence.

7-6
Please see Master Response D and response to Comments 1-12, 1-17, 1-18, 2-5, 3-6, 3-8, and 3-12. The Lake Tahoe Basin Management Unit has initiated a brook trout eradication program using gill nets in several small lakes (85 surface acres) and electrofishing methods in approximately 10 miles of stream habitat. There are substantial differences in the size and flow regime of the two watersheds (Lawson 2009). The key difference between the two streams is the number of barriers (12-14) that occur in the Upper Truckee River compared to Silver King Creek (see map of Upper Truckee River project, p. 6 of BE/BA). Because the Upper Truckee River contains numerous barriers it allows biologists to treat short sections of stream without having brook trout reinvading. Silver King Creek has no barriers within the treatment area except for Llewellyn Falls and the series of barriers in Silver King Canyon. The other key difference is the species of non-native fish which occurs in the two streams; brook trout (competitor) in the Upper Truckee River and rainbow trout/hybrids (competitor/hybridizing) in Silver King Creek.

COMMENT LETTER #8

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

April 29, 2009

Robert D. Williams
Nevada Fish and Wildlife Office
U.S. Fish and Wildlife Service
1340 Financial Boulevard, Suite 234
Reno, NV 89502

Subject: EPA Comments on the Paiute Cutthroat Trout Restoration Project Draft Environmental Impact Statement/Environmental Impact Report (DEIS/EIR), Alpine County, California (CEQ # 20090076)

Dear Mr. Williams:

The U.S. Environmental Protection Agency (EPA) has reviewed the above-referenced document pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act. Our detailed comments are enclosed.

Based on our review, we have rated the DEIS as Environmental Concerns – Insufficient Information (EC-2) (see enclosed "Summary of Rating Definitions"). The project proposes to eradicate non-native trout species from 11 stream miles of Silver King Creek, its tributaries, and Tamarack Lake, for the purposes of preventing hybridization with other trout species and preventing Paiute cutthroat trout from becoming extinct. The proposed action would utilize the piscicide rotenone to eradicate non-native trout, and neutralize the rotenone using potassium permanganate downstream of Silver King Canyon at its confluence with Snodgrass Creek. We have concerns regarding the piscicide selection process, and request additional information regarding the environmental impacts of piperonyl butoxide. We also recommend either further consideration of physical treatment combined with chemical treatment options, or additional discussion as to why such approaches were dismissed.

EPA appreciates the opportunity to review this DEIS/EIR. When the Final EIS/EIR is released for public review, please send one copy to the address above (mail code: CED-2). If you have any questions, please contact me at (415) 972-3521, or contact Karen Vitulano, the lead reviewer for this project, at 415-947-4178 or vitulano.karen@epa.gov.

Sincerely,

Kathleen M. Goforth, Manager
Environmental Review Office (CED-2)

Printed on Recycled Paper

Enclosure: Summary of EPA Rating Definitions
EPA's Detailed Comments

cc: Stafford Lehr, California Department of Fish and Game
Ken Harris, State Water Resources Control Board
Lahontan Regional Water Quality Control Board

SUMMARY OF EPA RATING DEFINITIONS

This rating system was developed as a means to summarize EPA's level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the EIS.

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

ADEQUACY OF THE IMPACT STATEMENT

Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, "Policy and Procedures for the Review of Federal Actions Impacting the Environment."

EPA DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT/ ENVIRONMENTAL IMPACT REPORT FOR THE PAIUTE CUTTHROAT TROUT RESTORATION PROJECT, ALPINE COUNTY, CALIFORNIA, APRIL 29, 2009

PISCICIDE USE

Decision-making regarding piscicide choice

The DEIS identifies 3 piscicide products - CFT-Legumine, Noxfish and Nusyn-Noxfish - for potential use for the proposed project. Appendix B mentions that CFT-Legumine is the preferred choice of approved piscicides for this project (p. B-8), but there is no mention of this in the DEIS proper, nor is there any discussion as to how product selection will occur[1]. Nusyn-Noxfish contains piperonyl butoxide (PBO), a registered pesticide, which increases the toxicity of rotenone. The DEIS describes PBO as a synergist (p. 5.4-13) and does not clearly communicate that this is an additional pesticidal ingredient. The document also implies on p. 3-8 that two or more of the products would be used when it states that CFT-Legumine, Noxfish *and/or* Nusyn-Noxfish would be applied, so clarification as to how product mixing decisions would be made should be included. 8-1 8-2 8-3

Recommendation: In the Final EIS (FEIS), include the factors or criteria that will be used in determining which product(s) will be selected for use in the proposed project. We recommend that PBO be clearly identified in the FEIS as a registered pesticide product when referencing its use as a synergist for rotenone. 8-4

Generally, EPA encourages use of the least toxic, least chemical intensive options first. Because CFT Legumine contains much lower levels of contaminants, especially napthalene, and does not contain PBO, this product appears environmentally preferable. We encourage the Agencies to plan effectively so that inadequate supplies of a first-choice product are not justification for using less desirable products. 8-5

Ecological risk assessment/monitoring

The ecological and human health risk assessment in Appendix C evaluates the risk associated with rotenone, but does not contain an assessment of risks due to PBO, which is, as mentioned, a registered pesticide, not just a synergist. Appendix B notes that when Nusyn-Noxfish was used in Lake Davis in 1997, PBO did not degrade as readily as other compounds and was the most persistent chemical in the standard liquid formulation (p. B-7). 8-6

Page C-52 of the risk assessment equates the rotenone risks of Noxfish and Nusyn-Noxfish, and states they are less than significant. However, the risks of these two products are not the same, even with the same rotenone concentrations, since PBO increases the toxicity of rotenone, and PBO has toxicity itself.

The DEIS identifies the water quality objectives for California Department of Fish and Game

[1] Appendix B says only that the agencies would reserve the option of using Noxfish or Nusyn-Noxfish should issues arise with acquisition or approval to use CFT-Legumine based upon formulation approvals.

1

rotenone projects, which includes maximum concentrations of rotenone residues (p. 5.4-8). It's not clear whether PBO will be among the chemicals monitored. 8-6 continued

Recommendation: EPA recommends that additional analysis of the fate and potential effects of PBO be disclosed in the risk assessment/FEIS for Nusyn-Noxfish, and that the document differentiate the risks of Noxfish and Nusyn-Noxfish. The toxicity of PBO should be considered in selecting piscicides for the proposed project. EPA recommends PBO be among the chemicals monitored in the monitoring program. 8-7

Potassium permanganate use for Nusyn-Noxfish

Table 5.3-1 shows a rotenone in-water concentration of 25 micrograms per liter (ug/L) for both Noxfish and Nusyn-Noxfish (using 0.5 milligrams per liter (mg/L) and 1.0 mg/L respectively). Since Nusyn-Noxfish contains PBO, it's not clear why there would need to be the same in-water concentration of rotenone (25 ug/L). The PBO is a synergist, so less active ingredient should be required. Also, if the in-water concentration of rotenone is at 25 ug/L after application of 1 mg/L of Nusyn-Noxfish, then why is 4 mg/L of potassium permanganate for rotenone neutralization indicated for this product, and 2 mg/L indicated for the same concentration of rotenone for NoxFish? 8-8

Recommendation: Clarify the rationale for above-mentioned figures presented in Table 5.3-1. If these figures are in error, provide corrections for the FEIS.

Additional piscicide comments

- The background discussion of NPDES permitting on page 5.3-5 may need revision to reflect the current state of court decisions. In January 2009, the 6th Circuit Court vacated the EPA rule that exempted certain pesticide applications from NPDES permitting. 8-9
- Table 5.1-8 gives toxicity values, but it's not clear whether they are expressed as ug/L formulation or ug/L active ingredient. 8-10
- Table 5.3-1 does not include the PC code for PBO, which is 067501. 8-11

ALTERNATIVES ANALYSIS

Clarify treatment of Tamarack Lake; consider physical treatment only

The treatment of Tamarack Lake is not certain and will be based on whether fish are found during surveys. If they are found, treatment would occur during the 2nd and/or 3rd year. It is not clear why the option of using physical methods only for Tamarack Lake is not being considered. According to the DEIS, gillnetting and electrofishing from the lake shoreline would not cause the level of disturbance that these activities would cause to streams (p. 5.4-19). Physical treatment of Tamarack Lake would also eliminate the significant short-term and unavoidable impacts on water quality in Tamarack Lake from rotenone (p. 5.10-2). The DEIS states that chemical residues in the lake could potentially result in significant impacts on water quality standards and beneficial uses that would be unavoidable because no mitigation measures are available to 8-12

accelerate the degradation of rotenone in the lake (p. 6-4 through 6-5). Physical treatment would also eliminate the unavoidable adverse effects on potential rare or endemic benthic macroinvertebrate species in Tamarack Lake (p. 6-4). 8-13 8-14

Additionally, the DEIS is somewhat vague as to the treatment specifics regarding application of rotenone in Tamarack Lake. For example, it is not clear if the lake levels will be lowered before treatment. Additionally, the DEIS states that "approximately 50 gallons of rotenone" would be used to treat the lake. It is not clear if this refers to 50 gallons of technical rotenone, or 50 gallons of one or more of the products. 8-15

Recommendation: Consider and evaluate an alternative that removes any undesirable fish found in Tamarack Lake using physical methods only. 8-16

If no additional NEPA analysis will occur for rotenone treatment of Tamarack Lake, additional details regarding treatment should be provided.

Consider or clarify dismissal of physical removal/fisheries management followed by rotenone application alternative

The alternatives formulation report (Appendix B) identified the option of physical removal/fisheries management followed by rotenone application (Section 2.6.2, p. B-16), but dismisses this alternative and any chemical approaches combined with other approaches from consideration because of major technical and logistical challenges as well as environmental impacts, and because combining physical removal would not increase the removal effectiveness (p. B-21).

Additional discussion/consideration of physical removal/Fisheries Management followed by rotenone application should be included. The DEIS states that physical removal programs that allow the public to gather fish for consumption (e.g. a fishing derby, etc.) prior to rotenone treatment may be useful in garnering public support and attention for the action. It states that partnering with such groups as Trout Unlimited could reduce the chance of accidental introduction of undesirable fish above Llewellyn Falls (p. B-16). The existing 3,600-foot fish prohibition area below Llewellyn Falls would also be in effect to reduce accidental introduction. 8-17

It is not clear why allowing the use of the resource for consumption is not considered beneficial for the proposed action; additionally, the impacts to recreation and environmental resources do not seem to be fully explored for this option. The proposed action does include some physical removal of fish by seeking Fish and Game Commission approval for an increased daily bag limit of 5 fish per day in an attempt to reduce existing non-native trout populations (p. 1-3, p. 3-3) (page 7-1 instead states that the daily bag limit would be increased from 5 to 10 fish prior to treatment), but it is not clear why any bag limit would be pursued since removing fish for consumption reduces the amount that will be killed in the proposed action. Reducing this number would also seem to bear on environmental impacts, since presumably it would be easier to capture fewer fish in the block nets that will be set up to catch the dead fish. This would reduce the possibility of fish escaping the net and the potential for decomposition of dead fish,

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which reduce dissolved oxygen and raise bacterial levels in water (p. 5.4-15). Additionally, the dead fish are to be buried away from the creek, and reducing the number of fish to be buried could reduce the amount of ground disturbance in a designated wilderness area needed to accomplish this. Maximum pre-treatment fish removal would also have beneficial impacts to recreation.

Recommendation: Consider the physical removal/fisheries management followed by rotenone application alternative in the impact assessment or provide additional justification as to why it was dismissed, such as identifying adverse impacts. Consider/discuss the potential reduction in impacts from having to catch and bury fewer fish and the beneficial impacts to recreation that would occur. At a minimum, explain why any pre-treatment fishing bag limit prior to treatment is being proposed for the proposed action, and if a bag limit will remain, clarify whether it is 5 or 10 fish per day.

8-17 continued

ADDITIONAL COMMENTS

- Recreation impacts - the FEIS should state whether it is reasonably foreseeable that, should the restoration be successful, reaches downstream from the new northern boundary of Paiute cutthroat (the falls at Silver King Canyon) would be closed to fishing to prevent unauthorized transfer from below the falls into the treatment area (similar to the 3600-foot reach currently closed below Llewellyn Falls). We recommend that the FEIS identify how unauthorized transfer of fish into the treatment area would be prevented, and if a closure is expected, that impacts to recreation and economic resources be included. 8-18 8-19
- Climate change effects on the project - the DEIS identifies project contributions to greenhouse gases, but does not discuss how climate change effects could impact the success of the project or how the project will enhance adaptation strategies for the species. A brief discussion is recommended. 8-20
- Apparent typo - page 5.6-6 says the treatment area would *not* be closed during the chemical treatment process 8-21

4

RESPONSE

Comment Letter 8

Environmental Protection Agency (EPA)
Kathleen M. Goforth, Manager
April 29, 2009

8-1 through 8-8

The Agencies acknowledge the concerns the USEPA has concerning the use of Nusyn-Noxfish® which contains the synergist piperonyl butoxide (PBO). Subsequent to the issuance of the DEIS, the Agencies have determined that CFT-Legumine™ or Noxfish® will be adequate to accomplish the project's goal of establishing native Paiute cutthroat trout (*Oncorhynchus clarkii seleniris*) in Silver King Creek. This decision was based on the relative efficacies and environmental risks posed by both rotenone products. The decision to use CFT-Legumine™ or Noxfish® instead of Nusyn-Noxfish® will adequately satisfy concerns USEPA concerns regarding the toxicity and environmental fate of PBO.

8-9

In 2001, the Ninth Circuit Court of Appeals held that point-source discharges of pollutants associated with use of aquatic pesticides in waters of the United States require a National Pollutant Discharge Elimination System (NPDES) permit if the pollutant leaves any residue in the water after its application that would qualify as a chemical waste product. (Headwaters, Inc. v. Talent Irrigation District, (9th Cir. 2001) 243 F.3d 526.) In 2005, the Ninth Circuit further held that the use of aquatic pesticides applied intentionally and in accordance with the EPA-approved FIFRA label does not require an NPDES permit if there are no unintended effects associated with the use of the product and no residue remains after the pesticide performs its intended function. (Fairhurst v. Hagener (9th Cir. 2005) 422 F.3d 1146.) In 2009, the Sixth Circuit Court of Appeals vacated EPA's regulation exempting pesticides applied in accordance with the FIFRA label from NPDES permit requirements as inconsistent with the Clean Water Act. (Nat'l Cotton Council of America v. U.S.E.P.A. (6th Cir. 2009) 553 F.3d 927.) Accordingly, the Ninth Circuit's decisions in Headwaters and Fairhurst and the Sixth Circuit's decision in National Cotton Council require NPDES permits for the discharge of aquatic pesticides to waters of the U.S. if any residue remains after the pesticide has performed its intended function or there are any unintended effects of the use of the pesticide. Because of the likelihood of unintended effects on macroinvertebrates from the application of rotenone throughout the project area, there is no basis to waive waste discharge requirements for this rotenone treatment project and the discharge of pollutants associated with the application of rotenone for the Silver King Creek Project requires an NPDES permit.

8-10

The values in Table 5.1-8 are µg/L (ppb) of active ingredient rotenone.

8-11

Comment noted appropriate changes have been made, see Table 5.3-1.

8-12

Please see Master Response H.

8-13
Please see Master Response H. The Agencies agree that mechanical removal of fish is preferable and would eliminate the unavoidable adverse effects on potential rare or endemic benthic macroinvertebrates in Tamarack Lake.

8-14
See response to Comment 8-13.

8-15
Please see Master Response H. If the Agencies ever seek to chemically treat the lake, a range of options will be considered that may include lowering the lake to reduce the volume of water to be treated. If the lake was treated the amount of formulated product that would be used would be approximately 50 gallons of CFT-Legumine™ or 200 to 400 pounds (25 or 50µ/L active ingredient rotenone, respectively) of carrier free rotenone. The exact volume or poundage of formulated rotenone product will depend upon the lake volume at the time of the treatment.

8-16
Please see Master Response H.

8-17
See Appendix B (Section 2.6.2 (Physical removal/fisheries management followed by rotenone application)) in the EIS/EIR and Master Response D regarding combining physical removal methods with the use of rotenone. The combined physical removal/fisheries management followed by a limited rotenone treatment of Silver King Creek and tributaries downstream of Llewellyn Falls was dropped from alternatives analysis based upon input from the Lahontan Region Water Quality Control Board's desire that we analyze and consider a completely non-chemical alternative, thus the decision for Alternative 3, a chemical free mechanical removal of fish. The California Fish and Game Commission did increase the daily bag limit to 10 fish per day with a maximum of 10 fish in possession. Along with public notices the Agencies will seek to maximize the recreational use of the fishery prior to the chemical treatment occurring. An increase in daily bag limit and possession limit beyond 10 fish was deemed to be inconsistent with other bag limits for other waters in the area and thus was rejected. Due to the remoteness of the project area the logistics of implementing a sanctioned "derby" is not feasible. Most "derbies" operate in controlled access environments such as reservoirs, city parks, or other venues. Furthermore, "derbies" are not effective in eradication of fish populations (Paul 2003).

8-18
See Section 5.1.1.3 (Existing threats) and response to Comment 1-7 regarding the movement of non-native fish. The area of Silver King Creek downstream of the confluence with Snodgrass Creek will be open to fishing. Upstream of Snodgrass Creek will be closed. This boundary will be clearly recognizable to anglers and yet will still allow angling to occur in waters outside the restoration project boundaries. The threat of illegal angling activity in Silver King has been well documented in the Draft EIS/EIR (page 5.1-14) where the total closure above Llewellyn Falls has resulted in numerous occurrences of poaching. The Agencies will develop informational handouts that would inform anglers entering the wilderness of the sensitivity and risks associated with the Paiute cutthroat trout. The handouts would be in addition to the informational kiosks and signage the trailheads. Agency personnel will continue to have a presence in the basin as budgets allow.

8-19
See response to Comment 8-18.

8-20
Because the Proposed Action would reestablish Pauite cutthroat trout in their native habitat within several years, climate change would be unlikely to affect short-term project success. The longer-term success of the project is dependent on several factors including stream flows, massive disturbance (e.g., landslide), food availability, and temperature.

As discussed in Master Response I, temperature changes resulting from climate change could affect the project. However, it would be highly speculative to project that future warming could affect the water temperatures and food required for Pauite cutthroat trout.

In terms of enhancing adaptation strategies, the EIS/EIR contains an extensive discussion regarding existing threats (page 5.1-11) and how expansion of the Pauite cutthroat trout range into its native habitat would enhance the population by minimizing loss of diversity and the effects of inbreeding (Cordes et al. 2004). It would also increase population viability by reintroducing Pauite cutthroat trout to this native habitat area once non-native trout are removed, and would reduce extinction threats. This section also evaluates threats to fragmented populations, including lack of gene flow, and threats of limited range and the advantages of occupying a larger range.

Although somewhat speculative, supplying Pauite cutthroat trout with a larger home range would increase the adaptability of the species by increasing gene flow, reducing inbreeding, and increasing genetic diversity. The Proposed Action could allow some adaptive pressure and genetic expression, increasing the chances of maintaining a self-sustaining population in perpetuity.

8-21
Page 5.6-6 of the EIS/EIR will be revised to read: "The entire treatment area from Llewellyn Falls to Silver King Canyon would be closed to fishing during the chemical treatment process."

COMMENT LETTER #9

From: janet feil <janet_feil@yahoo.com>
To: <SilverKingPublicComment@dfg.ca.gov>
Date: 4/30/2009 3:08 PM
Subject: No Action

I encourage you to decide to protect the ecosystem, and say NO to poisoning the Carson Iceberg Wilderness. Stop fooling with Mother Nature. Let's see if perhaps the river and the fish can take care of themselves. Save some money in this time of fiscal crisis, and don't spend it on poison. 9-1

Janet Feil
1112 Swanston Drive
Sacramento, Ca 95818
janet_feil@yahoo.com
Friend of the Sierra

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RESPONSE — COMMENT LETTER 9

Comment Letter 9

Janet Feil
April 30, 2009

9-1

As trustee Agencies for fish and wildlife resources, the Agencies believe that the investment in this project to benefit the recovery of the federally threatened Paiute cutthroat trout is warranted. Please see Master Response A.

COMMENT LETTER #10

From: Kevin Proescholdt <kevin-jean@msn.com>
To: <silverkingpubliccomment@dfg.ca.gov>
Date: 4/22/2009 8:53 AM
Subject: Silver King Creek Poisoning

Paiute Cutthroat Trout Restoration Project
California Department of Fish and Game
North Central Region
1701 Nimbus Road
Rancho Cordova, CA 95670

Attn: Stafford Lehr, Senior Environmental Scientist

Dear Mr. Lehr,

As someone who is deeply concerned with wilderness areas across the nation and as someone who has backpacked in the Sierra Nevada Mountains, I must register my strong opposition to the proposed poisoning of Silver King Creek in the Carson-Iceberg Wilderness in the Sierra Nevada. 10-1

While I certainly support the preservation of endangered species, the Paiute Cutthroat Trout (PCT) is not an endangered species, nor did the PCT exist on the lower stretches of Silver King Creek where the poisoning is scheduled to occur. Healthy populations of PCT do exist in five other streams in the vicinity. 10-2

As you may know, the 1964 Wilderness Act defines wilderness in part as "a place where the earth and its community of life are untrammeled by man...." The poisoning proposed for the Silver King Creek in the Carson-Iceberg Wilderness certainly would violate this definition of wilderness, with extensive poisoning that would kill not only fish but all sorts of other wildlife species like frogs, toads, and other amphibians, as well as macroinvertebrates like stoneflies, mayflies, and caddisflies. The toxic mix of solvents, emulsifiers, dispersants and other chemicals must absolutely not be allowed in any wilderness stream or lake. 10-3

Please cancel this project! 10-4

Sincerely,

Kevin Proescholdt
2833 43rd Ave. S.
Minneapolis, MN 55406

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RESPONSE

Comment Letter 10

Kevin Proescholdt
April 22, 2009

10-1
Comment noted and considered. Please see Master Response A.

10-2
Paiute cutthroat trout is currently listed as a threatened trout under the Endangered Species Act of 1973, as amended. See Section 5.1.1.3 (Paiute cutthroat trout) of the EIS/EIR, Master Response C, and response to 1-8 regarding the historical range of Paiute cutthroat trout. See Section 5.1.1.3 (Existing threats) in the EIS/EIR and response to Comments 1-32, 2-48, 2-51 regarding habitat needs for long-term persistence.

10-3
See Sections 5.1.4.2 (Alternative 2: proposed Action) and 5.2.4.2 (Alternative 2: proposed Action) addressing impacts on aquatic and wildlife species, Master Response A, and response to Comments 1-57 and 5-1.

10-4
Please see Master Response A.

COMMENT LETTER #11

From: <yswolf@montana.com>
To: <SilverKingPublicComment@dfg.ca.gov>
Date: 4/29/2009 10:58 AM
Subject: Comment on Stream Poisoning Proposal

I am opposed to poisoning Silver King Creek in the Carson-Iceberg Wilderness. 11-1

This is a wilderness area where Americans have resolved "not [to] occupy and modify all areas of the United States and its possessions." Wilderness exists "in contrast with those areas where man and his works dominate the landscape." Wilderness is to remain "an area where the earth and the community of life are untrammeled by man," a place that "generally appears to have been affected primarily by the forces of nature.' 11-2

Americans must recognize that we live as part of – not in dominion over – the country's remaining wildlands. Tell the California Fish and Game Department to keep their poisons out of federal wilderness areas. 11-3

Leave this interconnected web of life alone.

Jeff Smith
P.O. Box 7192
Missoula, MT 59807

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RESPONSE

Comment Letter 11

Jeff Smith
April 29, 2009

11-1
Comment noted and considered. Please see Master Response A.

11-2
Comment noted and considered. Please see Master Response A and response to Comment 1-57.

11-3
Comment noted and considered. Please see Master Response A.

COMMENT LETTER #12

From: jean public <jeanpublic@yahoo.com>

To: <jeannie_stafford@fws.gov>, <americanvoices@mail.house.gov>, <info@taxpa...

CC: <info@emagazine.com>, <humanelines@hsus.org>, <info@peta.org>, <info@cok...

Date: 4/9/2009 8:13 AM

Subject: public comment on tax dollars for DEIS Paiute cutthroat trout restoration

It is time to stop spending money on this wasted effort. If the water is not clean enough to support fish life or if California, Nevada drain the rivers to use the water for human use so that there is no flow left, it is time to call a halt to taking national tax dollars for projects like this. Let's be realistic. We need priorities. Somebody long ago decided that human use of the water and dirtying up the water is more important. Both steps need to be examined before any national money goes into this effort. I see no notice that such has been accomplished.

I also think killing what CAN grow there by poisoning the waters is horrible. It is horrible for mankind, in all of his stupidity, to kill the life that can grow there. 12-1

I have seen this agency poison other waters for this stupidity before. FWS needs to be put out of existence and a new truly environmental agency created. This one has gone bad. It is corrupt. It has been captured by bad interests.

Please stop wasting taxpayer dollars on this crap.

Jean Public 15 Elm St Florham Park NJ 07932

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RESPONSE

Comment Letter 12

Jean Public
April 9, 2009

12-1

As trustee Agencies for fish and wildlife resources, the Agencies believe that the investment in this project to benefit the recovery of the federally threatened Paiute cutthroat trout is warranted. Please see Master Response A.

COMMENT LETTER #13

From: Jean Stone <jstone@ndep.nv.gov>
To: SilverKingPublicComment@dfg.ca.gov <SilverKingPublicComment@dfg.ca.g...
cc: Birgit Widegren <bwidegren@ndep.nv.gov>, Kathy Sertic <ksertic@ndep.nv.g...
Date: 5/4/2009 2:41 PM
Subject: Pauite Cutthroat Trout Restoration Project Draft EIR/EIS

Attention: Stafford Lehr
Senior Environmental Scientist
Pauite Cutthroat Trout Restoration Project

The Nevada Division of Environmental Protection, Bureau of Water Quality Planning (NDEP-BWQP), appreciates the opportunity to comment in regards to the Draft EIR/EIS for the proposed Pauite Cutthroat Trout (PCT) Restoration Project in the headwaters of the East Fork Carson River.

After reviewing the draft document and researching additional literature, it is indicated that the use of rotenone dispersed in a mixture of liquid solvents (e.g. CFT Legumine) can be safely applied to Silver King Creek and tributaries for the purpose of eliminating non-native trout and restocking with native PCT, a federally-endangered species. 13-1

NDEP-BWQP would like to request that water quality data collected during and after the rotenone treatment be made available within days of the application to confirm neutralization and/or dissipation of the piscicide. This would re-assure all concerned stakeholders that the appropriate measures have been taken to prevent any unnecessary environmental impacts, particularly to downstream reaches outside the treatment area. 13-2

Jeanmarie Stone
Environmental Scientist III
Nonpoint Source Program

RESPONSE

Comment Letter 13

Nevada Division of Environmental Protection,
Bureau of Water Quality Planning (NDEP-BWQP)
Jeanmarie Stone, Environmental Scientist III, Nonpoint Source Program
May 4, 2009

13-1
The Agencies agree that rotenone can be applied safely and effectively for this project to eliminate non-native trout.

13-2
The Agencies will provide NDEP with project monitoring data as soon as laboratory results are available showing effective neutralization of rotenone downstream of the neutralization station in compliance with project permits.

COMMENT LETTER #14

From: "Mark Solomon" <mark_a_solomon@hotmail.com>

To: <SilverKingPublicComment@dfg.ca.gov>

Date: 3/23/2009 4:35 PM

Subject: Proposed Paiute Trout Project, Alpine County

Dear Sirs:

I have been backpacking into the Silver King Creek area for the nearly 40 years and have caught a few fish for dinner in this creek. Llewellyn Falls has always been a natural barrier to keep the called non-native fish from traveling upstream to the meadow. Eliminating the trout below the falls to Silver King Canyon and reintroducing the Paiute Trout into this stretch of water will allow the DFG/USFWS/FS to remove additional streams from public fishing access. Also, as the Paiute Trout swim downstream, other areas will be closed to fishing and future generations won't be allowed to fish in this downstream waters. 14-1

My suggestion would be to improve the stream habitat above Llewellyn Falls to sustain the trout in the meadow area and leave the area below the falls open to fishing. Since I have been trekking into this area, this has been the plan to sustain the Paiute Trout in the past. Opening up additional waters for this species will not improve the situation and only allow the potential interbreeding with other species who will return to this stretch of treated waters. By the way, how do you know that the Paiute Trout was originally in the tributaries in the 11 steam mile area and not the Brook or Rainbow Trout? 14-2, 14-3, 14-4

If you need a volunteer to help with this project or assist in doing additional research, please let me know.

Mark A. Solomon
709-150 Sunnyside Rd
Janesville, CA 96114

530 253-3620

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RESPONSE

Comment Letter 14

Mark A. Solomon
March 23, 2009

14-1
The treatment area will be closed for an unknown period of time for project implementation and effectiveness. Silver King Creek downstream of the confluence with Snodgrass Creek and other nearby waters (e.g., East Fork Carson River) will remain open for recreational purposes.

14-2
See Section 2.2 (Objective/purpose and need for action) regarding the purpose and need for the project and Master Response C and response to Comment 1-8 regarding the historical range of Paiute cutthroat trout. Habitat conditions have been improving in Upper Fish Valley since cattle grazing has ceased. However, this will not lead to recovery of Paiute cutthroat trout since this is not the historical range.

14-3
See response to Comments 1-6, 1-7, and 1-38.

14-4
Please see Section 5.1.1.3 (Paiute cutthroat trout) in the EIS/EIR, Master Response C, and response to Comment 1-8 regarding the historical range of the Paiute cutthroat trout. Brook trout are native to the eastern part of North America and rainbow trout are native to Pacific Coast watersheds and a few inland basins in Oregon (Behnke 1992).

COMMENT LETTER #15

From: Joe Cereghino <joe@littleantelopepackstation.com>

To: Bill Somer <wsomer@dfg.ca.gov>, Stafford Lehr <silverkingpubliccomment@d...

CC: Erin Costa <costaranch@yahoo.com>

Date: 5/3/2009 7:11 PM

Subject: Paiute Cutthroat Trout Restoration Project

Bill, Stafford, and all interested parties,

The following letter contains Public Comment Regarding Paiute Cutthroat Trout Restoration Project Draft EIS/EIR from Joe Cereghino,

Owner and Operator of Little Antelope Pack Station. Thanks for your attention to my concerns.

-Joe

Paiute Trout Project
Paiute Cutthroat Trout Restoration Project
Department of Fish and Game
North Central Region
1701 Nimbus Road
Rancho Cordova, CA 95670 FAX(916)358-2912

Attn: StaffordLehr, Senior Environmental Scientist

Email: SilverKingPublicComment@dfg.ca.gov

For the past five years Little Antelope Pack Station has been an integral part of the Paiute Trout Restoration Project, offering packing services of people, equipment and supplies to the fish study sites. As a professional guide and outfitter, I fully support the goal of restoring native trout populations. As an avid outdoorsman and angler, I look forward to the day that this goal is accomplished.

The purpose of my business is to provide my clients a unique wilderness experience. When taking folks from all over the U. S. into the Carson Iceberg Wilderness I make sure to demonstrate an appreciation of the environment and its resources. Since purchasing the Pack Station in 2003 I have put all of my personal resources into building a successful recreational business. In the course of promoting the Pack Station and recreation in the Carson Iceberg Wilderness I have attended outdoor trade shows, volunteered for youth programs such as 4H, given demonstrations, attended public meetings, held seminars, spoken at community events, and put together a website.

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COMMENT LETTER #15

I have received and read a copy of the Draft EIS/EIR. I do have some concerns regarding the implementation of this project.

Loss of income-

The majority of my business is fishing trips. The Draft EIS/EIR contains a misquote of my personal communication with Steve Pavich of ENTRIX on November 4, 2008. The percentage of trips that are fishing related has been documented via U.S. Forest Service Annual Use Reports and is tabulated as follows:

- 50% of total income derived from fishing trips
- 76% of total income derived from fishing trips
- 78% of total income derived from fishing trips

15-1

Loss of increased fishing trip sales-

Over the past five years I have built a reputation as a provider of excellent fishing opportunities to my clients, resulting in dramatic increases in bookings especially in the past three years. Many of the fishing trip sales are return customers who have come back year after year. I do not want to disappoint the loyal clients whose trust I have earned.

Public access limitations-

During the time when public access is redirected, there will certainly be a decrease in business for me. While the Draft EIS/EIR states other areas will be open to fishing and public access, those areas that provide angling are more remote and will prevent some people access to the wilderness area. The two alternate fishing sites are each about three hours on horseback in difficult terrain. This makes the trip impossible for some of my clients.

15-2

Public perception of results of Rotenone use-

Even though the Draft EIS/EIR clearly states that Rotenone use is relatively safe, public perception will be the deciding factor when clients decide where to spend their vacation dollars. If the choice is between an area recently treated with pesticides and one that is not, the choice would be the latter. My concern is that this perception factor will affect not only fishing clients, but also backpackers, hikers, horseback riders, and especially families who enjoy camping in the wilderness.

15-3

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COMMENT LETTER #15

Decrease in future bookings-

As folks find other places to spend their vacation, the result may be a loss in the momentum in business I have worked so hard to build up.

15-4

Economic viability of the business-

As the cost of goods and inputs needed to operate the pack station increases, the income needs to increase as well in order for the business to remain viable. If the loss of income results in an inability to keep up with expenses (much less increase profitability) it will be impossible to continue to operate.

Little Antelope Pack Station has been in operation since the 1930's, offering a unique mode of transportation into otherwise impassable terrain, with very little adverse effect on the environment. I am pleased to continue this tradition and look forward to offering pack and guide services for many years to come.

Thank you for considering these concerns as you decide how to best implement this project.

Sincerely,

Joe Cereghino

Little Antelope Pack Station
P. O. Box 179
Coleville, CA 96107
email: joe@littleantelopepackstation.com
(775) 315-6222

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RESPONSE

Comment Letter 15

Joe Cereghino
May 3, 2009

15-1
The EIS/EIR has been corrected to reflect the day-use visitor figures presented by the commenter in comment letter 15 and in Mr Cereghino's personal communication with Entrix in 2008.

The Agencies understand the Antelope Pack Station is close to the project area and could be affected by closure of Silver King Creek. Therefore, the Agencies are considering several measures to reduce the economic effects of the proposed Action including minimizing the amount of time the project area is closed to fishing by implementing Alternative 2. This alternative would result in the shortest closure. See Section 5.1.2.2 (State) which discusses the possible inclusion of this area into the Heritage Trout Program.

15-2
During the proposed Action, the Agencies will be relying on pack stock to implement the project. The Agencies will be looking towards local business (e.g., Little Antelope Pack Station) in order to fulfill that need. Although the proposed Action would not prevent public access to the wilderness area, the Agencies understand that it may be difficult for some customers to access more remote and rugged areas of the wilderness. The Agencies are considering several measures to reduce the economic effects of the proposed Action including minimizing the amount of time the project area is closed to fishing by implementing Alternative 2. Some customers may need to seek fishing opportunities in other areas during the proposed Action.

15-3
The Agencies understand your concerns of public perception with the use of pesticides and any resulting loss of business. The Agencies are committed to providing educational materials regarding PCT conservation and will include information in those materials how the area will be able to be used safely by all wilderness users. In addition, the Agencies believe that because the treatments will occur late in the summer, and will only last approximately one week each year, most other recreation users will not be significantly affected.

15-4
The Agencies understand the concern expressed; however, it would be speculative to address loss of momentum in the economic impact assessment. As described above, to offset these effects, the Agencies are considering several measures to reduce the economic effects of the proposed Action (see responses to Comments 15-1 and 15-2).

COMMENT LETTER #16

From: "Jay Bushman" <jay@nothingtoit.com>

To: <silverkingpubliccomment@dfg.ca.gov>

Date: 4/29/2009 4:22 PM

Subject: rotenone

I have been reading about the Paiute cutthroat project and was wondering what the time is for killing the stream and then reintroducing the species. Does this happen in one season? 16-1

Also, is their a Paiute cutthroat hatchery program anywhere? 16-2

Lastly, what is the effect of rotenone on the aquatic insects of the stream? 16-3

Thank you very much for your service.

Sincerely,

Jay Bushman

Jay Bushman
General Manager
Nothing to It! Culinary Center
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RESPONSE

Comment Letter 16

Jay Bushman
April 29, 2009

16-1
See Section 3.2.2.3 (Fish removal) of the EIS/EIR regarding the timing and duration of the project. See Section 3.2.2.5 (Post-fish removal) of the EIS/EIR regarding Paiute cutthroat trout reintroduction.

16-2
There is no hatchery program for Paiute cutthroat trout.

16-3
Thank you for your comment. Please see Section 5.1.4.2 (Alternative 2: proposed Action) of the EIS/EIR which analyzes the effects of rotenone on aquatic insects.

COMMENT LETTER #17

From: "Bruce Warden" <BWarden@waterboards.ca.gov>

To: "Stafford Lehr" <SLEHR@dfg.ca.gov>

CC: "Lauri Kemper" <LKemper@waterboards.ca.gov>

Date: 5/4/2009 3:31 PM

Subject: Request for Evaluation of Powdered Rotenone (carrier-free) in the PCT Restoration Project Final EIS/EIR

Hi Stafford,

We have been discussing the issue of treatment of Tamarack Lake in the event fish are found during pre-project monitoring. In our numerous discussions on the topic, the use of powdered carrier-free rotenone has been suggested as a treatment method that would minimize potential negative environmental effects compared to the other rotenone formulations assessed in the Paiute Cutthroat Trout Restoration Project Draft EIS/EIR document, specifically Nusyn-Noxfish or CFT Legumine™

As a Responsible Agency under CEQA, we request that powdered rotenone (carrier-free) be evaluated in the Final EIS/EIR. 17-1

The "Water Quality Objectives for Fisheries Management Activities Using the Fish Toxicant Rotenone" section in the Lahontan Water Board Basin Plan (pages 3-11 to 12) require that no chemical residue be detectable two weeks after chemical treatment. We ask that environmental degradation rates of rotenone be assessed with this specific requirement in mind. This would entail, at a minimum, assessment of modes of rotenone dissipation such as volatilization, chemical breakdown with exposure to UV light and biological degradation, including assessment of degradation rates (half-life, rate constants, etc.) and environmental inputs (Temperature, Q10, etc.). Additionally, it would also likely require measurement or estimation of environmental conditions (water temperature, solar UV radiation, day length, etc.) at Tamarack Lake during the expected period of project implementation (late summer, early fall). 17-2

Bruce T. Warden, Ph.D.
Environmental Scientist
Lahontan Regional Water Quality Control Board
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1

RESPONSE

Comment Letter 17

Lahontan regional Water Quality Control Board (LRWQCB)
Bruce T. Warden, Ph.D.
May 4, 2009

17-1
Please see Master Response H.

17-2
Please see Master Response H.

COMMENT LETTER #18

Central Sierra Environmental Resource Center
Box 396 • Twain Harte, CA 95383 • (209) 586-7440 • FAX (209) 586-4986

April 30, 2009

Stafford Lehr
Senior Environmental Scientist
California Department of Fish and Game
North Central Region
1701 Nimbus Road
Rancho Cordova, CA 95670

Dear Stafford:

This letter is in response to the combined Draft EIS/EIR for the Paiute Cutthroat Trout Restoration project in Silver King Creek. Our Center supports the project goal of CDFG and USFWS to restore populations of the threatened Paiute Cutthroat Trout, however we continue to have strong reservations as to how the rotenone treatments will affect the many non-target organisms that make up the complex web of life in the water and surrounding the existing streams.

We understand from the document that Sierra Nevada Yellow-Legged Frog and Yosemite Toad have not been detected in the project area for the past eight years, and we accept the position that it is possible over time that this treatment might likely benefit these species as well. We also understand that the Agencies will continue conducting annual amphibian surveys along with pre-treatment surveys, during which these species (if found) will be captured and relocated to nearby suitable habitat. 18-1

Our Center supports the Agencies effort to locate and protect these national forest Sensitive Species. We encourage the Agencies to consider actively reintroducing both the Sierra Nevada Yellow-Legged Frog and Yosemite Toad back into suitable habitat within the project area after the two or three years of rotenone treatments are completed, at the time when the Paiute Cuttroat Trout is being reintroduced back into Silver King Creek. 18-2

As you are already aware, that is considerable mistrust of government agencies that propose to apply poison to kill non-native fish in order to "sterilize" a stream system so that native fish can be re-stocked. If the agencies wish to move past that lack of trust, it would be wise to make every effort possible to be transparent, forthright, and open in terms of acknowledging what works as planned and what doesn't. If wildlife is found to be poisoned (whether it is a few frogs discovered or something else), it is important for the agencies to be clear in reporting the negative results as well as publicizing the 18-3

positive planned reintroduction of fish into the sterilized creek. Any deceit on the part of those implementing this project would exponentially increase opposition to future projects that might propose similar treatments. 18-3 continued

Thank you for considering our comments and please keep us informed of further opportunities to comment on this project.

Sincerely,

Lindsey Myers, Staff Biologist

RESPONSE

Comment Letter 18

Central Sierra Environmental Resource Center (CSERC)
Lindsey Myers
April 30, 2009

18-1
See Section 5.1.4.2 (Alternative 2: proposed Action) and 5.2.4.2 (Alternative 2: proposed Action) in the EIS/EIR and response to Comment 1-25 regarding impacts to non-target species and food web interactions.

Comment noted and considered. Description of the proposed Action regarding amphibians is presented in Section 5.2.4.2 (Alternative 2: proposed Action) in the EIS/EIR.

18-2
Comment noted and considered.

18-3
Comment noted and considered. The Agencies will continue our outreach efforts through the remainder of the project, if approved.

COMMENT LETTER #19

April 28, 2009

Paiute Cutthroat Trout Restoration Project Draft EIS/EIR

1.5 I want to lend my support to alternative 2. I recognize the need to recover, reestablish and expand the range of this fragile species. 19-1

1.6 Comments on environmental impacts. Biological impacts on the macroinvertebrates will most likely be naturally mitigated from upstream populations as seen in other areas where rotenone has been applied or where other poisons have entered waterways in California. I also believe that some of these creatures will escape the effects of the rotenone application. I do however question the less than significant finding localized economic recreation effect. The local pack station will most likely lose income from the closure of fishing in the designated area. The rest of the County probably derives little if any economic benefit from the existing fishery due to the remoteness of the affected area. Going along with this thought, I doubt the local economy except the pack station will benefit significantly from the potential re-opening of this fishery. 19-2 19-3

The document which I was not able to devote the time to read in its entirety appears to be well thought out, studied and presented. Thanks for allowing comments.

Henry "Skip" Veatch

Alpine Supervisor

District 2

1

RESPONSE

Comment Letter 19

Henry "Skip" Veatch
Alpine Supervisor, District 2
April 28, 2009

19-1
See Master Response E regarding comments supporting the project.

19-2
Thank you for your comment. The Agencies agree with these comments regarding the nature of impacts on aquatic macroinvertebrates and repopulation of the project area (see Section 5.1.1.3 regarding environmental impacts on aquatic biota).

19-3
The EIS/EIR states that the proposed Action "would likely result in adverse economic effects on specialized local businesses" but that these impacts "may be offset by the beneficial economic impacts associated with implementation of the proposed Action." It finds these impacts less than significant at the regional level because of the "abundant recreational opportunities available in the area, including other parts of the Carson-Iceberg Wilderness Area, which would remain open to recreation use." It finds that in the long term, the proposed Action would have a beneficial regional impact on economic resources if the trout fishery were re-established, particularly with native Paiute cutthroat trout. These benefits would entail increases in business sales, jobs and income, as well as recreation-based economic values, relative to existing and future No Action conditions.

The Agencies understand the Antelope Pack Station is close to the project area and could be affected by closure of Silver King Creek. Therefore, the Agencies are considering several measures to reduce the economic effects of the proposed Action including minimizing the amount of time the project area is closed to fishing by implementing Alternative 2. This alternative would result in the shortest closure.

COMMENT LETTER #20

Statement of Steven K. Berg regarding proposed treatment of Silver King Creek, Alpine County, CA.

I am very pleased to be able to express my opinion regarding the proposed chemical treatment of Silver King Creek in 2009, in order to rid several stream miles of hybrid trout in favor of replacement by pure strain Paiute Cutthroat. I have read the entire 646 pages of the draft EIS/EIR. Since I am not a fisheries biologist, many of the pages relating to genus/species of freshwater insects in various stages of life are beyond my specific level of understanding; however, I do get the "gist" of the report.

To start, I will proudly disclose that I hold one of the first 100 CDFG *Heritage Trout Challenge* certificates issued and that I am a huge fan and supporter of this program. One of the heritage trout I have caught is the Paiute Cutthroat from Upper Trout Meadow in Silver King Creek, Alpine County. While this area is and has been closed to fishing for the past 40 years, I was selected to be one of the fortunate 8 anglers to take part in the CDFG study last August. The purpose was to investigate the possibility of limited opening of Silver King Creek above Llewellyn Falls to catch-and-release fishing during the multi-year period that Silver King Creek *below* the Falls will be treated, checked and rehabilitated; in short, an alternative fishing option while part of the stream is to be closed. 20-1

The fishing experience was memorable for many reasons, including the opportunity to spend a few days in the high Sierra back country and enjoy pristine meadow and forest territory that is largely untrammeled. But the most important part of the trip, for me, was being able to catch a rare, beautiful endangered/threatened trout species *in its native habitat*. The thrill of such an accomplishment will remain with me for the rest of my life, and has encouraged me to seek out the five remaining heritage trout in the HT Challenge during 2009. While the certificate is beautiful and treasured, it is only a physical representation of the actual activities and links in the chain of events leading to the high-country angling success itself.

It seems to me that, if for some reason (e.g., environmentalists, misguided judicial action, etc.), the chemical treatment of Silver King Creek above Llewellyn Falls is halted and not allowed to proceed, the Paiute Cutthroat will continue to be listed and the limited remaining pure strain habitat waters will remain closed to fishing. That means that an indeterminate number of trout fisherman who would thrill at the prospect of catching a rare trout in its native habitat, will be denied that opportunity. The fishery will remain closed, and the trout will still remain an elusive mystery. 20-2

Further, without expansion of the pure strain Paiute territory, the chances of some type of catastrophic event wiping out the species is enhanced. Adding 6 or 8 or 10 miles of stream habitat will go a long way toward insuring continued existence of this natural treasure. 20-3

1

COMMENT LETTER #20

Finally, after much (admittedly) amateur research, I have reached the conclusion that rotenone treatment will be efficient, non-lethal – even non-threatening – to most area wildlife and certainly humans. I understand that it does not "poison" the water, but instead kills fish by entering their very sensitive gill system and blocking their ability to take in or process oxygen, thus suffocating them. Further, rotenone can be applied in very sparse levels, and disperses quickly. With the addition of potassium permanganate to stream flow at the lower end of the treatment section to neutralize the rotenone, there will be no "poison" chemical reaching East Fork Carson River. 20-4

Therefore, as an informed interested party, I state clearly and unequivocally that I strongly favor chemical treatment of Silver King Creek and proposed tributaries below Llewellyn Falls for the removal of hybrid trout, and the restocking of the Creek with pure strain Paiute Cutthroat. 20-5

Steven K. Berg
4928 Puma Way
Carmichael, CA 95608
916-359-8811
reelberg@surewest.net

2

RESPONSE

Comment Letter 20

Steven Berg
Undated

20-1
Thank you for your comment.

20-2
Thank you for your comment.

20-3
The Agencies agree with this comment. See response to Comment 1-32 regarding risks of stochastic events.

20-4
The Agencies agree with this comment.

20-5
Thank you for your comment. See Master Response E regarding comments supporting the project.

COMMENT LETTER #21

April 30, 2009

CALIFORNIA TROUT
870 Emerald Bay Rd., Suite 303, South Lake Tahoe, Ca 96150
Phone/fax 530-541-3495

501(c)3 Tax Exempt ID: 23-7097680

Pauite Cutthroat Trout Restoration Project
Attn: Stafford Lehr
California Department of Fish and Game
North Central Region
1701 Nimbus Road
Rancho Cordova, CA 95670
Email: SilverKingPublicComments@dfg.ca.gov

Re: Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the proposed Paiute Cutthroat Trout Restoration Project.

Dear Mr. Lehr:

California Trout would like to express our **support** for the proposed **Alternative 2** of the Paiute Cutthroat Trout Restoration Project prepared by the U.S. Fish & Wildlife Service (USFWS) and California Department of Fish and Game (CDFG). In addition to providing this comment letter on behalf of California Trout, our new **Northern Sierra Regional Program Manager has actively solicited additional support comment letters during the public review process** (*see attached for those received directly*) at local events, through email alerts to California Trout's nearly 7,000 members statewide, and by sharing support letter templates with partnering groups like Trout Unlimited, all in an effort to help move this crucial project forward.

Although implementation of the recovery plan has been stalled by litigation in the past, we are pleased to see the process now being resolved and moving forward with all potential environmental threats being addressed by the preparation of an (EIS/EIR) by the USFWS and CDFG. In CalTrout's recent report, SOS: California's Native Fish Crisis, Paiute were given a score of "2". This means they're vulnerable to extinction within the next 100 years in their native range without substantial intervention.

CalTrout believes that the successful restoration projects implemented by CDFG and USFWS on the upper reaches of Silver King Creek and its tributaries, which resulted in 21-1

COMMENT LETTER #21

pure-strain Paiute populations, serve as an excellent example of what can be accomplished in the remaining 11 miles of Silver King Creek. If successful, the Paiute will be restored to its full native range and set the stage for eventually delisting the species. Recovering the Paiute and removing it from the endangered species list would be an unparalleled conservation victory for California and demonstrate to the nation just how critical the ESA is for bringing our fish and wildlife resources back from the brink of extinction. 21-1 continued

Rotenone occurs naturally in the roots and stems of several plants. Research shows that its environmental impacts are minimal and its harmless to humans when applied properly. This option would most thoroughly remove the introduced species that threaten the long-term survival of Paiute. 21-2

When Rotenone is used as a fisheries tool to eradicate non-native species for a native species reintroduction, it alone cannot ensure long-term success for the reintroduction. Once a non-native species is eradicated, for instance, it may be reintroduced through active planting by individuals or by migration. In addition to chemical treatment, **California Trout would like to stress their support of necessary follow-up management actions to minimize or neutralize the possibility of non-native reintroduction.** Such steps may include development of barriers upstream and downstream of the reintroduced habitat area (to prevent migration of non-native species) and/or active stream monitoring by regulatory personnel, volunteers, or others to prevent individuals from planting non-native species. 21-3

Likewise, if the habitat in which a reintroduction takes place is not healthy enough to allow for long-term survival of the reintroduced species, then the use of rotenone is inappropriate if used alone. In this case, restoration measures that re-establish stream processes and characteristics that support a healthy population of the reintroduced species must be taken to ensure long-term success. 21-4

California Trout appreciates all the Department is doing to protect and restore this native legacy species for future generations to enjoy. We hope to continue to partner on this and other projects to protect and restore wild and heritage trout in California. If you have any suggestions for how we may be of future assistance or have any questions don't hesitate to contact our Northern Sierra Regional Program Manager directly.

Sincerely,

Jenny Francis

Jenny Francis
Northern Sierra Regional Program Manager
California Trout
PO Box 9122
SLT, Ca 96158

2

RESPONSE

Comment Letter 21

California Trout
Jenny Francis, Northern Sierra Regional Program Manager
April 30, 2009

21-1
The Agencies agree with the comment.

21-2
The Agencies agree with the comment.

21-3
The Agencies agree with the comment. See Master Responses C and D as well as the responses to Comment 1-7, 1-38 and 2-42 regarding fish barriers. In addition, see the response to Comment 1-18 regarding post-implementation monitoring of the project area.

21-4
The Agencies agree with the comment. However, because the treatment area is the historic habitat of Paiute cutthroat trout and habitat quality has improved in recent years with the removal of grazing, the Agencies do not believe habitat restoration, in addition to the removal of hybridizing species is needed.

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ATTACHMENT 1

Project Support Letters

From: "Randy van Vliet" <rvanvliet@socal.rr.com>
To: <SilverKingPublicComment@dfg.ca.gov>
Date: 4/17/2009 10:06 AM
Subject: Silver King Paiute restoration

To whom it may concern,

I would very much be interested in volunteering in what ever way I can with the proposed Silver King restoration project this year. In the past, I have volunteered numerous years with Russ Wickwire in sampling for species of fish. In addition to this, I am an active proponent in allowing fishing opportunities for native species in their native drainages. I am the 3rd certified person (first really, if you discount the honorary folks, like Joseph Tomelleri and another individual) to complete The Heritage Trout Challenge.

I can be reached at this email address, or my cell phone number is 818 370-1129.

Sincerely,

Randy van Vliet.

From: "Lahti,Derald J" <Derald.Lahti@edwardjones.com>
To: <SilverKingPublicComment@dfg.ca.gov>
Date: 4/17/2009 12:59 PM
Subject: Paiute restoration

Hello,

I am in favor of Alternative 2 to return the Puiute trout to its native reach in Silver King Creek. Heritage Trout in California are under extreme pressure, and this project would enhance the viability of one of our rarest and most unique species. Thank you for counting my voice and the voices of Stanislaus Fly Fishers in support of this project.

Derald Lahti
President, Stanislaus Fly Fishers
Modesto, CA 95355

Derald Lahti
Financial Advisor
Edward Jones
3020 Floyd Avenue #115
Modesto, CA 95355
(209) 551-5204
www.edwardjones.com

CALIFORNIA FLY FISHERS UNLIMITED

Since 1962, Sacramento's Oldest Fly Fishing Club

P.O. Box 162997 • Sacramento, CA 95816

May 1, 2009

Subject: Paiute Recovery Plan

Dear Mr. Lehr:

As Conservation Policy Director for the 220-member, Sacramento-based California Fly Fishers Unlimited Club, I am writing to express my support for the proposed Alternative 2 of the Paiute Cutthroat Trout Restoration Project prepared by the US Fish & Wildlife Service and California Department of Fish and Game.

Treating the remaining eleven miles of Silver King Creek with rotenone will give the Paiute its best chance at full recovery in its native range.

Recovering the Paiute and removing it from the endangered species list would be an unparalleled conservation victory for California and demonstrate to the nation just how critical the Endangered Species Act is for bringing our fish and wildlife resources back from the brink of extinction.

I appreciate all that you are doing to protect and restore this magnificent native species for future generations to enjoy.

Sincerely,

Bill Felts

Bill Felts
Conservation Policy Director
California Fly Fishers Unlimited

SAC-SIERRA
CHAPTER

TROUT
UNLIMITED

P.O. Box 1818
Shingle Springs CA 95682

Our mission: To conserve, protect and restore coldwater fisheries and their watersheds in the Sacramento Valley and the Sierra

April 20, 2009

Mr. Stafford Lehr
California Department of Fish and Game
1701 Nimbus Road
Rancho Cordova, CA 95670

Dear Mr. Lehr:

PAIUTE CUTTHROAT TROUT RESTORATION PROJECT
DRAFT EIR/EIS

The Sac-Sierra Chapter of Trout Unlimited urges that the Paiute Cutthroat Trout Restoration Project Draft EIR/EIS be adopted and that Alternative 2, as described in the referenced EIR/EIS, section 3.2.2, be implemented as recommended.

Our Chapter strongly believes that the recommended Alternative 2 is the only viable method to reintroduce Paiute Cutthroat Trout into the reach of Silver King Creek below Llewellyn Falls that will prevent hybridization with non-native species. We further believe that it is in the interest of the State of California and its people to reestablish the Paiute Cutthroat Trout in its native range, establishing a viable, sustaining population, in order to facilitate its removal from the list of threatened species under the Endangered Species Act of 1973.

After the widely agreed success of the removal of Northern Pike from Lake Davis, we believe that Alternative 2, which includes application of the piscicide rotenone, is a safe and effective method of removing non-native species from Silver King Creek. The Lake Davis experience, plus the additional monitoring activities described in the Draft EIR/EIS, provides a high degree of confidence that Alternative 2 will safely achieve the desired result.

Our Chapter also urges the Department to carefully consider applying rotenone to Tamarack Lake to assure that no non-native species may later infest Silver King Creek.

We thank you for the opportunity to present our views on this important project to the Department.

Yours very truly,

Kevin Mather

Kevin Mather
President

April 23, 2009

DFG-Silver King Restoration Project
Attn: Stafford Lehr
1701 Nimbus Rd.
Rancho Cordova, CA 95670

Dear Mr. Lehr:

Our club, Diablo Valley Fly Fishermen (DVFF), located in Walnut Creek, CA is the largest fishing club in California with over 300 members. Our passion is fly-fishing for native trout, and we know that maintenance of each fishes' habitat is essential to their survival. An indication of our dedication to native fish is that our club has more members who have earned the heritage trout challenge than any other club. We view conservation as an essential element of our club's mission.

That being said, we would like to fully endorse the proposed Paiute Cutthroat Trout Restoration Project for Silver King Creek, and its Alternative 2: Proposed Action (Rotenone Treatment). While this alternative is not without some environmental risks, the Draft EIS/EIR certainly indicates that these risks will be mitigated as much as possible. Alternative 2 provides the most viable method to ensure not only the survival, but also the potential for a viable Paiute Trout fishery.

As has been reported by many recent stories the health of our fisheries in California has been in great decline. Projects like this provide an example of how we can turn around a threatened species, and give it another chance. Let us hope we will have the opportunity to add this species to the heritage trout challenge in the future.

Sincerely,

David Lipscomb

David Lipscomb
Conservation Chair
davidlipscomb@comcast.net

From: "Jim Lowe" <rodsmith@highcountryflyfisher.com>
To: <SilverKingPublicComment@dfg.ca.gov>
Date: 4/27/2009 12:37 PM
Subject: Silver King Creek Restoration

To whom it May Concern,

Several years ago I was part of a Trout Unlimited Group that backpacked/packtrained into Silver King Creek to electoshock non-native fish from Silver King Creek and move them to other waters. You may be familiar with the project picture that had been up on the North Bay TU Chapter website (http://www.tucalifornia.org/Paiute-Cutt.html), that was me, front and center, net in hand waiting for the next electoshocked fish. This was done in preperation for the introduction of rotenone. Here we are, so many years later that I can not recall when I was there and the Paiute have still not been restored.

As a tax payer, I find this unacceptable. I understand that some groups, notably the Center for Bio Diversity are concerned about the ecological impact on the stream, but from what the DFG rep at the electroshocking told me, this is a rather simple and straight forward processes that would have little long term affect on the wilderness. I think if anything, the Castella spill on the Upper Sacramento shows that the non-fish populations in the stream will bounce back relatively quick. It seems a no brainer to implement option 2 of the EIS/EIR review. (Alternative 2 to be proper.) The Paiute are endangered and I suspect that any rare non-fish species, if they exist, will simply repopulate themselves from above Lewellyn Falls.

Please lets finally get this done, save a species and stop wasting tax payer money on court costs. If DFG would like volenteers for this project, I would be perfectly willing to volenteer my time again.

Thank you and best regards.

Jim Lowe High Sierra Fly Fisher / Short Rod Aficionado

From: "Munday, Pat" <PMunday@mtech.edu>
To: <SilverKingPublicComment@dfg.ca.gov>
Date: 4/28/2009 3:31 PM
Subject: Support Alt 2 for Paiute CT Restoration

To whom it may concern:

I am writing concerning the Paiute Cutthroat Trout Restoration Project. I'm in favor of implementing Alternative 2, Proposed Action (Rotenone Treatment), to help restore the Paiute cutthroat to its native range.

I have extensive experience as a native salmonid activist, historian, and philosopher. I have seen Rotenone Treatment used successfully on similar projects here in Montana-cf. the Westslope Cutthroat Trout restoration project by Montana Fish, Wildlife & Parks on Cherry Creek watershed of the Madison River.

Thank you,

Pat Munday, PhD

Professor of Science & Technology Studies

Montana Tech

Butte MT 59701

Email: pmunday@mtech.edu <mailto:pmunday@mtech.edu>

Voicemail: 406.496.4461

My EcoRover Blog: http://ecorover.blogspot.com <http://ecorover.blogspot.com>

April 28, 2009

sent via email to:
SilverKingPublicComments@dfg.ca.gov

Paiute Cutthroat Trout Restoration Project
Attn: Stafford Lehr
California Department of Fish and Game
North Central Region
1701 Nimbus Road
Rancho Cordova, CA 95670

Robert D. Williams
State Supervisor
Nevada Fish and Wildlife Office
U.S. Fish and Wildlife Service
1340 Financial Boulevard, Suite 234
Reno, NV 89502
Fax (775) 861-6301

Re: Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the proposed Paiute Cutthroat Trout Restoration Project.

Dear Mr. Lehr and Mr. Williams:

On behalf of Trout Unlimited (National) and the TU Tahoe-Truckee Field Office, we would like to convey our strong **support** for **Alternative 2** of the Paiute Cutthroat Trout Restoration Project prepared by the U.S. Fish & Wildlife Service (USFWS) and California Department of Fish and Game (CDFG), which involves the application of liquid rotenone to eradicate hybridized trout from Silver King Creek and associated tributaries.

Organizational Background

Trout Unlimited (TU) is the oldest and largest coldwater fish conservation organization in North America. TU's mission is to conserve, protect and restore native trout and salmon populations throughout their historic watersheds. TU

accomplishes this mission through a combination of direct advocacy for changes in law and policy, organizing of sportsmen, public education and outreach, research and dissemination of new science, and on-the-ground conservation projects implemented by TU's 150,000 grassroots members and chapter leaders.

TU, based in Arlington, Virginia, operates field offices in states and regions with especially high values for coldwater fisheries and habitat. California is one such state, with its exceptional fishing and hunting opportunities, eleven native species of trout and salmon (the most of any state outside of Alaska), and thousands of miles of rivers. However, many of California's native fish are imperiled and face a multitude of threats, including human development, water use, and now climate change. Native trout that TU is working to protect and restore in California include the Lahontan cutthroat, the Paiute cutthroat, central and southern coastal steelhead, the California golden trout, and coho salmon.

General Comments

As you are aware, the Paiute is one of the rarest trout in the U.S., being native to only a 12 mile section of Silver King Creek in Alpine County, CA and the Paiute is listed as "Threatened" pursuant to the Endangered Species Act (ESA). Trout Unlimited feels that the Paiute Cutthroat Trout Restoration Project is both necessary and appropriate to achieve full reintroduction of the Paiute cutthroat trout. We are aware and know the implementation of the Paiute Cutthroat Trout Recovery Plan has a long history and contentious past stalled by litigation. Our hope in providing comments is to show there is considerable public support from local, state and national interests for the implementation of this project. By doing so, TU hopes to avoid any potential environmental and social threats/conflicts that might once again stall the recovery of Paiute cutthroat trout. I am confident that agency staff has addressed these concerns by the preparation of a joint EIS/EIR by the USFWS and CDFG.

The success of this project, implemented under Alternative 2, would allow restocking with pure strain Paiute Cutthroat and would fully restore this native trout to its original range. This is important to Trout Unlimited and our members. The North Bay Chapter of Trout Unlimited started working on Paiute cutthroat trout issues back in the late 70's and early 80's. Leo Cronin spearheaded the effort, and when health started to fail, John Regan stepped up and took leadership. Trout Unlimited sees it fit to honor the commitment and volunteerism of both these men and so many others by implementing Alternative 2 of the plan. The broader goal is delisting the Paiut from the

Endangered Species List, which would be a first for any fish species in the U.S. The opportunity to make this all happen has never been more apparent or critical.

Trout Unlimited appreciates the opportunity to comment on this joint EIS/EIR, and feel the time to recover one of California's most imperiled native fish species is now, urgent and appropriate. We expect our comments regarding the Paiute Cutthroat Trout Restoration Project prepared by the U.S. Fish & Wildlife Service (USFWS) and California Department of Fish and Game (CDFG), will be taken into full consideration by you and your staff. On behalf of the fish and game resources of California and Alpine County, and of hunters and anglers nationally and in the State of California, we thank you for the opportunity to comment. We look forward to working closely with the CDFG and USFWS, Alpine County, and the Humboldt-Toiyabe National Forest to develop ecologically sustainable, manageable, and enforceable management plans in the future. Thank you for all that you are doing to protect and restore this incredible native species back to its historic range for future generations to enjoy.

Sincerely,

David William Lass
Trout Unlimited
Northern California Field Coordinator
10356 Donner Pass Rd.
Truckee, CA 96161
Cell: (530) 388-8261
Office: (530) 587-7110

Chuck Bonham
Senior Attorney/Trout Unlimited California State Director
1808B 5th Street
Berkeley, CA 94710
Office: (510) 528-4164

John Regan
Native Trout Project Leader
California Trout Unlimited
(541) 595-0979

Drew Irby
Council Chairman
California Trout Unlimited
info@tucalifornia.com

John Roberts
Vice President
Tahoe Truckee Fly Fishers
(530) 448-6268

TROUT UNLIMITED

April 28, 2009

Mr. Stafford Lehr
Senior Environmental Scientist
Paiute Cutthroat Restoration Project
California Department of Fish and Game
North Central Region
1701 Nimbus Road
Rancho Cordova, CA 95670

Via Fax: (916) 358-2912

Dear Mr. Lehr,

On behalf of the 13,000 members of Trout Unlimited of California (TUCA), we are writing to express our support for Alternative 2 as stated in the Paiute Cutthroat Restoration Project draft EIS/EIR. Trout Unlimited of California and specifically, the North Bay Chapter of Trout Unlimited has been a strong advocate of the restoration of the Paiute Cutthroat to Silver King Creek and its tributaries for over twenty five years. Our members have testified at hearings, written letters of support, and organized and participated in restoration projects in an effort to fully restore the Paiute Cutthroat to its native range. We have thousands of hours of volunteer time and thousands of dollars invested in one of the most important trout restoration projects in the United States.

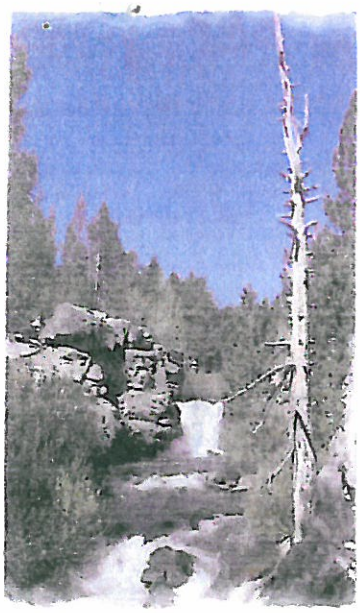
While many view this as a fishing issue, we at Trout Unlimited of California view this project as something much more important. This is an issue of biological diversity and preserving the genetics of a trout species that has existed on the edge of extinction for too many years. We now have all the necessary science and tools to restore the Paiute to its full native range within the next few years. This would be a first for any trout species and an opportunity we cannot allow to slip away.

We would like to thank the California Department of Fish and Game, the United States Fish and Wildlife Service and the United States Forest Service for all of the hard work that has gone into this project over many years.

Sincerely,

Drew Irby
Trout Unlimited of California (TUCA) Council Chair
Office: 949-588-5458 Email: info@tucalifornia.org

/s/ John Regan
Native Trout Project Coordinator Email: johnkevinregan@yahoo.com



Alpine County Fish & Game Commission

Chairman: Dave Zellmer
PO Box 3
Markleeville, CA 96120
(530) 694-2114

Commissioners:
Bruce Huff
Markleeville, CA

Leonard Turnbeaugh
Markleeville, CA

Todd Branscombe
Markleeville, CA

Earl O'Neal
Woodfords, CA

Todd Sodaro
Markleeville, CA

Stefan Krayk
Bear Valley, CA

April 22, 2009

Stafford K Lehr
State Of California
Department Of Fish and Game
North Central Region
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670

Re: Paiute Cutthroat Trout Restoration Program
Silver King Creek
Humboldt-Toiyabe National Forest- Alpine County, CA

Dear Mr. Lehr,

At the regular meeting of the Alpine County Fish and Game Commission held on April 21, 2009, it was moved, seconded and Unanimously carried supporting Alternative 2: Proposed Action (Rotenone Application) in the Draft Environmental Impact Statement/Environmental Impact Report for the Silver King Creek Paiute Cutthroat Trout Restoration Project.

The Commission supports the California Fish and Game and the U.S. Forest Service with their endeavors with the Paiute Cutthroat Trout Restoration Project.

Sincerely,

David O. Zellmer
Alpine County Fish and Game

From: <riderhaggard@yahoo.com>
To: <SilverKingPublicComment@dfg.ca.gov>
Date: 4/30/2009 11:27 AM
Subject: Paiute Recovery Plan

Mr. Stafford Lehr

Dear Mr. Lehr,

I am writing to express my support for the proposed Alternative 2 of the Paiute Cutthroat Trout Restoration Project prepared by the US Fish & Wildlife Service and California Department of Fish and Game.

Treating the remaining eleven miles of Silver King Creek with rotenone will give the Paiute its best chance at full recovery in its native range.

While I recognize that you are likely to face strong, scientifically-illiterate, opposition to the use of this piscicide, I urge you to stay firm, even in the face of lawsuits. The lies propogated by those who claim that rotenone is poisonous to humans, and that it persists in the environment, cannot go unchallenged, or we will lose the ability to restore native trout throughout the West

Recovering the Paiute and removing it from the endangered species list would be an unparalleled conservation victory for California and demonstrate to the nation just how critical the Endangered Species Act is for bringing our fish and wildlife resources back from the brink of extinction.

I appreciate all that you are doing to protect and restore this magnificent native species for future generations to enjoy. Thank you,

Sincerely,
Stephen Haggard
168 Southwood Dr.
San Francisco, CA 94112

From: keith pfeifer <kimnkon@pacbell.net>
To: <SilverKingPublicComment@dfg.ca.gov>
CC: dave lentz <dlentz@surewest.net>
Date: 5/1/2009 4:00 PM
Subject: Silver King Paiute Trout Restoration

Dear California Dept of Fish and Game:
I am writing about the proposed restoration project for the Silver King Paiute Trout. As an introduction, I would like to briefly provide my scientific qualifications to support Alternative 2, the use of rotenone to eradicate the non-native trout species downstream of Llewellyn Falls.
My academic degrees include the following:

* Pharm. D. (doctorate of pharmacy) from the University of California School of Pharmacy in San Francisco
* Masters of Science in Marine Biology from San Francisco State
* Ph.D. in aquatic toxicology and environmental sciences from Oregon State University

I worked in private industry as an environmental toxicologist for 6 years, determining the impact of industrial chemicals on fresh
water/marine ecosystems.
Before I retired 4 years ago, I worked for 20 years as a Senior Toxicologist in the Department of Pesticide Regulation, California Environmental Protection Agency. I supervised the group which wrote risk assessments that determined specific regulatory action for the use of pesticides in agriculture (food safety and worker exposure), in the home and garden and for pesticides found in air. I am also an avid fly fisherman and a member of CFFU in Sacramento.
Rotenone has been used for many years as a safe and effective piscicide in the aquatic environment. While there is always a concern that non-target species (e.g. invertebrates, plants) could be impacted, the specific nature of rotenone when used properly for fish should minimize any adverse ecological outcome in Silver King Creek.
Best of luck with your project,

Sincerely,

Keith Pfeifer, Ph.D.
Davis, California

Washoe Tribe of Nevada and California

Environmental Protection Department

May 5, 2009

Paiute Cutthroat Trout Restoration Project
Department of Fish and Game
Attn: Stafford Lehr, Senior Environmental Scientist
North Central Region
1701 Nimbus Road
Rancho Cordova, CA 95670

To Whom It May Concern:

The Washoe Tribe of Nevada and California's Department of Environmental Protection supports efforts to protect native aquatic species such at the Paiute Cutthroat Trout.

Historically the Washoe people depended on fish such as trout for subsistence. The 12 mile section of Silver King Creek in Alpine County, CA. is within aboriginal Washoe territory. Considering that the Paiute Cutthroat Trout is now the rarest trout in the country, and that non-native fish pose the greatest threat to this species, the Washoe Environmental Protection Department supports the proposal by the California Natural Resource Agency Department of Fish and Game and the U.S. Fish and Wildlife Service to eradicate non-native trout from the project area using the piscicide rotenone, to neutralize the rotenone downstream of Silver King Canyon at its confluence with Snodgrass Creek using potassium permanganate and to restock Silver King Creek with the native Paiute Cutthroat Trout (*Oncorhynchus clarki seleniris*). Of the three project alternatives evaluated in the Draft EIS/EIR, WEPD supports the second option which is the proposed action mentioned above.

WEPD believes that this option is the most effective option that will ultimately help save this important native species from extinction.

Sincerely,

Marie Barry

Marie Barry
Director, Washoe Environmental Protection Department

919 Highway 395 South, Gardnerville, Nevada 89410
(775) 265-4191 • (775) 883-1446 • (530) 694-2339 • FAX (775) 265-3211

April 30, 2009

Stafford Lehr, Senior Environmental Scientist
Paiute Cutthroat Restoration Project
California Fish and Game
North Central Region
1701 Nimbus Road
Rancho Cordova, CA 95670

SUBJECT: Paiute Cutthroat Trout Restoration – Support for Alternative 2

Dear Mr. Lehr,

My father was Leo T. Cronin, a legendary conservationist with Trout Unlimited, who has been a part of many successful restoration efforts including Lagunitas Creek in Marin County and the Paiute Cutthroat Trout in Alpine County. Leo led several restoration efforts in the 1980's and 1990's utilizing hundreds of volunteers and donated supplies to assist the restoration of Silver King Creek, the native stream for the Paiute Cutthroat Trout.

U.S. Fish and Wildlife Service wrote the original restoration plan. The Department of Fish and Game, the U.S. Forest Service, and Trout Unlimited succeeded in restoring miles of Silver King Creek in the 1980's and the 1990's. Projects included miles of cattle exclusionary electric (solar) fencing, bank stabilization, and in-stream log structures. In the 1990's above Llewellyn Falls, Silver King Creek was treated with rotenone to eliminate hybrids. After the treatment, pure strain, Paiute Cutthroat was re-introduced to the stream where they flourished. There were no lingering effects of the treatment on any native aquatic invertebrates or amphibians. Today, cattle are no longer allowed in the Silver King Creek watershed and the stream is in much better health, however, the population of Paiute Cutthroat Trout remain stable but tenuous.

I am writing to express my support for the proposed Alternative 2 of the Paiute Cutthroat Trout Restoration Project prepared by the US Fish & Wildlife Service and California Department of Fish and Game. The plan to treat the remaining eleven miles of Silver King Creek with rotenone will give the Paiute its best chance at full recovery in its native range.

Sincerely,

Michael L. Cronin

Michael Leo Cronin
Fish Biologist
North Bay Chapter
Trout Unlimited