

# Memo



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**Date:** July 24, 2017

**To:** Joint Fact Finding Committee

**From:** Ascent Environmental

**Subject:** **Shoreline Plan EIS – Proposed Fisheries Analysis Approach**

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This memo summarizes the proposed approach for preparing the fisheries chapter of the EIS for the Shoreline Plan, which incorporates input provided by the Joint Fact Findings Committee at the May 10, 2017 meeting.

The EIS will evaluate the effect of each Shoreline Plan alternative on fisheries, including effects on TRPA's fisheries thresholds. TRPA has four fisheries threshold categories: Lake Habitat, Stream Habitat, Instream Flow, and Lahontan Cutthroat Trout. The primary threshold categories that would be affected by the Shoreline Plan are Lake Habitat and Lahontan Cutthroat Trout. The Lake Habitat Threshold is a non-degradation standard that requires no net loss of prime fish habitat, which is defined by substrate size. The Lahontan Cutthroat Trout standard is a policy statement that directs TRPA to "...support, in response to justifiable evidence, state and federal efforts to reintroduce Lahontan cutthroat trout".

TRPA has also adopted an aquatic invasive species (AIS) threshold standard. This threshold is a management standard that states that TRPA must "[p]revent the introduction of new aquatic invasive species into the Region's waters and reduce the abundance and distribution of known aquatic invasive species" and "[a]bate harmful ecological, economic, social and public health impacts resulting from aquatic invasive species."

Any effect that would reduce the ability to attain or maintain the fisheries or AIS thresholds, or would otherwise substantially degrade fisheries or aquatic habitat, would be considered a significant impact. An impact would also be considered significant if it would: 1) substantially change the diversity or distribution of aquatic species, 2) reduce the number or viability of a special-status fish species, 3) result in a barrier to fish movement, or 4) substantially reduce the suitability of habitat for native or game fish species. The EIS will include feasible mitigation measures for any significant impacts. The fisheries chapter will include two primary sections: Setting, and Environmental Impacts and Mitigation Measures, as described below.

## Setting

This section will summarize laws, regulations, and policies that apply to Lake Tahoe's fisheries. It will describe the TRPA fisheries and AIS thresholds, as well as applicable state and federal laws and policies. An overview of AIS prevention and control programs, fisheries management, and habitat enhancement programs will also be provided.

The setting will also summarize the existing aquatic ecosystem in Lake Tahoe. It will include TRPA's 2016 fish habitat map to quantify the amount of marginal, feed and cover, and spawning habitat. It will also include a discussion of other factors that affect habitat suitability including water depth, temperature, pelagic water quality, the presence of AIS, and the presence of food sources. The section will summarize the major differences in habitat requirements between the various native and game fish species present in Lake Tahoe. This section will also provide an overview of the biologic community in Lake Tahoe, including the conservation status of aquatic species present in the lake, a summary of fish introductions/reintroductions, a summary of changes in community composition over time, and a discussion of AIS populations.

The setting section will be provided to the JFF Fisheries Subcommittee for review and comment prior to completion of the environmental impacts and mitigation measures section.

## **Environmental Impacts and Mitigation Measures**

The Environmental Impacts and Mitigation Measures section will evaluate the Shoreline Plan alternatives to determine if implementation of the alternatives would result in a significant impact related to fisheries. The analysis will evaluate the following potential impacts of each alternative at an equal level of detail:

### **Loss of Prime Fish Habitat**

This impact will consider whether the number, location, and design of new or rebuilt shoreline structures would result in a net reduction in the amount of prime fish habitat, as defined by TRPA's substrate-based criteria. The analysis will include a review of proposed design and location standards for shoreline structures to quantify the amount of TRPA-designated prime fish habitat that could be affected by new or rebuilt structures. It will also include a review of any proposed habitat enhancement of off-set requirements to evaluate whether the requirements and implementation/enforcement procedures could result in a net reduction in the amount of TRPA-designated prime fish habitat.

### **Reduction in the Quality of Fish Habitat**

This impact will evaluate whether and how new or rebuilt shoreline structures, changes to dredging operations, and/or changes in watercraft use would reduce the suitability of habitat for native and game species. It will include a review of proposed standards for shoreline structures, including 1) pier design standards, 2) requirements related to buoy blocks, 3) marina design standards, 4) dredging provisions, and 5) other existing and proposed regulatory requirements. Activities that could degrade habitat quality, such as dredging, vegetation removal, and substrate disturbance will be quantified, where feasible. This review will determine if the alternatives could allow for substantial degradation of fish habitat quality through substrate siltation from dredging or in-lake construction, substrate disturbance from buoy block placement or movement, loss of cover and shade from vegetation or existing structure removal, or other means.

This impact will also incorporate the results of an analysis of littoral processes from the hydrology and water quality chapter. If the hydrology and water quality analysis determines that the alternatives could result in a significant effect on littoral processes, then those changes to littoral processes will be considered to determine if they could result in degradation of fish habitat through siltation of spawning habitat or other means.

### **Increased Risk of AIS Introduction or Spread**

This impact will determine whether the alternatives would increase the potential for aquatic invasive plant or animal species (AIS) to be introduced or spread within Lake Tahoe. The analysis will quantify the annual increase in watercraft launches and watercraft use that could occur with buildout of each alternative, and evaluate the risk of increased spread of AIS due to the increase in watercraft. It will incorporate data

collected by the AIS inspection program on the total number of inspections, decontaminations, and positive AIS detections to estimate the relative increase in the risk of AIS introductions that could result from the increase in watercraft launches.

The analysis will include a review of any proposed funding and implementation programs included in the alternatives to determine if and how the alternatives would affect the success of AIS prevention and control programs by altering funding or enforcement levels, or changing existing AIS requirements (e.g., blue boating requirements). It will also evaluate proposed shoreline structure standards to determine if the alternatives would allow structures that could increase the potential for uninspected watercraft to launch (e.g., private boat ramps), or allow for activities or the development of facilities that would enhance habitat for AIS (e.g., warm water lagoons or marinas with little water circulation). This analysis will consider the implications of climate change when assessing the impacts of the alternatives on AIS.

### **Obstructions to Fish Movement**

This impact will consider whether shoreline structures assumed under each alternative could result in barriers to fish movement. It will include a review of structure and marina design standards, and stream mouth setback requirements. The analysis will determine if these standards could allow the construction of barriers that would restrict movement into streams or reduce access to spawning habitat.

### **Direct Effects on Native and Game Fish Populations**

This impact will evaluate the potential for each alternative to result in take of a special-status fish species (i.e., Lahontan Cutthroat Trout) or reduce the viability of populations of native or game fish through changes in watercraft use.

The analysis will identify areas of concentrated watercraft activity, including assumed locations of new or expanded boat ramps and marinas. It will then incorporate the watercraft use estimates previously developed with the JFF to estimate the intensity of watercraft use in these areas. The analysis will include a review of scientific literature on the effects of concentrated watercraft use on fish populations. This review will consider the results of available studies that evaluate the effects of sediment resuspension, noise, and substrate disturbance associated with watercraft use on fish habitat abandonment or spawning disruption. The intensity of watercraft use under each alternative will be considered in the context of the literature review to determine if changes in watercraft use would result in habitat abandonment, disruptions of spawning activity, or other direct effects on fish populations.

This impact will also incorporate information on the potential for chemical contamination from the hydrology and water quality chapter. If the hydrology and water quality analysis determines that the alternatives could result in increased concentrations of polycyclic aromatic hydrocarbons (PAHs) or other chemicals, then the level of contamination will be evaluated to determine if it could pose a direct threat to native or game fish species.

### **Direct Effects on Spawning**

This impact will evaluate whether and to what degree watercraft use or beaching, or in-lake construction activities could directly affect fish populations by destroying eggs during the incubation period. The analysis will summarize spawning characteristics of native and game species in Lake Tahoe, including the density of eggs within spawning habitat, duration of incubation, and typical water depth over active redds. The expected increases in watercraft use will be considered in the context of these spawning characteristics to determine whether increases in the beaching of watercraft could substantially disrupt redds during the incubation period.

This analysis will also include a review of structure location standards and construction techniques to determine if in-lake construction would disrupt redds during the incubation period. This analysis will account for the timing and level of construction activity, and existing and proposed construction requirements.