

AGENDA

Upper Klamath River Coho Salmon Workshop;
Considerations for Genetic Conservation and Artificial Propagation

February 15-16th
Miners Inn-Best Western, 122 East Miner Street
Yreka, CA

Workshop Purpose: The primary purposes of this workshop are: 1) to review existing information regarding the genetic diversity of Shasta River wild fish, Iron Gate Hatchery coho brood stock, and nearby populations of coho (including Upper Klamath and Scott River populations); 2) to assess the degree of consensus, if any, regarding appropriate brood stock source(s) for any coho supplementation plan that may be implemented in the Shasta River; and 3) to evaluate various coho salmon supplementation techniques for application in the Shasta River. Other populations and/or cohorts of populations in the Upper Basin may require similar intervention efforts in the near future, so consideration will also be given to these populations.

DAY 1 (8:00 am)

Welcome and Review of Workshop Agenda, History, and Purpose

Brief overviews of: a) SONCC coho population status; and b) current conditions of the Shasta, Scott and Upper Klamath. (8:45 am to 12:00 pm)

Population status of Upper Klamath, Scott and Shasta SONCC coho. Toz Soto (Karuk Tribe), Bill Chesney and Morgan Knechtle (CDFG)

Stressors influencing the viability of Upper Klamath, Scott and Shasta SONCC coho populations. Jim Simondet (NMFS)

BREAK

Actions accomplished or underway to address limiting factors in the Shasta River Watershed. Dave Webb (Shasta River CRMP/SVRCD)

Summary of habitat conditions in the Shasta River Watershed- Mike Deas (Watercourse Engineering) and Carson Jeffres (UC Davis Center for Watershed Sciences).

Overview of Iron Gate Hatchery Management Plan. Morgan Knechtle (CDFG)

LUNCH (12:00 pm)

Review currently available genetics of SONCC coho including genetics of Shasta, Scott and Upper Klamath River populations. (1:00 to 3:30 pm)

Michael Lacy (CDFG): Application of conservation genetics principles to salmon recovery.

John Carlos Garza (NMFS): Results of genetics conducted on SONCC coho genetics in the Shasta, Scott and Klamath Rivers.

BREAK

Panel Discussion: (3:30 to 5:00 pm) Panelists will discuss the available genetic science, with a focus on the Shasta River and other pertinent populations in the Klamath Basin, describing the current genetic diversity. In addition, they will discuss brood stock source, availability and viability for any future enhancement activities in the Shasta (and other tributaries). There will be both a question and answer period and a robust discussion among genetic experts (both independent and agency experts) regarding the analysis.

Panelists: John Carlos Garza (NMFS Science Center), Michael Lacy (DFG), Michael Banks (OSU) Shawn Narum (Columbia River Intertribal Fish Commission) and Christian Smith (FWS).

Question from the public.

Adjourn (5:30)

6:00 pm- Evening Mixer- *Strings Italian Café*, 322 West Miner Street, Yreka- dinner options available.

DAY 2
(8:00 am)

Welcome and Summary of Day 1: *Gregory Weber*

Overview of the steps required to establish a supplementation program. *Michael Lacy (CDFG)*

Tools Available for Supplementation (8:45 am to 3:00 pm)

- ***Charlie Lean (Norton Sound Economic Development Corporation)*** - Use of Eyed-Egg Injections into Natural Spawning Gravels for Supplementing Salmon Runs in Nome, AK. Presentation will describe the history, rationale, and methods for using eyed-egg injections to supplement salmon runs in Alaska.
- ***Larry Lestelle (Biostream Environmental, WA)*** - *Strategic Approaches to Supplementing Coho Salmon in the Queets River, WA.* Presentation will describe the rationale, experimental design, methods, and evaluation for several strategies to supplement coho in the Queets River on the Olympic Coast of Washington.

BREAK

- ***Thom Johnson (Point No Point Treaty Council, WA)*** - Comparison of Supplementation Strategies to Recover Coho in Snow Creek, WA, and a Summary of Other Approaches for Supplementation Interventions in the Strait of Juan de Fuca and Hood Canal Areas of Washington State. Presentation will describe the rationale, experimental design, methods, and evaluation for comparing several approaches to supplementing coho in Snow Creek, WA. The speaker will also summarize other intervention approaches being used in that region.
- ***Ben White (Army Corps of Engineers)*** - Use of Captive Brood stock to Supplement ESA-listed Coho in the Russian River, CA. Presentation will describe the genesis, history and approaches (including strategies for outplanting) for using captive broodstock for supplementation intervention to aid in the recovery of ESA-listed coho in the Russian River in Northern California.
- ***John Carlos Garza (National Marine Fisheries Service)*** - Supplementing with Adult Coho to Enable Natural Mate Selection in the Russian River, CA. Presentation will describe the rationale, history, methods, and evaluation for supplementing adult coho from the Warm Springs Hatchery to aid recovery of ESA-listed coho in the Russian River in Northern California.

LUNCH (12:00 to 1:00)

- **Rich Carmichael- (Oregon Department of Fish and Wildlife)**- Presentation will include:
 - Implementation and Effectiveness of Captive Brood stock for Conservation of Threatened Spring Chinook Salmon in the Grande Ronde River Basin, Oregon.
 - An Assessment of Population Productivity, Abundance, and Life History Response to Supplementation of Chinook Salmon in the Imnaha River, NE Oregon.

BREAK

Panel discussion: the suitability of implementing a supplementation program in the Shasta given what has been presented with respect to the genetics, brood stock sources and reintroduction strategies. The panelists will offer advice on what “doable” efforts, focusing on the Shasta, but also considering the Scott and Upper Klamath as relevant. (2:30 to 4:00 pm)

Panelists: Larry Lestelle, John Carlos Garza (NMFS), Michael Lacy (CDFG), Rich Carmichael (ODF&W), and Eric Laudenslager (HSU).

Questions from the public (4:00- 4:30 pm)

Summary, Next Steps and Wrap-up.

Adjourn (5:00 pm)

Workshop Purpose and Background

The purpose of the workshop is two-fold. First, it is to review information related to (1) genetic structure and diversity of coho in the Klamath Basin and (2) possible approaches for supplementation intervention in the upper basin. Second, based on the information presented, scientists participating in the workshop will be asked to provide their informal conclusions or recommendations on one or more approaches for supplementation. Policy representatives of the appropriate decision-making entities in the basin can then use these findings following the workshop to determine courses of action as deemed necessary.

State, tribal, and federal agencies, together with other local entities and conservation groups, have been in discussions about using hatchery supplementation methods to help recover coho populations in the upper portions of the Klamath River basin. Klamath coho populations are part of the Southern Oregon Northern California Coasts (SONCC) coho ESU, which is ESA listed. Many of the Klamath populations are at dangerously low levels and one or more brood lines of some populations are at very high risk of extinction. The Shasta River population is in particularly bad shape and the Upper Klamath and Scott River populations are nearly as bad.

The need for the workshop grew out of concerns by agencies and other entities over the status of the Shasta River coho population. Spawner abundances in the past several years in that river have reached dangerously low levels, threatening extinction. Consequently, Siskiyou County has advocated taking immediate steps to use Iron Gate Hatchery coho stock in the Shasta sub basin for eyed-egg injections into spawning gravels or for fry augmentation with streamside incubators. As discussions occurred between the various interested parties on this matter, it became apparent that a need existed to review all information regarding the existing genetic structure (or differentiation) of coho spawning aggregates in the upper basin, including in Shasta River. No formal review has yet occurred on this matter by the various parties interested in coho recovery. Moreover, it was also apparent that a broader review was needed of various approaches that might be used for supplementation, including ways of addressing genetic issues. Such information would be very helpful in selecting an appropriate course of action for a Shasta River intervention, if one is to occur, as well as for other parts of the basin as the need becomes apparent.

The workshop has been structured to review Klamath-specific information as well as to consider other information from outside the Klamath Basin believed to be relevant to the issues of concern. Over a two-day period, information will be reviewed and discussed that will help decision makers to determine whether and how to intervene in the Shasta River and, if needed, in other parts of the upper basin also.

It is noted that the purpose for intervening with hatchery technology would be to stave off imminent extinctions—to essentially buy time while habitat issues are being addressed. The risk of extinction at the present time is likely much greater for some populations without supplementation intervention than the risk of extinction added by involving hatchery intervention. Furthermore, there have been significant habitat actions taken in the Shasta River, including the acquisition of substantial cold water habitat areas by the Nature Conservancy, which are improving the suitability of certain areas for coho; yet there are few fish remaining to inhabit these areas.

The two matters of primary interest in this workshop are, if supplementation is implemented, the stock source to be used, and methods of supplementation. One possible stock source is Iron Gate Hatchery fish. Iron Gate Hatchery is a hatchery situated at the base of Iron Gate Dam, located at the upper end of the current distribution of the Upper Klamath population. Some concerns exist, however, about the suitability and representativeness of that stock for wide application in supplementation intervention in the upper basin. These concerns involve stock history and possible domestication. Possible alternatives for brood stock include use of captive brood stocks sourced from wild juveniles or the capture of wild adults at weirs for artificial propagation and outplanting.

There is uncertainty about the existing genetic structure and diversity of the remnant populations that still reside in the upper basin. One of the questions that will be explored in the workshop is whether the genetics of remnant runs should be conserved and used as part of any supplementation program that might be implemented.

The workshop is organized to address three overarching questions that would aid decision makers if it is determined that some form of hatchery intervention is needed:

1. What is the existing genetic structure and diversity of the extant population units in the upper Klamath basin—and should it be conserved for the sake of population recovery?
2. If measures should be taken to conserve the existing genetic structure and diversity, what approaches should be considered for acquiring gametes and/or fish (and what life stage), taking into account such issues as effectiveness of genetic conservation, support facilities needed, and risks of catastrophic loss?
3. If supplementation actions are to be implemented, what strategic approaches should be considered, taking into account such issues as genetic effects, expected survival of supplemented fish, impacts on naturally produced fish, and support facilities needed?

The workshop is being structured to engage scientists who are knowledgeable of the upper Klamath basin coho populations, genetic conservation, or different supplementation methods in considering the questions listed above. The format will consist of presentations on the relevant topics by certain individuals, combined with facilitated round-table type discussion to address the key questions, as well as other related questions.

A list of various questions is attached to help participants prepare for the workshop. The list was assembled through many discussions that occurred between workshop participants. It is neither an exhaustive list nor a refined list; some questions are somewhat redundant of others. Moreover, other questions will assuredly arise in the meeting. Ultimately, it is hoped that if panelists are aware of the interest in the various attached questions, the three overarching questions above will be adequately answered for the decision makers.