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 listed as threatened under the ESA. 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 there is concern by some that two of the three cohorts of the Upper Klamath and Scott River populations are following a similar trajectory.

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 subbasin 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. ***A key objective of the workshop is to determine whether some type of small scale artificial propagation project on the Shasta River would be a useful tool for helping to recover this population; if so, what brood stock and techniques should be utilized.***

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. Is the existing genetic structure and diversity of the extant population units in the upper Klamath basin of such a nature that it should 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.