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Summary of Presentation:

Populations of wild steelhead *(Oncorhynchus mykiss)* have declined dramatically from historical levels in the Yakima Basin to a current level of listed under the Endangered Species Act (ESA). Causes of the declines are numerous and well known and regional plans recognize the need to protect and enhance weak upriver steelhead populations while maintaining the genetic integrity of those stocks (NPPC 1995).

Enhancing the species' natural iteroparity (i.e. its ability to spawn more than once in its life) may strengthen wild steelhead populations. Repeat spawners compose only 1.6% of the Yakima River wild run (from data in Hockersmith et al. 1995). Under present conditions, very few (< 5% overall) summer steelhead in the Columbia River – especially in the upper basin – appear capable of exhibiting iteroparity in the impounded, post-development. Based on the empirical iteroparity estimates, these fish should theoretically have significantly greater likelihood of exhibiting iteroparity if they are collected for "reconditioning" in captivity, relative to their ability to exhibit iteroparity in the current impounded, post-development Columbia Basin.

Reconditioning is collecting the steelhead after they have successfully spawned and rearing them in a hatchery setting allowing them time to rebuild the energy reserves needed for proper gondal development and iteroparous spawning.

Approximately 40 % of the returning adult steelhead are collected at the Chandler Juvenile Facility in Prosser with over 90% of those female. The kelts are examined for condition and life stage (pre or post spawn). If the fish meets the established criteria it is it is transferred to Prosser Hatchery adjacent to the collection facility for initial meristic work up. Length and weights are recorded along with PIT tag information of each fish. Fish are treated for parasites and injected with antibiotics then placed in rearing tanks.

A variety of diets and feeding methods have been tested to determine the best method for survival, regeneration of gametes

and fish growth. Preliminary results from the project indicated that significant progress is made during each year of the project due to facility improvements and fish culture techniques.

Various release strategies are being evaluated using PIT tags and Radio tag information. Two groups are short term reconditioned and transported below Bonneville Dam, one group is full term reconditioned and released below McNary Dam and a final group is full term reconditioned and released in the Yakima River. Data is currently being collected on each release group to determine each effectiveness.

Overall kelt survival rates in captivity more than doubled from 18% (2000) to 39% (2001). The 2002 project had a 34% survival rate for the long term reconditioning and a 70% rate for the short term. Radio tag studies and PIT tag detections will continue to be evaluated for release strategies.