Clearwater River Hatchery Programs - Clearwater Fish Hatchery

IDFG Response to the ISRP Comments

ISRP comment #1 from Key Findings section-*The shift to native broodstock and to releases of full term smolts, rather than parr, has been justified based on post-release survival performance; however, the management change appears to have also resulted in increased production of jacks.*

IDFG Response to Comment #1- We do not believe that the data supports a conclusion that the transition to full term smolt releases has increased the proportion of returns for a brood that are jacks (i.e. that it has increased the jacking rate). There does appear to be synchrony in "jacking" rates across hatchery programs and with natural populations that would indicate variation in environmental conditions as being a key contributor. There is no doubt that hatchery fish are returning younger-at-age than natural populations and may be related to size at release. However, we feel that the transition to a full term smolt release strategy was justified. The program would not be sustainable if we relied on a subyearling release strategy.

ISRP comment #2 from Key Findings section-*Although performance of fish in the hatchery is measured based on survival, and in-hatchery survival rates appear to be adequate to the smolt stage (generally 70% and above except for the South Fork in 2008), survival as measured by SASs and SARs is not. With low SAR and SAS results, the hatchery is not producing adult returns that meet its mitigation goals. The program is averaging 5% of mitigation goals to the mouth of the Columbia and a maximum success of only 18.5% of its mitigation goals.*

IDFG Response to Comment #2 We agree that post release survival rates have prevented the program from reaching the numeric mitigation goals; this is true for all the LSRCP Chinook programs. Since 1999, escapement to Lower Granite dam of Clearwater Hatchery origin Chinook salmon has averaged 43% of the mitigation goal to Lower Granite Dam. Even though mitigation goals have not been reached, since 1997 this program has made a significant contribution towards restoring recreational and tribal fisheries in Idaho.

ISRP comment #3 from Key Findings section-*The ecological and genetic impacts of the programs on wild fish are shown primarily through comparisons of life history characteristics between hatchery and wild fish. Although in the presentation it was concluded that impacts to wild fish were not significant, we note that the percentage of jacks among hatchery fish returns has increased in BY 2002 and 2003, and that returns of jacks were higher in 2007, 2008, and 2009, and returns of 3 SW fish were lower.*

IDFG Response to Comment #3- With regards to impacts on wild populations, we don't think we concluded that there were no significant impacts of hatchery fish on natural fish. As we compared life history characteristics of hatchery and natural populations, we indicated for some metrics there were not significant trends and that there was synchrony in the variability for hatchery and natural fish. This synchrony indicates that environmental variation likely influences expression of those characteristics. It is also important to keep in mind that wild populations in the Clearwater River basin were extirpated by

the construction and operation of the Lewiston Dam and that current natural populations are a direct result of supplementation from the hatchery program.

ISRP comment #4 from Key Findings section *Survival rates of smolts have declined from the mid-1990s as numbers of smolts released has increased. The causes of this undesirable pattern are not identified.*

IDFG Response to Comment #4- For the releases associated with the Powell broodstock in the Lochsa River, survival of both hatchery and natural smolts are similar or above the rates observed in the mid-1990s. For the South Fork Clearwater River, survival rates of hatchery smolts are similar to rates observed in the mid 1990s. Since 2004 the survival gap between hatchery and natural smolts to Lower Granite Dam is larger than observed in previous years. We have not identified a cause for this change and are unsure if it will result in a long term trend.

ISRP comment #5 from Key Findings section *Evaluation of supplementation could be improved. In particular, it was not clarified why survival rates of wild smolts exceeded hatchery smolts in 1994-1996, but not in any recent years except 2007 (by a narrow margin). Has the quality (or size) of hatchery smolts risen sufficiently or is there some unknown interaction of released fish and wild fish?*

IDFG Response to Comment #5 Over the history of the program, there have been a few years when the survival of natural smolts have exceeded that of hatchery smolts for the South Fork Clearwater releases and several years where they were similar. Across all Chinook salmon hatchery programs, we generally observe higher survival rates (from release to Lower Granite Dam) of hatchery fish relative to adjacent natural populations. We also observe that SARs for natural fish are almost always higher than those observed for the hatchery populations. The advantage that hatchery fish demonstrate immediately after release is lost at some point.

ISRP comment #6 from Key Findings section *It is unclear why survival to Lower Granite Dam is only 60-70%, whereas it is higher for releases from Powell. What are the primary factors affecting survival of both the hatchery and wild smolts, and how well is that understood?*

IDFG Response to Comment #6- The Powell stock has generally demonstrated one of the highest juvenile survival rates across all our hatchery programs in both the Salmon and Clearwater Rivers. Survival from release to Lower Granite dam in the 60-70% range is good based on all historic data. Regarding explanations of why survival is variable form one release site to the next, one thing that is apparent is the relationship between distances (from release site to Lower Granite Dam) and survival. While distance does explain some of the variation, other factors likely include several environmental factors (temperature, flow, water quality etc.), as well as fish size and condition but we have not described these relationships or interactions.

ISRP comment #7 from Key Findings section *No information was provided on the possibility of residualization of precocious males (mini-jacks) from these increasingly large smolt releases and potential effects on wild fish. This issue may deserve study and discussion among LSRCP entities.*

IDFG Response to Comment #7- The ability to monitor the abundance of mini-jacks historically has been limited to observed fish in the adults traps during the adult migration. More recently PIT tags have been used to estimate the number of fish returning as mini-jacks. As with other stocks of hatchery fish released, we do observe a small fraction (approximately 0.2%) of the smolt release that return as mini-jacks.

ISRP comment #8 from Outlook and Recommendations section *The low SARs indicate that existing approaches for rearing and releasing smolts do not result in fish capable of returning as adults to the Columbia River and Lower Granite Dam in numbers sufficient for meeting existing LSRCP mitigation goals. Under existing conditions, the long-term outlook for successfully meeting project area mitigation objectives is not favorable and appears unlikely. The overall mitigation goals of returning 59,500 fish to Columbia River mouth and 11,900 adults above Lower Granite do not appear achievable within the foreseeable future. No actions proposed seem to provide much likelihood of an improved outlook. The main benefit of the program as of 2010 has been to provide modest state recreational and tribal harvest fisheries, which, from any perspective beyond satisfying immediate harvest demands, do not seem justifiable unless it is shown that those fish, if not harvested and allowed to spawn, would result in reproductive success leading to a density dependent suppression of the natural production potential of the basin. The genetic and long-term fitness implications of the harvest are not evaluated. A science-based plan for deciding the most goal-oriented disposition of returning adults (harvest, allow to spawn naturally, broodstock, etc.) was not provided. A key question is how many fish should be used to meet longer-term mitigation goals before immediate harvest is pursued. At present, the only realistic prognosis for this program is to provide the modest fishery well below its mitigation goals.*

IDFG Response to Comment #8- We agree that given the current observed post release survival rates we are not likely to meet the LSRCP mitigation goal. However this program has contributed significantly to the goal of restoring and maintaining recreation and tribal fisheries in Idaho since 1997. Management of the disposition of adult returns is prioritized to meet broodstock objectives. Hatchery-origin returns in excess of broodstock needs are prioritized to meet harvest mitigation objectives. A component of the total Clearwater Fish Hatchery rearing capacity has been utilized for evaluation of supplementation effectiveness as part of the ISS experimental design since Brood Year 1991. Results from that evaluation will be used to help guide future supplementation activities in the Clearwater River.

ISRP comment #9 from Outlook and Recommendations section *In addition, it would be useful to have the information presented in terms of the Interior Columbia River Technical Recovery Team (ICTRT) goals and findings on VSPs, as well as HRSG review and recommendations, and a description of how the program releases are justified when the these recommendations are considered.*

IDFG Response to Comment #9- Natural populations of spring Chinook salmon in the Clearwater River are not part of the Snake River ESU and are not included in the ESA listing. The ICTRT did not complete VSP status assessments for the populations in the Clearwater River drainage. Other than using the Clearwater, Dworshak, Kooskia and Nez Perce hatchery facilities in a more coordinated manner, the HSRG had no specific programmatic recommendations for the Lochsa River or the South Fork Clearwater River programs. Responses to all of the USFWS Hatchery Review Team (HRT) comments are in the draft

HGMP. The draft is available on the LSRCP website:
http://www.fws.gov/lsnakecomplan/Reports/HGMPreports.htm