Size at Release Imnaha River Smolts: Does Size Matter?

Size at release Imnaha

Below are our responses to comments made by the ISRP regarding the presentation on size at release of Chinook salmon into the Imnaha River.

I. INTRODUCTION

ISRP Comment: *"The introduction does not provide an explanation for why there is an objective of having a hatchery program that mimics the life-history characteristics of the natural population. The objective of maintaining the genetic and life-history characteristics of the natural population are not explained either, but are largely self-evident: as a first principle, long-term viability of the natural population is presumed to require maintaining the evolutionary potential of the population. Superimposing a hatchery program on the population will influence the state of the evolutionary potential, and conducting the program in such a way that it does not critically compromise the potential for future evolution is important. One way to limit deleterious effects is believed to be maintaining genetic similarity between the hatchery and natural population."*

Response: In the future, we will strive to provide a more thorough explanation and justification for the LSRCP program objectives. These comments will be used to improve the manuscript from this study that will be submitted to a refereed journal.

ISRP Comment: *"While the observation of earlier age of maturation is interesting and worthy of study, it is not explained how this alteration affects the dynamics of either the hatchery program or the natural population."*

Response: One concern with early maturation is lower female fecundity. A second concern is lower fitness benefits, and therefore poor survival, for offspring from early maturing fish. We are conducting ongoing research to understand the effects of early maturation on the hatchery and natural Imnaha River Chinook population.

ISRP Comment: *"An essential issue is whether the age structure difference is being accompanied by underlying genetic modification of the hatchery population, and to what extent the natural population may be modified by interbreeding between natural-origin and hatchery-origin adults, both in the hatchery and in the natural settings. The experimental design employed in these investigations is unable to provide insight into this important issue. It would be helpful to briefly elaborate on these concepts in the introduction."*

Response: We will use this constructive insight for the manuscript we plan on publishing about this study.

IV. OUTLOOK AND RECOMMENDATIONS

ISRP Comment: *"It is not evident how hatchery practices are modified to produce a specific mix of large and small smolts or how managers are integrating the findings into specific actions. It would be useful to indicate whether this research is being continued. "*

Response: We are working with co-managers to replicate this study.

ISRP Comment: *"The ISRP encourages the authors to submit the findings for publication. This may require additional replication."*

Response: Our goal is to submit a manuscript of this study for publication.