

(Feasibility of Reintroduction of Anadromous Fish Above or Within the Hells Canyon Complex)

Estimators of Potential Anadromous Fish Smolt Yield (E. 3.1-2, Chapter 7)

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I. Introduction

This chapter develops six estimators of smolt productivity in tributaries upstream of the HCC. The estimators included: 1) Smolts per unit of effective basin, 2) smolts per lineal mile of habitat, 3) smolts per stream surface area, 4) smolts per lineal distance by stream order, 5) U.S. v. Oregon method, and 6) sockeye smolts per lake surface area.

The purpose was to estimate smolt output from the main Snake River and its subbasins under five possible scenarios. The scenarios included: 1) passage at each dam in the HCC, 2) scenario #1, plus passage at Swan Falls Dam, 3) scenario #2, plus passage at C.J. Strike Dam, 4) scenario #3, plus passage at Bliss Dam, 5) scenario #4, plus passage at Lower and Upper Salmon Falls combined, and 6) scenario #5, plus passage into and from subbasins now blocked by manmade obstacles not owned by IPC.

II. Conclusion

1. [There are no conclusions presented by the Applicant in this chapter. The actual estimates of smolt production based on these assumptions are located in chapter 8.

The Applicant developed six estimators of smolt productivity in tributaries upstream of Hells Canyon Dam. They also produced six possible reintroduction scenarios. Their purpose in examining these methods was to estimate smolt outputs from the main Snake River and its subbasins. They point out that every paradigm used for estimating smolt yields embodies assumptions. They state that field inventories would be required to validate the assumptions.

The Applicant provides Table 15 which summaries the nineteen possible combinations of estimators and scenarios that can be used as paradigms to estimate smolt output from subbasins upstream of the Hells Canyon Dam. The report does not state which ones the Applicant will use to estimate smolt output for individual subbasin.] [This is a synthesis of the information presented in chapter 7]

Response:

This is a smolt modeling exercise that should not be accepted as fact. It can be used as a relative measure of productivity between individual subbasins to determine where the greatest benefit of reintroduction may exist.

III. Study Adequacy

The BLM should not consider this study to be “adequate”. The adequacy of this study should be a matter for fisheries agency interpretation. There is no “right” answer. This chapter provides an array of possible paradigms for estimating smolt production. They have accomplished their stated objective of developing smolt production estimators. However, the Applicant does not commit to a specific set or combination that they will use in each subbasin because each has different characteristics.

IV. BLM Conclusions and Recommendations

Conclusions

The Applicant developed an array of possible smolt estimators for modeling salmon and steelhead smolt production above the HCC. The assumptions are numerous and the data may not be of high quality in all cases. However, their effort is comprehensive and may provide insight into the smolt potential of each subbasin when considering reintroduction options.

Recommendations

The BLM should be aware that the Applicants’ model used to predict smolt production utilizes numerous assumptions in each of its paradigms. The modeling results can only be used for comparative purposes. The probability of the model accurately predicting actual smolt outputs is relatively low. If the Applicant under-estimates smolt production, it will be to their advantage.