The Timing and Distribution of Fall Chinook Salmon Spawning Downstream of the Hells Canyon Complex (E. 3.1-3, Chapter 1)

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I. Introduction

The study's main objective was to identify the timing and distribution of fall chinook salmon spawning throughout the Snake River between Asotin, Washington and the Hells Canyon Dam. Prior to 1991, very little was known about timing and distribution of fall chinook salmon spawning within the Snake River.

II. Conclusions

1. "Prior to 1991, virtually no available information described the spawn timing and distribution of use of the Hells Canyon Reach of the Snake River by fall Chinook salmon." (Page 15, Paragraph 1)

Response: The BLM agrees with this statement.

2. "Based on the results of redd surveys conducted from 1991 to 2000, we conclude that spawning behavior within the mainstem Snake River is not detrimentally affected by HCC operations." (Page 16, Paragraph 6)

Response: The BLM agrees with this statement. The data collected by IPC, USFWS, USFS, WDFW, and NPT supports this finding. The temperatures warmer than the historic norm caused by the HCC are still a point of concern. However, this finding is predicated on the IPC flow program designed to provide stable habitat for spawning fall chinook salmon in the Snake River downstream of HCD and is valid only as long as this regime is maintained. "This flow program [is currently in use and] primarily consists of maintaining a steady, stable flow from HCD during the spawning season and then adopting that flow as a minimum discharge throughout the incubation period until fry emergence is essentially complete." (Page 2, Paragraph 2)

3. "Although adults are present in the mainstem Snake River and can begin spawning when water temperatures are relatively high, there have been no reported or documented instances of pre-spawning mortality." (Page 16, Paragraph 6)

Response: The BLM has no information on this subject. However, the BLM has not received reports of pre-spawning mortality and should agree with this finding.

4. "Also, virtually all redds within the mainstem Snake River are constructed at temperatures between 16.0 and 7.0 °C, similar to thermal values reported in the literature for fall chinook in the wild, and during a seasonal time frame similar to that of the Hanford Reach population of the Columbia River and fish returning to the Clearwater and Grande Ronde rivers." (Page 16, Paragraph 6)

Response: The BLM agrees with this statement.

5. "A specific note of interest is that fall chinook salmon are supposedly throughout the entire mainstem Snake River inclusively, and that while river temperatures are cooler within the lower sections of the free-flowing reach, spawning generally begins earlier within the upper section at relatively warmer temperatures. It would seem that if the fish chose to avoid the warmer temperatures, spawning would be initiated earlier within the lower sections at cooler temperatures. This evidence suggests that fall chinook salmon within the mainstem Snake River are following a live history pattern that is no different from that of other local populations, and that therefore they should not be experiencing increased risks to stress or mortality." (Page 16, Paragraph 6)

Response: The BLM agrees with this finding. However, the timing of spawning is less important than the potential delay in outmigration thought to be caused by the thermal regime of the HCC. The ten years of data support the finding that slightly warmer temperatures are not preventing spawning. River temperatures quickly drop at the time of year when spawning occurs. Any eggs spawned at the higher temperatures are not likely to be exposed to warmer temperatures for a period of time that would cause mortality. Usually, water temperatures in the Hells Canyon Reach equilibrate to the cooler levels found in the rest of the river within a week or two after spawning begins in the upper end of the Hells Canyon Reach. This premise is supported in later chapters of this study.

III. Study Adequacy

The study is adequate. It fulfills the objectives of identifying the timing and distribution of fall chinook salmon spawning throughout the Snake River between Asotin, Washington and the Hells Canyon Dam.

IV. BLM Conclusions and Recommendations

Conclusions

The study was well designed and the results should be considered adequate. The study was conducted with funding and input from a multi-agency task force. The information provided by the study fills a long-standing data gap.

Recommendations

The BLM should accept the findings of the study. Further studies should be done to address the timing and distribution of fall chinook salmon spawning below the mouth of the Salmon River to Captain John Creek for purposes of relicensing the HCC.