

NECHAKO FISHERIES CONSERVATION PROGRAM

A Joint Program of the Government of Canada, Alcan and the Province of British Columbia

NECHAKO RIVER TECHNICAL COMMITTEE DRAFT DECISION RECORD

DATE: APRIL 5, 2002

Decision Record (2002/03-1)

1. In the fall of 2001, the largest return of Chinook spawners to the Nechako River occurred. This has lead the Technical Committee to consider if any specific measures should be adopted in the spring of 2002 with respect to the instream habitat for emergent fry. The following documents the Technical Committee's rationale in reaching a decision on this subject:

Overall survivals for juvenile chinook in the Nechako River can be partitioned into three life history time periods:

- Incubation/emergence success,
- Early emergent rearing (3 weeks after emergence), and,
- Fry rearing (after the initial three week (approximately) period)

The NFPC has conducted monitoring projects that assess emergence success, through a fry-trapping project using IPTs, as well as overall juvenile rearing, using both index sampling and an outmigration project using RST's.

Assessment of relative densities of post emergent fry has not specifically been undertaken nor has habitat been quantified under the NFPC, although modeling of emergent habitat was done in the late 1970's and early 1980's. Given the range of spawners observed over the period that the data has been collected, there has been no indication that spawning habitat capacity has been exceeded, nor has the relationship of spawners to outmigrants indicated rearing habitat capacity bottlenecks.

Spawner returns in 2001 were the highest on record. Existing projects will provide data to index overall emergence success as well as outmigrant success relative to previous years.

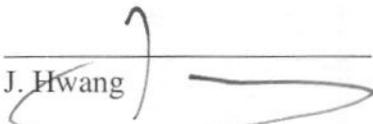
Large numbers of emerging fry will require sufficient post emergent habitat to maximize early survivals. In unregulated rivers emergent fry are typically distributed

throughout the length of the river through passive transport, driven by increasing flows from snow melt. Fish are distributed through the rising limb of the hydrograph. In addition, these flow increases provide additional habitats through flooding of low-lying vegetated areas. To date the amount of this type of habitat has not been considered to be limiting, however given the large number of spawners in the upper Nechako River the NFCP Technical Committee (TC) has recognized that there is an opportunity to assess use of these types of habitat.

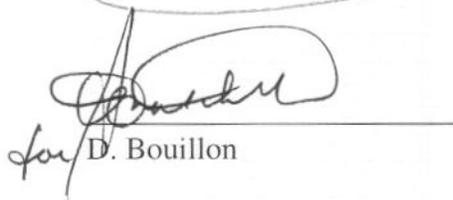
Previous work conducted by DFO (Bradford, 1994) has suggested that when large numbers of fry are produced in the upper river there is a corresponding reduction in survivals. Although causative factors have not been developed, possibilities include the inability of regulated flows to maximize the distribution of post emergent fry to habitats along the river, away from areas of high spawning densities, or perhaps the general lack of turbidity associated with freshet conditions, which could reduce protection from predators.

Originally the NFCP TC discussed the possibility of increasing spring flows to increase downstream distribution and potential useable habitat. However, the TC also considered that it might be of more scientific benefit to explore the behavior patterns of this large spawning population under the typical flow regime that has been in place through most of the NFCP period. Furthermore, the TC believes that the typical flow regime will not place any undue risk on the overall health of the Nechako River chinook stocks. Rather, it may provide important data to assist the committee with a better understanding of what habitat factors may be limiting under the current flow regime.

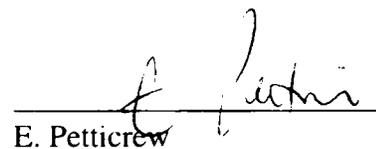
J. Hwang



for D. Bouillon



E. Petticrew



D. Cadden

