

JUVENILE CHINOOK MONITORING IN 2010

During 2010, NFCP undertook projects to evaluate in-stream habitat quality for eggs and juveniles. Fry emergence success was measured to give an indication of egg habitat quality by providing an index of fry surviving through the winter. Juvenile abundance and physical condition were also assessed in the Upper Nechako River in 2010, and juvenile outmigration was monitored using Rotary Screw Traps. Data collected in 2010 indicated consistent spawner-to-outmigrant and spawner-to-rearing juvenile relationships for the Nechako River. This result provides assurance that habitat conditions for juvenile Chinook in the Nechako River remain stable and consistent with previous years.



Sampling for Juvenile Chinook.

WHAT'S NEXT?

NFCP activities are guided by a five-year plan covering the period 2007-2012. The plan is available at www.nfc.org.

Planned projects for 2011 include:

- Annual Water Allocation (AWA).
- Summer Temperature Management Program (STMP).
- Adult Chinook salmon count between September and early October.
- Data on age distribution, sex ratio, size, fecundity, and egg retention of adult Chinook salmon in the Nechako River.
- Stream habitat structure inspections.

Reports for NFCP projects available at

WWW.NFCP.ORG

NECHAKO FISHERIES CONSERVATION PROGRAM
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Biological Data Summary 2010

The Nechako Fisheries Conservation Program (NFCP) was formed to ensure the effective implementation of the 1987 Settlement Agreement between Rio Tinto Alcan, Fisheries and Oceans Canada and the BC Ministry of Environment. The objective of the NFCP is the conservation of salmon stocks in the Nechako River. To that end, since 1987, the NFCP has monitored Chinook salmon and their habitats and has also managed water discharges from the Nechako Reservoir at Skins Lake Spillway and water temperature in the Nechako River during Sockeye salmon migration.



Nechako Reservoir and Nechako River.

NECHAKO FISHERIES CONSERVATION PROGRAM

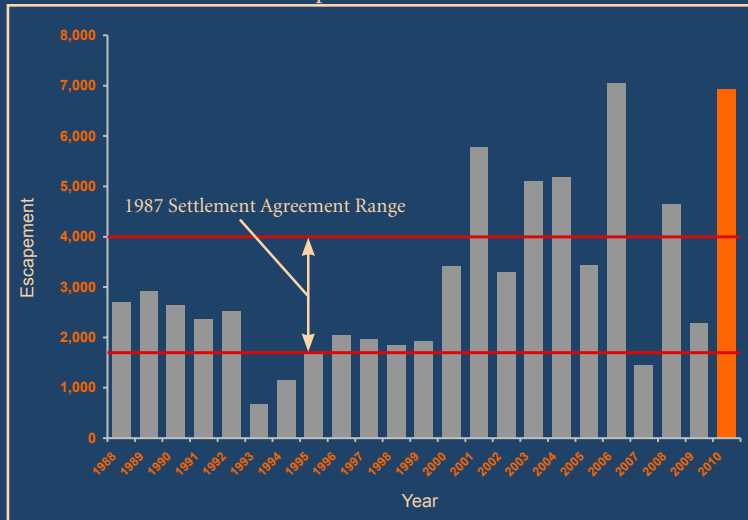
CHINOOK MONITORING

The NFCP monitors both adult and juvenile fish in the Nechako to ensure that habitat conditions remain favorable for Chinook production. Chinook spawn in the mainstem of the Nechako River between August 25 and October 8. The eggs incubate in the river gravel until March of the following year. Young Chinook emerge as free-swimming fry from March to May and spend between two to twelve months rearing in the Nechako River.

The Settlement Agreement sets out a Conservation Goal of a range of between 1,700 to 4,000 Chinook spawners in the Nechako River. Chinook are counted by means of helicopter surveys. Each survey begins at Cheslatta Falls and finishes at Vanderhoof.

NFCP monitoring since 1988 has shown that adult Chinook returns to the Nechako have generally fallen within the conservation target range. The Chinook count in 2010 was 6929 fish, the second highest number observed since counts began in 1988 and well above the Conservation Goal. The results suggest high in-river and ocean survival of the juvenile Nechako Chinook that hatched in 2005.

Nechako River Chinook Escapement 1988-2010



WATER MANAGEMENT

The NFCP provides direction to Rio Tinto Alcan to ensure effective implementation of the Annual Water Allocation (AWA) and Summer Temperature Management Program (STMP) in accordance with the Settlement Agreement.

The AWA requires a release of a base flow of 36.8 m³/s of water from Skins Lake Spillway (SLS) over the course of the year (April 1 to March 31), plus cooling flow during the STMP. Total base flow discharge for 2009-2010 water-year was 37.0 m³/s. Releases from the SLS in the 2010-2011 year were an average of 35.6 m³/s in April. From late April until the STMP began

in July, SLS discharge was approximately 50.0 m³/s. From the end of the STMP to April 2011, SLS is managed to achieve a minimum average flow of approximately 32.1 m³/s. Starting on November 4, SLS discharge was increased above base flows in response to record high inflows. SLS discharge will be maintained above base flows into the winter and for as long as needed to manage reservoir elevation. The net effect of these water releases will be an average base flow discharge of much greater than 36.8 m³/s over the 2010-2011 year.



Skins Lake Spillway.

SKINS LAKE SPILLWAY

The STMP is designed to benefit Sockeye salmon migrating through the Nechako River. The objective is to reduce the frequency of high water temperatures (>20°C) at Finmoore, located upstream of the confluence of the Nechako and Stuart Rivers. The STMP involves the release of water at SLS and was operated in the summer of 2010 as in prior years. The summer of 2010 was generally warm, and as a result, the discharge of the SLS was increased above minimum levels on four occasions in response to warming trends (July 19, July 25, August 4 and August 12). Mean daily water temperatures in the Nechako River exceeded 20°C on one day, July 28, reaching 20.1°C. Temperatures above 20°C can stress salmon but are occasionally unavoidable due to the maximum discharge target at SLS in consideration of downstream flood potential.

