

Study Indicates Burman River Chinook More Numerous

A crew member marks chinook salmon on the Burman River during a study to improve chinook salmon estimation.

Four years after its inception, a program designed to assess salmon stocks in the Burman River has revealed more fish than previously believed. The program uses mark-recapture estimates and radio tagging to count chinook salmon in the river in Mowachaht/Muchalaht territory. After analyzing the assessments, Uu-a-thluk biologist Roger Dunlop has deemed previous counts of chinook in the river as

“biased low.”

In other words, there are more fish in the Burman River than previously believed. And over 95% of those fish are hatchery reared.

Dunlop’s study is part of an international push to improve the assessment of chinook salmon in Canada and the U.S. in key areas of the coast. The study is funded by the Sentinel Stocks Program and originated

after Canada and the U.S. renegotiated portions of the Pacific Salmon Treaty in 2009.

For the past four years, Dunlop and other fisheries scientists have been taking a closer look at assessment methods used on west coast streams to determine if the fisheries reductions in the renegotiated 2009 treaty will stay the same when revisited in 2014.

If chinook salmon stocks on the west coast of Vancouver Island are shown to be consistently above the escapement goals set by the Pacific Salmon Commission, a 15% reduction on the Southeast Alaska chinook salmon fishery could be removed after 2014. Similarly, if projects in the southern US indicate improved returns for stocks of concern, a 30% reduction in the WCVI chinook salmon fishery could also be reduced or eliminated.

To carry out the study, Dunlop worked with a crew of eight from Mowachaht/Muchalaht First Nations. Together they tagged the adult chinook salmon and later recaptured the carcasses to determine the mark rate. Comparing the number of marked to unmarked fish allows you to estimate how many fish in total are

there. In 2012, Dunlop estimated that 4284 chinook salmon spawned in the Burman River. That is considerably higher than the estimate by Fisheries and Oceans Canada (DFO).

“Last year DFO estimated there were just 1033 chinook salmon in the Burman River. We actually tagged 1167 adults, and we didn’t tag them all. That’s nearly impossible,” he says.

“People think they [chinook salmon] are chronically low, but these results say they are not in this river,” he adds, saying that the mark-recapture methodology used on the Burman study provides a tool for more accurate fisheries management.

He also points to a similar study on the Skeena River where scientists corrected old population estimates

by using a ratio estimator and expanding from the proportion of Kitsumkalum chinook salmon in the test fishery (for which there are mark-recapture estimates), for the entire river and all its chinook stocks. The result was improved data for chinook salmon escapement in the entire Skeena River.

“I’m proposing doing that here, but using the proportion of Burman

hatchery fish in the July sport fishery and the number of same known from the mark-recapture escapement estimate to estimate the chinook return to all Nootka Sound streams.”

So far Dunlop has provided data from the study to fisheries assessment staff at DFO. He has also shared his interpretation of the results. DFO staff are now beginning to look at the information following a review of the older methods employed.

“Our intent at the outset of the program was to properly estimate the escapement. If the populations are low—fine—we remain in conservation mode. But if there are more fish, there are opportunities for fishing.”

Dunlop and his crew will be back on the river in early September to continue the study. This year is expected to be the last for the Sentinel Stocks Program. For more information about the Burman River results, contact Roger Dunlop at Roger.Dunlop@nuuchahnulth.org or 250-283-2012. Funding for the program has been provided by the Pacific Salmon Commission and the NTC fisheries program.

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—Roger Dunlop, Uu-a-thluk Biologist

The Burman River flows through Mowachaht/Muchalaht territory.

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Fisheries Manager Jamie James takes a scale sample to obtain the age of a chinook salmon.