March 2, 2006

Watershed Talk

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A weekly Aboriginal fisheries newsletter for fisheries representatives and their organizations

FRASER SOCKEYE 2005

By Pete Nicklin, *Assistant Stock Management Coordinator*

DFO released the Preliminary Escapement Estimates for summer and late-run Fraser sockeye on February 15th. The release of the numbers caused quite a stir in the press, because there is once again a substantial discrepancy between the Mission escapement estimates and the preliminary spawning ground escapement estimates, particularly for the Early Stuart and Summer run sockeye. Yes, this is the same issue that plagued the 2004 season.

In general, one of the main issues to address in the post season is the apparent in-season over-estimation of the escapement of sockeye at Mission in 2005. However, an overestimation of sockeye is only one of a number of problems that occurred in 2005, and the post-season review will look at each of these problems (and more) in far more detail than this article will attempt to do.

I have summarized the Preliminary Escapement Estimate numbers and some of the info therein, but the full extent of the information can be found on the DFO website at http://www.pac.dfo-mpo.gc.ca/fraserriver/escapeupdate.htm .

Early Stuart sockeye escapement: 96,604

- The lowest escapement on this cycle in 4 decades
- 4th lowest escapement on this cycle since 1941
- 57% of the brood year escapement
- 59% of the escapement target
- 49% of the PSC in-season potential escapement

Early Summer sockeye escapement: 227,128

- 74% of brood
- Nearly double the 1985-2001 cycle average
- 57% of the escapement target
- 32% of the PSC estimate of potential escapement

Summer sockeye escapement: 1,909,400

- These numbers don't reflect the total Summer run escapement because some Quesnel stocks such as Mitchell were not enumerated due to lack of funding
- record late arrival and spawning

Late-run sockeye escapement: 573,993

- Largest escapement on this cycle since 1941
- 1.5 times larger escapement in 2005 than previous record for this cycle
- 4.8 times greater than brood
- 3.7 times greater than the 1985-2001 cycle average
- 97% of the in-season escapement goal
- 20% lower than the PSC in-season estimate of potential escapement

Post-season Discussion Issues

The main issues for discussion in the post-season are not limited to the apparent discrepancy between in-season escapement estimates and the preliminary escapement estimates. Some of the other issues are:

- The 2005 in-season management decisions, which are based on in-season run-size estimates
- Comparison of the in-season management decisions with the pre-season management plan
- The reliance of in-season run size updates on Mission hydro-acoustics, and how an overestimation could have resulted in over-harvesting of some sockeye stocks, if Harrison sockeye had not returned earlier and stronger than planned
- Stock and species id problems at Mission, mainly due to later run-timing for most sockeye combined with the Fraser pink return
- The changing methods for escapement estimation on the spawning grounds, due mainly to budget constraints
- Identification of the problems with 2005 management and stock assessment
- Comparison of escapement for individual stock return (or Conservation Units) within the overall aggregates
- Application of lessons learned from 2005 to future years

Escapement Estimate Plans and Results

Escapement estimate plans for the spawning ground assessments are based on pre-season escapement goals and budget constraints. The Early Stuart, Early Summer and Late-run sockeye were enumerated similarly to previous years. However the Summer run sockeye escapement estimate did not include an enumeration of the Mitchell River, which supports a

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large population of Quesnel River sockeye, and many other stocks from tributaries of Quesnel Lake.

Therefore the escapement estimate for the Summer run aggregate is substantially lower than the actual return, but by how much is not known. For this reason, there can't be any comparison between the 2005 summer escapement with the escapement target set pre-season or in-season, and no defensible comparison with the estimate of potential escapement from Mission with the actual escapement.

In-season Run Size Estimates, Escapement Targets, Preliminary Escapement, and DBE (before catch)

The **Early Stuart** in-season run size estimate was 209,500, and the Mission escapement estimate was 206,100. Expected en-route loss for the Early Stuarts was 43,600, and the Preliminary Escapement estimate was 96,607. The Difference Between Estimates (DBE) for Mission to the spawning ground was 65,393 or 31.7%, while the escapement target was 164,000.

The **Early Summer** in-season run size estimate was 805,000, and the Mission escapement estimate was 727,039. Expected en-route loss for the Early Summers was 369,000, and the Preliminary Escapement estimate was 227,128. The DBE for Mission to the spawning ground was 130,911 or 18%.

The **Summer** in-season run size estimate was 7,000,000, and the Mission escapement estimate was 6,164,877. Expected en-route loss for the Summers was 80,100, and the Preliminary Escapement estimate was 1,909,400. The DBE for Mission to the spawning ground was 4,255,477 or 69%, while the escapement target was 4,006,000. The Mission escapement estimate is likely to change after further analysis, but it should be noted that the Mission escapement is used in the in-season modeling to estimate in-season abundance. That means that fishing plans are built around the abundance as well. If the in-season abundance is overestimated, there is a chance that overharvest could occur on some sockeye stocks. The reasons for the overestimate are being analyzed now, and will be discussed in the post-season meetings. Species identification (sockeye vs pink) is likely to be the major reason for the discrepancy. The differing performance (catchability) of the stock composition test fishery for pinks and sockeye may be an issue requiring discussion.

The **Late-run** in-season run size estimate was 760,000, and the Mission escapement estimate was 649,395. There was no expected en-route loss calculated for Lates, and the Preliminary Escapement estimate was 573,993. The DBE for Mission to the spawning ground was 11.6%, while the escapement target was 590,500.

2005 Fraser Sockeye Catch Summary

Note: Most of the following information was taken from the Canadian Post-season PST Report (Jan 9, 2006). The First Nations catch totals from Below Port Mann to the Stuart River are from the DFO website (links provided in the next section).

Total Fraser Sockeye Caught	**1,635,000**
Test/Charter fisheries	**118,000**
Canadian Catch	**1,127,000**
Canadian commercial	**137,000**
Canadian Recreational	**50,000**
Canadian First Nation total	**940,000**
Marine Area First Nations	262,942
Below Port Mann	96,139
Port Mann to Mission	63,784
Mission to Harrison	49,559
Harrison to Hope	85,564
Hope to Sawmill	168,660
Sawmill to Texas	101,148
Texas to Kelly	62,021
Kelly to Deadman	412
Deadman to Marguerite	8,010
Naver to Shelly/Nechako to Isle Pierre	6,912
Thompson to Bonaparte	6,652
Thompson u/s of Bonaparte	769
Chilcotin R	22,612
Nechako u/s Isle Pierre	106
Stuart R	4,710
US Catch	**390,000**
US Treaty Indian & non-Treaty Indian	384,000
US Treaty Indian ceremonial	7,000

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Summary

- The sockeye returned much later than expected, and in lower abundance than forecast. The exception to this was Harrison sockeye, which returned earlier and in higher than expected abundance.
- The DBE between Mission and the spawning grounds was substantial in 2005
- The Summer run escapement estimate plan did not include enumeration of a large portion of the aggregate
- If the Late-run target for Cultus/Sakinaw/Lates (10-12% harvest for Cultus/Sakinaw, 15% for the Lates) had not been reached when it was, an overharvest of some Summer run and Early Summer run sockeye may have occurred, based on the in-season run-size estimate

INFORMATION LINKS

Pacific Salmon Commission in-season Fraser River escapement reports:
http://www.psc.org/info_inseasonfraserescapement.htm

DFO: Fraser River First Nation fishery summary:
http://www.pac.dfo-mpo.gc.ca/fraserriver/firstnations.htm

DFO: Escapement Updates for 2005:
http://www.pac.dfo-mpo.gc.ca/fraserriver/escapeupdate.htm

UPCOMING MEETINGS

Fraser Watershed Joint Technical Committee:
March 28th, 2006. Merritt, BC

FRAFS Visions in Shared Management Conference: March 29-30, 2006:
More details shortly!

For more information contact Pete Nicklin at (250) 392-5888 or by email at indiseaent@shaw.ca.

Visions in Shared Management

The Fraser River Aboriginal Fisheries Secretariat invites you to attend a three day fisheries conference, "Visions in Shared Management" to be held in the heart of the Nicola Valley at the Merritt Civic Center on March 29, 30, and 31, 2006.

The conference objective this year is: *To support First Nations in working together to prepare for greater involvement in fisheries management and aquatic eco-systems in the Fraser Basin."*

The Conference will bring together Fraser First Nations, the Department of Fisheries and Oceans and government officials to examine current issues like: Wild Salmon Policy implementation, Pacific Fisheries Reform, and Integrated Fisheries Management Planning, all within the context and spirit of collaboration and integration.

Day 1: Wednesday, 29, Wild Salmon Policy
Day 2: Wednesday, 29, Pacific Fisheries Reform
Day 3: Friday, March 31, Management planning for 2006

The Visions in Shared Management Conference will be held at the Merritt Civic Center in Merritt BC on March 29, 30 and 31, 2006! Contact Deloris at 250-378-4235 to register or email: deloris.charters@nwsfa.org