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WEEKLY REPORT

August 14, 2020

The Fraser River Panel (Panel) met today to review assessment data on Fraser River sockeye salmon. The current adopted run size for Fraser River sockeye of 283,000 is the lowest run size on record, making the last 3 out of 5 years record breaking low returns. Run sizes in 2016 and 2019 were 894,000 and 493,000 sockeye, respectively. Over the last two decades, there has been a decline in Fraser sockeye survival. Small changes to total sockeye run size estimates may occur later in the season following the completion of the salmon's migration into the Fraser River.

This record low run size is the result of the poorer than average survival in addition to the very low brood year run size of 894,000. Based on additional information from the Chilko River smolt program, marine survival, in particular, has been extremely poor. Current in-season estimates of Chilko returns would project a smolt to age 4 survival rate of less than 0.17%, compared to the long-term average of 7% (1959- present). An explanation for the poor survival and subsequent low number of returning sockeye can be found in the report by MacDonald et al. (In Press) which describes environmental and biological conditions these salmon encountered. These sockeye will have experienced some of the warmest years on record (2016-2019). In addition to experiencing warmer than average river conditions, these salmon will have also experienced above average freshet flows as juveniles. In the Pacific Ocean, the repeated occurrence of marine heatwaves in 2018-19, similar to these observed in 2013-2017, may have impacted the available food sources as it was still dominated by less nutritious warm water southern zooplankton species, which may have impacted their survival.

Management Groups

Daily in-river gill net test fisheries at Whonnock and Qualark Creek will continue as will the Mission hydroacoustics program. Daily abundances of all sockeye salmon have been tracking well below their median forecast levels for 2020. As of August 13, the accounted run to date is estimated to be 13,400 Early Stuart, 60,200 Early Summer run, 108,400 Summer and 6,500 Late-run sockeye salmon within the Fraser River, for a total accounted run to date of 188,500 sockeye.

Environmental Update

On August 13, the Fraser River water discharge at Hope was about 4,013 cms, which is approximately 15% greater than average for this date. The temperature of the Fraser River at Qualark on August 13 was 16.6°C, which is 1.4°C less than average for this date. DFO's Environmental Watch program projects that river temperature will increase, to above average, and discharge is forecast to decrease to about 3,424 cms over the next 10 days.

Big Bar Update

Of the total returning sockeye, about 50% will have to pass the Big Bar area to reach their spawning grounds. Throughout the Fraser River watershed, discharge levels have continued to decrease over the past several days and the number of sockeye reaching the Big Bar slide area has been increasing. As of August 12, a total of 71,823 salmon have now been observed 10 km below the slide but so far these salmon have been dominated by Chinook. Following the decrease in water discharge levels, both sockeye and Chinook salmon are now able to pass above the slide area using the natural fish way. Thus far, a total of 48,301 salmon have been observed at Churn Creek, 40 km upstream of the slide. The proportion of sockeye among these salmon has been increasing and was 60% on August 12. In addition to using the natural fish way, 5,597 salmon been transported through the Whooshh™ system while 1,527 salmon have been transported by truck. Despite the promising signs for future upstream migration, sockeye that are delayed in their upstream migration by more than 7 to 10 days will have a lower probability to reach their spawning grounds. This is expected to have a larger impact on the early migration stocks, especially Early Stuart and to a lesser extent Early Summer run. To date, 238 Early Stuart fish have been collected for brood stock and taken to the Cultus Lake hatchery.

Escapement Update

DFO reports that the Early Stuart spawning escapement assessment program has begun. Cyclic visual surveys began July 26, and no sockeye have been observed in the system to date, but poor weather conditions have prevented some surveys on Takla and Trembleur lakes. The counting fence at Scotch Creek was fish tight as of August 7 but no sockeye have been observed passing the fence. Two sockeye were observed between the fence and the creek mouth since the fence installation. The Upper Chilliwack River hydroacoustic site has been operational since July 16 and 17,756 sockeye have been observed as of August 11. Sockeye are in the early stages of spawning. The Stellako and Chilko River hydroacoustic site have been operational since August 7 and no sockeye have been observed at either site as of August 11. The counting fence at Sweltzer Creek (Cultus Lake) was fish tight as of July 27 and three sockeye have been observed through the fence as of August 12.

Regulatory Announcements & Resources

The Panel announced the following regulations for commercial salmon fisheries in Panel Area waters:

CANADIAN FRASER RIVER PANEL AREA WATERS:

Remain closed to commercial salmon fishing.

UNITED STATES FRASER RIVER PANEL AREA WATERS:

Remain closed to commercial salmon fishing.

The next in-season meeting of the Panel is scheduled to occur on August 18. Weekly reports in this series will be provided by the Panel through the Commission every Friday during the in-season management period to inform those interested in the progress of the Fraser River sockeye salmon run. Weekly reports and regulatory announcements can be obtained via <http://www.psc.org/publications/fraser-panel-in-season-information> or by subscribing to our eNews <http://tinyurl.com/PSCeNews>. Regulations and resources for fishing schedules, test fishing catch and DFO's environmental watch program can be found in Table 1.

Table 1. Regulations & Resources

Fishing Schedule Contacts/Resources	Phone Number/ Website Links
United States fishing schedules (Treaty Indian)	1-800-562-6142
United States fishing schedules (Non-Indian)	1-800-662-9825
Canadian commercial fishing regulations (from the lower B.C. mainland)	604-666-2828
Canadian commercial fishing regulations (from outside the lower B.C. mainland)	1-866-431-3474
PSC Daily Test Fishing Catch (recorded message)	604-666-8200 https://www.psc.org/publications/fraser-panel-in-season-information/test-fishing-results/
DFO's Environmental Watch program	http://www.pac.dfo-mpo.gc.ca/science/habitat/frw-rfo/index-eng.html
Province of B.C.: Big Bar Landslide Incident	https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/fish/aquatic-habitat-management/fish-passage/big-bar-landslide-incident
DFO: Salmon counts at the Big Bar landslide site	https://www.pac.dfo-mpo.gc.ca/pacific-smon-pacifique/big-bar-landslide-eboulement/smon-count-denombrement-eng.html
MacDonald, B.L., Grant, S.C.H., Wilson, N., Patterson, D.A., Robinson, K.A., Boldt, J.L., King, J., Xu, Y., Davis, B., Decker, S., Leaf, B., Pon, L., Selbie, D.T. (2020) State of the Salmon: Informing the survival of Fraser Sockeye returning in 2020 through life cycle observations. Can. Tech. Rep. Fish. Aquat. Sci. (in press)	In Press

Note: For species other than sockeye salmon consult the appropriate regulatory agency regarding fisheries regulations in the Fraser River Panel Management Area.

Contacts

United States: Kirt Hughes, Chair, Fraser River Panel

Canada: Jennifer Nener, Vice-chair, Fraser River Panel