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**No. 1**

## **WEEKLY REPORT**

**July 10, 2020**

During the 2020 winter/spring season, substantial mitigation work has been undertaken to alleviate the impact of the Big Bar rockslide that reduced successful upstream migration of sockeye stocks with spawning grounds north of Lillooet, B.C., in 2019. The affected sockeye stocks included Early Stuart, Nadina, Bowron, Taseko, Chilko, Quesnel, Late Stuart and Stellako sockeye. These stocks represent 50% of the expected Fraser River sockeye run this year. None of the Late run stocks are impacted.

Despite the mitigation efforts that have been undertaken thus far, there still remains a serious risk that Fraser River sockeye will have trouble passing the area naturally when discharge levels are high. It is anticipated that early migrating stocks like Early Stuart and some Early Summer run stocks will be impacted more due to higher water discharge earlier in the season compared to later timed Summer run stocks that are expected to pass the slide area when discharge levels will have decreased. At this point, discharge at Big Bar has been very high and within the range of historical maxima (1951-2015). Sockeye stocks with spawning grounds above the rockslide need about 10 days to migrate from the Lower Fraser River to the rockslide location. Based on pre-season timing forecasts for Early Stuart, the earliest of these stocks, we would expect peak migration past the rockslide around July 20. The current high discharge and debris within the Fraser River however seems to have slowed down the upstream migration and at this time no Fraser sockeye have been observed, with hydroacoustics, within the slide area.

### **Pre-season Expectations**

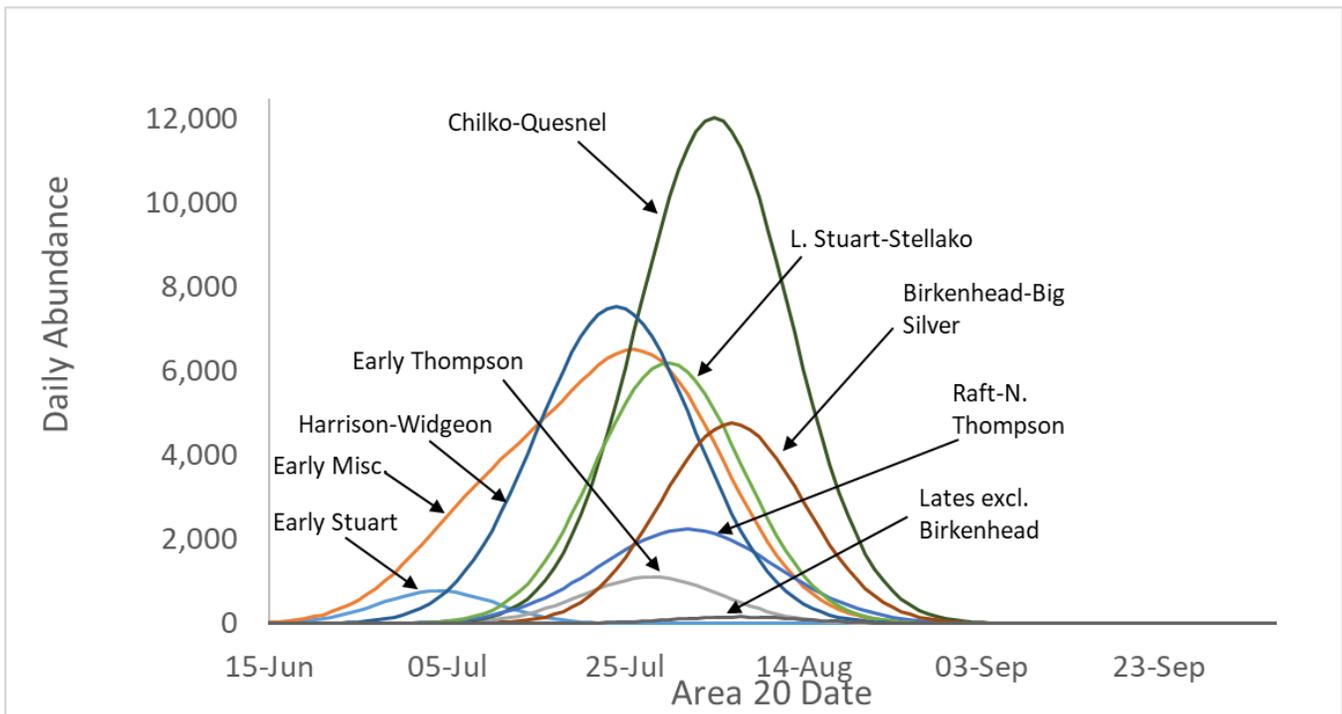
Fisheries and Oceans Canada (DFO) provided forecasts of Fraser River sockeye salmon abundance to the Panel, as well as a schedule for calculating sockeye spawning escapement targets at different run sizes. Fraser River sockeye salmon forecasts for 2020 remain highly uncertain due to variability in annual survival rates and uncertainty about changes in productivity. The total Fraser sockeye median forecast (50% probability level) is 941,000 thousand fish, which is well below the cycle average. DFO has advised that returns will likely be lower than the median forecast due to lower than average expected survival in both the freshwater and marine environment and the declining trend in productivity. To put the forecast uncertainty further into context, there is a one in four chance that the actual number of returning sockeye will be less than 488,000 fish (25% probability level forecast) and there is a one in four chance that the actual number of returning sockeye will be greater than 1,913,000 fish (75% probability forecast). For pre-season planning purposes, the Panel used the median Fraser sockeye forecast abundance (equal chance that actual return will be higher or lower) for all management groups.

The Early Stuart sockeye return forecast at the 50% probability level is 13,000 fish (ranges from 8,000 to 23,000 fish at the 25% and 75% probability levels, respectively). The forecast for Early Summer-run sockeye at the 50% probability level is 218,000 fish (ranges from 116,000 to 469,000 fish at the 25% and 75% probability levels, respectively), with Nadina and Chilliwack sockeye comprising nearly 72% of the total Early Summer return. The Summer-run sockeye return forecast at the 50% probability level is 611,000 fish (ranges from 311,000 to 1,231,000 fish at the 25% and 75% probability levels, respectively), with Chilko and Harrison sockeye

expected to contribute nearly 69% to the total Summer-run sockeye return. The Late-run sockeye return forecast at the 50% probability level is 99,000 fish (ranges from 53,000 to 190,000 fish at the 25% and 75% probability levels, respectively), with Birkenhead sockeye expected to comprise 69% of the total Late-run return.

Marine timing expectations were based on historic time series for years since 1982. The 50% timing of Early Stuart sockeye through Area 20 is forecasted to be July 04 which is the same as the median timing (1982-2019). The 50% timing forecast for Chilko sockeye through Area 20 is August 4 which is five days earlier than the median timing (1982-2019). The forecast proportion of Fraser River sockeye salmon diverting their migration through Johnstone Strait is 35%.

Pre-season expected abundance-timing curves for Fraser River sockeye salmon (Figure 1) stock-groups are shown below. Marine timing for sockeye salmon may deviate from the expectation as in-season data are collected and analyzed.



**Figure 1.** Expected abundance timing curves for Fraser River sockeye salmon.

The upper Fraser River is the main driver for the discharge at Hope during the mid-summer period, and as of June 01 the snowpack was high in the upper watershed. Fraser River discharge levels are forecast to be above average to average compared to the historic mean levels during the sockeye migration period. Air temperatures are forecast to be variable this summer. Fraser River water temperatures have been less than historic means throughout June. Though river temperatures are forecast to decline in the short-term, they are expected to fluctuate considerably depending on local weather patterns and may result in difficult migration conditions for sockeye migrating to their spawning streams.

## **Management Constraints and Expectations**

The Fraser River sockeye forecast of the different management groups has been a dominant factor in the development of pre-season fishing plans for 2020. The median forecasts for all management groups (Early Stuart, Early Summer, Summer and Late run) are small enough for Canada's escapement plan to trigger the implementation of a low abundance exploitation rate (LAER) for these groups, which limits direct harvest opportunities on Fraser River sockeye stocks. Panel management objectives will place a high priority on achieving Fraser sockeye escapement goals. Given the constraints imposed by low returns to all management groups and the potential for adverse Fraser River conditions, pre-season plans were developed which indicate that both Canada and the United States are unlikely to have harvest opportunities at the median forecast. Following the Big Bar landslide, additional consideration will be given to the challenges faced by stocks that must pass the rockslide location to reach their spawning grounds. Conservation concerns for other species and stocks as identified by Canada and the United States will be taken into account throughout the management season.

## **Run Status**

Gillnet test fishing began in the Fraser River on June 23 in Area 29d (Whonnock), July 8 in Area 29b (Cottonwood) and in the marine area on July 9 in Area 12 (Johnstone Strait; Round Island). Thus far, catches have been very low and dominated by Early Stuart and Early Summer run based on preliminary scale pattern analysis. Hydroacoustic estimates commenced July 5 at Mission. In-season assessments of the abundance of Early Stuart sockeye are indicating the return may be below the p50 forecast or possibly delayed due to the very high discharge in the Fraser River. In-season assessments of Early Summer-run sockeye should be available in late July or early August after their peak migration through marine areas has occurred. At this point, there is no information regarding the expected success of Early Stuart sockeye migration past the Big Bar landslide.

## **Environmental Update**

On July 9, the Fraser River water discharge at Hope was about 9,407 cms, which is approximately 63% greater than average for this date. The temperature of the Fraser River at Qualark on July 9 was 13.8 °C, which is 1.9°C lower than average for this date. DFO's Environmental Watch program projects that river temperature will increase, while discharge is forecast to decrease to about 8,273 cms over the next 10 days.

## **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 July 14. 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 <a href="http://www.psc.org/info_testfishing.htm">http://www.psc.org/info_testfishing.htm</a> .
DFO's Environmental Watch program	<a href="http://www.pac.dfo-mpo.gc.ca/science/habitat/frw-rfo/index-eng.html">http://www.pac.dfo-mpo.gc.ca/science/habitat/frw-rfo/index-eng.html</a>
Province of B.C.: Big Bar Landslide Incident	<a href="https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/fish/fish-passage/big-bar-landslide-incident?keyword=big&amp;keyword=bar&amp;keyword=landslide">https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/fish/fish-passage/big-bar-landslide-incident?keyword=big&amp;keyword=bar&amp;keyword=landslide</a>
DFO: Salmon counts at the Big Bar landslide site	<a href="https://www.pac.dfo-mpo.gc.ca/pacific-smon-pacifique/big-bar-landslide-eboulement/smon-count-denombrement-eng.html">https://www.pac.dfo-mpo.gc.ca/pacific-smon-pacifique/big-bar-landslide-eboulement/smon-count-denombrement-eng.html</a>

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