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No. 1

WEEKLY REPORT

July 14, 2017

The Fraser River Panel (Panel) of the Pacific Salmon Commission has developed management plans for 2017 Fraser River sockeye and pink salmon fisheries in Panel Area waters.

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. The total Fraser sockeye forecast mid-point (50% probability level forecast) is 4,432,000 million fish for 2017, which is only about half the cycle average. The primary reason for the lower than average expected return is the low return expected in Quesnel sockeye which has historically had its largest return on this cycle (3,726,000 cycle average vs. 192,000 median 2017 forecast). The 2013 brood year escapement was 1,200,000 effective female spawners (EFS) which is slightly more than the cycle average 1,100,000 EFS, (1941-2013). Despite this above average spawning escapement in 2013, DFO has advised that Fraser River sockeye salmon forecasts for 2017 remain highly uncertain due to variability in annual survival rates and uncertainty about changes in their productivity as well as being subjected to extremely warm ocean temperatures through 2016, and the known association between warm ocean conditions and reduced survival of salmon. Also contributing to the uncertainty is the absence of reliable smolt abundance data for Chilko which dominates the 2017 forecast (48% of the total median forecast). To put the recent forecast uncertainty into context, there is a one in four chance that the actual number of returning sockeye will be less than 2,338,000 fish (25% probability level forecast) and there is a one in four chance that the actual number of returning sockeye will be greater than 8,873,000 fish (75% probability forecast). For pre-season planning purposes, the Panel used the Fraser sockeye 50% probability level 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 99,000 fish (ranges from 64,000 to 158,000 fish at the 25% and 75% probability levels). The forecast for Early Summer-run sockeye at the 50% probability level is 343,000 fish (ranges from 166,000 to 792,000 fish at the 25% and 75% probability levels), with Chilliwack and Pitt sockeye comprising nearly 50% of the total Early Summer return. The Summer-run sockeye return forecast at the 50% probability level is 3,407,000 fish (ranges from 1,861,000 to 6,631,000 fish at the 25% and 75% probability levels), with Chilko, Stellako and Late Stuart sockeye expected to comprise nearly 85% of the total Summer-run sockeye return. The Late-run sockeye return forecast at the 50% probability level is 583,000 fish (ranges from 247,000 to 1,292,000 fish at the 25% and 75% probability levels), with Late Shuswap, Weaver and Birkenhead sockeye expected to comprise over 85% of the total Late-run return.

The pre-season forecast for Fraser River pink salmon is also highly uncertain, primarily due to shifts in enumeration methodology over time. For pre-season planning of Fraser River pink salmon, the Panel used the 50% probability level forecast of 8,693,000 fish. To put the pink run size forecast uncertainty into context, there is a one in four chance that the actual number of returning pink salmon will be at or below the 25% probability level forecast of 6,177,000 fish and there is a three in four chance that the actual number of returning pink salmon will be at or below the 75% probability level forecast of 12,353,000 fish.

Marine timing expectations were based on the historic median timing excluding the 2016 cycle, but adjusted three and four days earlier, respectively, to account for the earlier pre-season forecasts of marine timing for Early Stuart and Chilko. The 50% timing of Early Stuart sockeye through Area 20 is July 01, which is two days earlier than the median timing (1951-2016) of July 03. The 50% timing of Chilko sockeye through Area 20 is August 06 which is two days

earlier than the median timing (1993-2016) of August 08. The forecast proportion of Fraser River sockeye salmon diverting their migration through Johnstone Strait is 51% compared to a recent year (1990-2016) median northern diversion rate of 62%. Forecasts of the migration timing and diversion rate of Fraser River pink salmon will not be available until early August. For pre-season planning, the all-year historical median timing for pink salmon of August 28, and a Johnstone Strait diversion rate of 50% were used.

Pre-season expected abundance-timing curves for Fraser River sockeye and pink salmon (Figure 1) stock-groups are shown below. The expected timing for Fraser Pink salmon may change as forecasts are updated and marine timings for both sockeye and pink salmon may deviate from the expectation as in-season data are collected and analyzed.

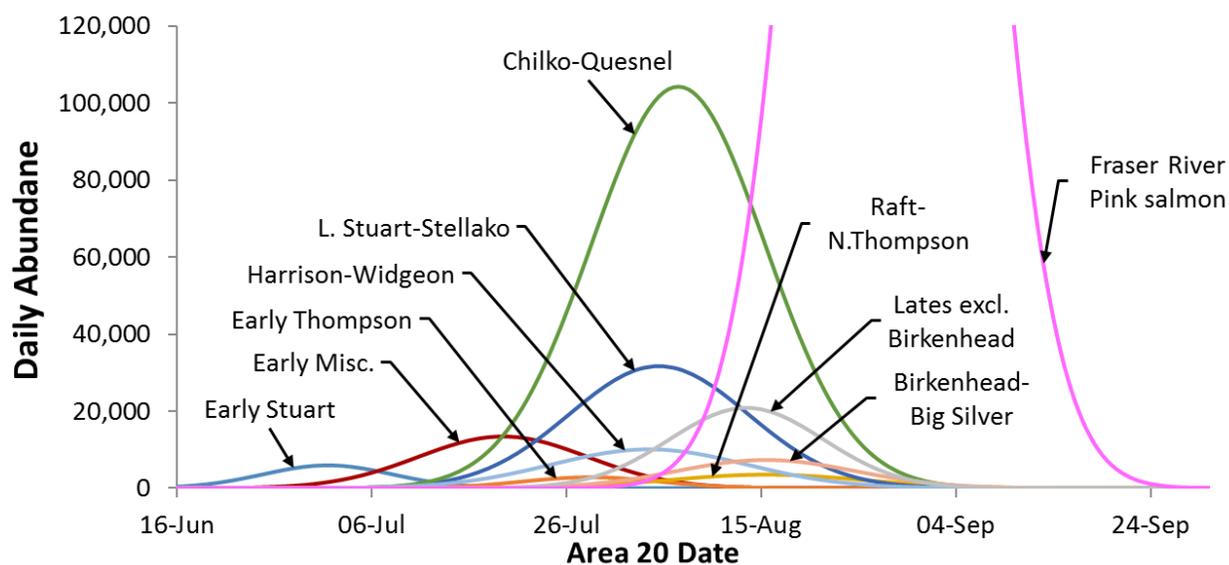


Figure 1. Expected abundance timing curves for Fraser River sockeye and pink salmon.

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 low in the upper watershed. However, Fraser River discharge levels are forecast to be near historic mean levels during the sockeye migration period. Air temperatures are forecast to be higher than average this summer which are expected to result in increased water temperatures. Fraser River water temperatures have been near 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. The Panel has adopted pre-season management adjustments in anticipation of the potential for en-route losses as a precautionary measure. Management adjustments are additional fish that are removed from identified allowable harvest levels and instead allowed to migrate upstream to help achieve spawning escapement targets for Fraser River sockeye management groups.

Management Constraints and Expectations

The forecasts for Fraser sockeye management groups expected in 2017 has been a dominant factor in the development of pre-season fishing plans. The forecasts for this year’s Early Stuart and Late-run returns are small enough for Canada’s escapement plan to trigger the implementation of a low abundance exploitation rate (LAER) for these groups, which limits harvest opportunities on co-migrating Early Summer and Summer-run sockeye salmon. Since 1996, the Late-run group has demonstrated abnormally early upstream migration, relative to the historic timing. This abnormal migration behavior continues to substantially reduce harvest opportunities on these stocks and on co-migrating Summer-run sockeye and pink salmon. The implementation of the LAER will limit harvests to those that are incidental to fisheries directed on the more abundant Early Summer and Summer-run groups as well as pink salmon which are anticipated to have harvestable surplus. Panel management objectives will place a high priority on achieving Fraser sockeye

escapement goals, including those for Early Stuart and Late-run sockeye. Given the constraints imposed by low returns to these two management groups and the potential for adverse Fraser River conditions, pre-season plans were developed which indicate that both Canada and the United States will be challenged to fully harvest their shares of total allowable catches (TAC) of both Fraser River sockeye and pink salmon. Additional management actions may be taken by Canada to protect Cultus and Sakinaw sockeye and Interior Fraser coho. Conservation concerns for other species and stocks identified by Canada and the United States will be taken into account throughout the management season.

If in-season conditions are consistent with pre-season expectations, low impact fisheries would be expected to commence in mid- to late July in Panel Waters. The actual start dates and duration of fisheries will depend on in-season estimates of timing, abundance, diversion, and agreed management adjustments as well as concerns for other co-migrating species.

Run Status

Gillnet test fishing began in the Fraser River on June 28 in Area 29d (at Whonnock), July 02 at Qualark Creek, and July 12 in Area 29b (at Cottonwood). Marine gillnet test fisheries began on July 07 in Area 20 (Juan de Fuca Strait) and July 11 in Area 12 (Johnstone Strait; Round Island). Catches have generally been very low. Stock identification analyses obtained from in-river test fisheries confirm the expected pattern of a high proportion of Early Stuart sockeye, and increasing proportions of Chilliwack, Nadina and Bowron sockeye. Hydroacoustics estimates commenced July 01 at Qualark and July 07 at Mission. In-season assessments of the abundance of Early Stuart sockeye are indicating the return is below the p50 forecast. During the Fraser Panel call today the Early Stuart run size was officially reduced to 50,000 with a revised Area 20 peak run timing of July 03 which is two days later than expected pre-season. 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.

Environmental Update

On July 13, the Fraser River water discharge at Hope was about 4,693 cms, which is approximately 14% lower than average for this date. The temperature of the Fraser River at Qualark on July 13 was 17.0 °C, which is 0.9 °C higher than average for this date. DFO's Environmental Watch program projects that river temperature will remain near current levels, while discharge is forecast to decrease to about 4,125 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 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 http://www.psc.org/info_testfishing.htm .
DFO's Environmental Watch program	http://www.pac.dfo-mpo.gc.ca/science/habitat/frw-rfo/index-eng.html

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

Contacts

Canada: Jennifer Nener, Chair, Fraser River Panel
 United States: Lorraine Loomis, Vice-chair, Fraser River Panel