WATERSHED TALK
NEWSLETTER
Produced by the Fraser River Aboriginal Fisheries Secretariat

## 2017 FRASER SALMON UPDATE

*By: Pete Nicklin and Aidan Fisher (Neill), FRAFS Biologists*

With the termination of the marine test fisheries, we are now in the end of the Fraser sockeye migration, and well into the Fraser pink migration. In total, neither have come anywhere close to preseason mid-point forecasts with the exception of a couple sockeye stocks that performed slightly better than the rest (Quesnel, Pitt). Many (if not all) Fraser and marine approach First Nations that rely on these stocks have not been able to come even close to meeting FSC fisheries expectations.

Today the Fraser River Panel adopted final in-season run sizes for all four management groups of Fraser sockeye, which are mainly an accounting adjustment of a few thousand fish to align the in-season run sizes with the hydroacoustic passage estimates. None of the sockeye aggregates exceeded the LAER this year, which led to a very challenging fishing season. The Panel also adopted an in-season run size for Fraser pinks, and one of the earliest migration timings ever observed.

Most Fraser sockeye stocks are estimated around abundance in the P25 to P10 forecast range, which means restricted FSC fishing for First Nations, and no commercial or recreational directed Fraser sockeye fisheries. The total Fraser sockeye return has tracked very close to the P10 forecast.

Fraser pinks are continuing to show daily escapement past mission in the 100,000 range, but not enough to come close to P25 forecast. It's likely we have observed the peak migration in the marine approach, and there does not seem to be a second pulse of fish we were hoping for. There is now some certainty that it is a very poor year for Fraser pinks as well as sockeye.

The US fisheries have now exceeded their TAC based on previous fisheries for Fraser pinks by 34,900, and the new adopted run-size. Due to the management framework for planning fisheries based on the PST, there are no consequences to US fisheries for exceeding the TAC that is now in place except terminating their fishery. The Canadian TAC has to account for the US overage. This will affect all Canadian fisheries, including the FSC fishery for pinks if Canadian catch approaches the TAC limit.

| Sockeye Management Group | Pre-Season Planning Forecast (P50) | In-Season Adopted Run Size | Area 20 Timing (for 50% of run) |
|---|---|---|---|
| **Early Stuart** | 99,000 | **47,000** | **July 4** |
| **Early Summer** | 343,000 | **165,000** | **Aug 4** |
| **Summer** | 3,407,000 | **1,044,000** | **Aug 11** |
| **Lates** | 583,000 | **231,000** | **Aug 16** |
| **TOTAL** | **4,432,000** | **1,487,000** | |

On the environmental conditions side of things, current Fraser River temperatures are starting to drop as summer comes to an end. Discharge Flows have stayed low, and are tracking near the lowest discharge in the range from 1981-2010.

### Early Stuarts

Early Stuart migration and spawn is complete for 2017. The accounted run to date is almost 46,600, and the Panel adopted a final in-season run size of 47,000.

### Early Summers

The final in-season run-size adopted by the Panel is 165,000, up from the previous run size of 150,000, with a run timing of August 4th. This will be the final Early Summer run-size. Run accounted to date for Early Summers is 163,900.

### Summer Run

The Panel adopted a final in-season run size of 1,044,000 Summer run size with an August 11th run timing through Area 20. The run accounted to date is 1,027,200 with a few thousand still on the way because of the relatively abundant Chilko and Quesnel runs in this group. There is no TAC at this run size abundance, and First Nations fisheries will be managed under the LAER.

### Late Sockeye

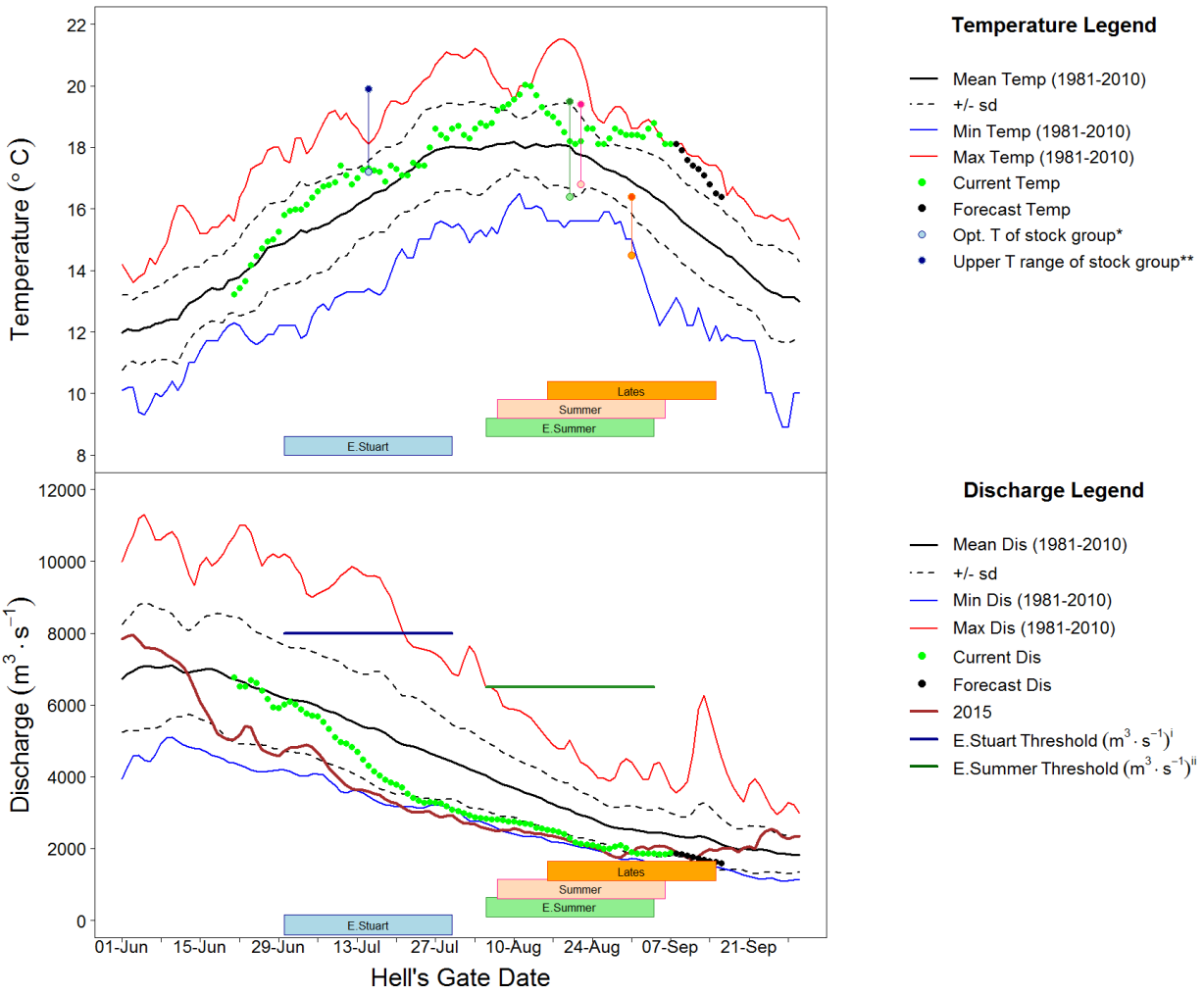
The Panel adopted a final in-season run size of 231,000 with a run-timing peak of August 16th for the Late run aggregate. Late run sockeye are well into their migration in the Fraser, and are tracking between the P10 and P25 forecast. There is no TAC at this run size, and the Late run sockeye will be managed under the LAER of 20% instead of 10% like the other 3 aggregates.

## Fraser River Conditions

The main source of information for Temperature and Discharge data and forecasts is DFO's Environmental Watch Program (see link below).

The BC River Forecast Centre website (see links below) has information and links related to discharge and temperatures at various monitoring stations throughout the Fraser watershed, including snow pillow and melt updates.

Environment Canada's Water Office webpage provides access to real time hydrometric data at many locations throughout the Fraser watershed (see links below).




Fraser Discharge and temperatures at Hope and Qualark Creek (near Hope) respectively look like this (graphs from the Fraser River Panel Distribution September 8th, 2017):

The Fraser River water temperature at Hope is currently 18.1 degrees Celsius (2.1 degrees Celsius above average for this time of year), and is forecast to decrease to 17.1 degrees Celsius by September 13th. The Fraser River discharge continues to track near historic low levels for this time of year with a flow of 1,884 $m^3$/sec at the Qualark water station on September 13th (21% below average for this time of year). The discharge is predicted to continue tracking below average, with a forecast discharge of 1,688 $m^3$/s by September 13th.

## Fraser River Fisheries Information

Fraser First Nations Fisheries information can be found on the DFO website at:
http://www.pac.dfo-mpo.gc.ca/fm-gp/fraser/index-eng.html

DFO staff have distributed 9 Fraser Salmon Bulletins, and we strongly encourage people to review and comment on the DFO bulletin if time and resources permit. Contact your local DFO Resource Manager for a copy, and addition to the distribution list.

## Fraser Sockeye & Pink Salmon

The Pacific Salmon Commission (PSC) distributes the Fraser River Panel meeting agenda and technical information for Panel members and observers to the process. The following information is a summary of key information from that document (Spetember 8th, 2017) and the Fraser River Panel meeting from the same day.

Both marine purse seine test fisheries have now ceased operation and the cottonwood in-river test fishery is planned to close on September 10th, while Whonnock and Qualark in-river test fisheries continue to operate. The Mission hydroacoustic program will continue to run to account pink salmon migration, and is currently planned to terminate September 30th although this may be adjusted based on pink migration.

PSC staff today recognized that accounted run-to-date has exceeded the in-season adopted run size for all four aggregate stock groups for sockeye, and adjusted the in-season run size for each group to reflect the best estimates to date. Regardless, this is still not enough to move any of the aggregate stock groups out of the LAER. There are some management implications to increasing the adopted run-size for non-sockeye directed fisheries that encounter sockeye, because it increases the LAER for each of the stock groups.

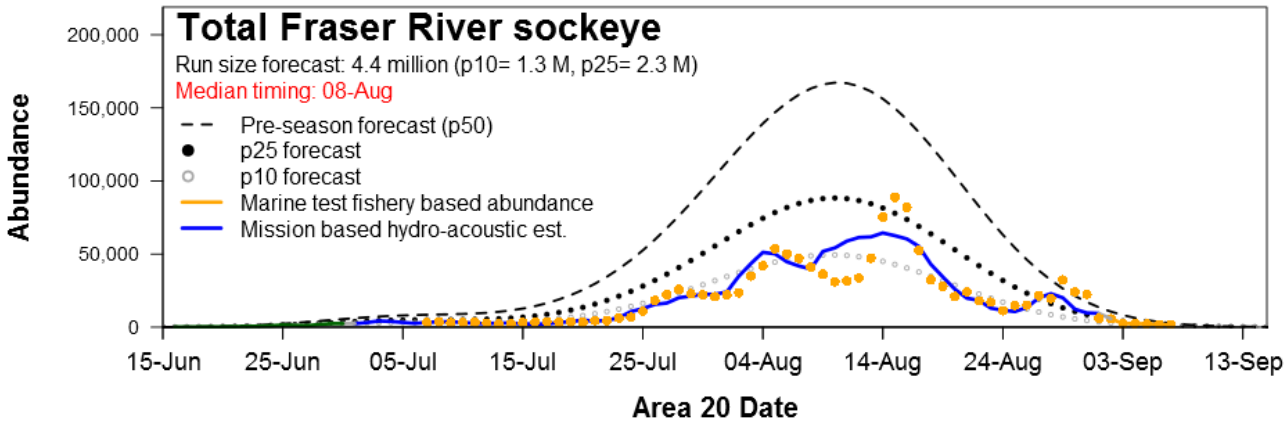
The Fraser River Panel adjusted in-season run sizes moderately for all management groups. There remains no TAC at these abundances, and First Nations fisheries will continue to be managed under the LAER (Low Abundance Exploitation Rate). FSC fisheries throughout the marine approach and in-river, 10% LAER for Early Stuart, Early Summer, and Summers, while the Late aggregate will be managed to a 20% LAER. There is no explicit allocation of the LAER between groups (Marine, Lower Fraser, BC Interior), but DFO is using a proportional communal licence amount method to guide fisheries management by dividing the LAER for operational purposes.

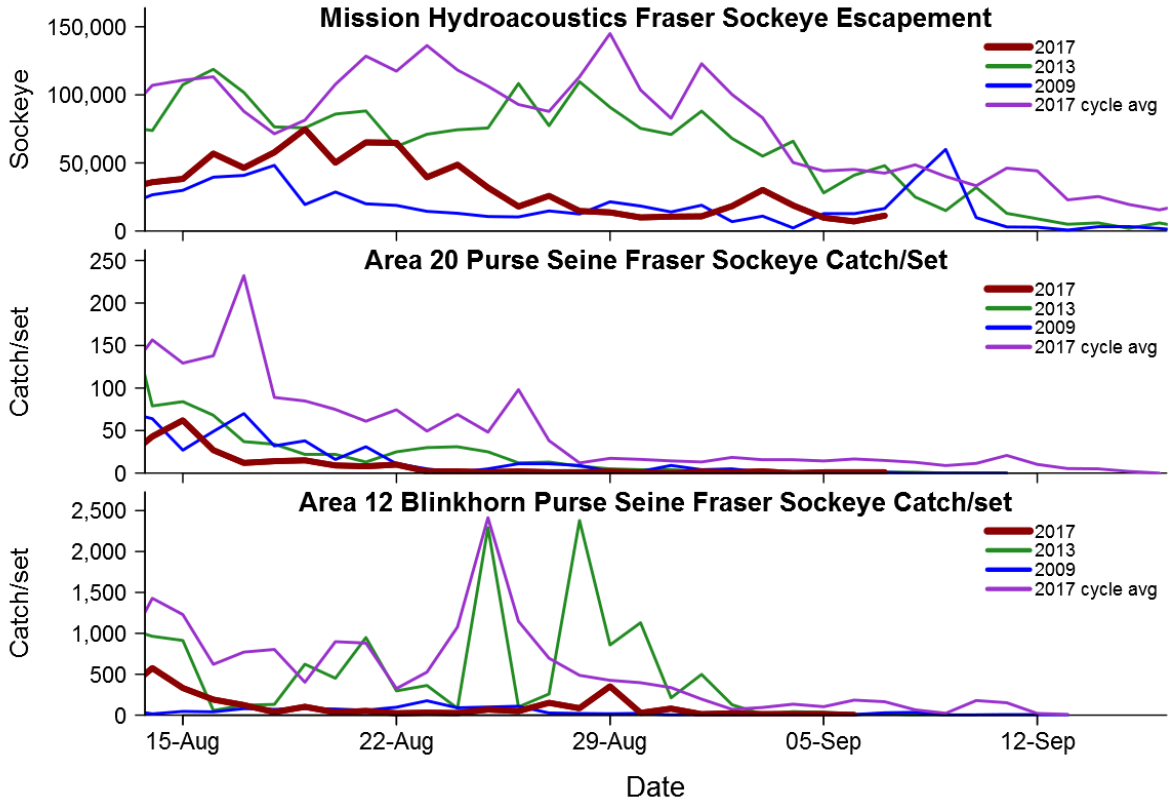
**A total of 1,357,600 Fraser sockeye has been accounted-to-date past Mission, comprised of almost 46,400 Early Stuart sockeye, 161,800 Early Summer run sockeye, 1,010,000 Summers, 139,400 Lates and 1,953,000 Fraser pinks.** The sockeye catch in marine test fisheries has effectively stopped, indicating the completion of the sockeye migration. Pink salmon catch in the marine test fisheries is also tapering off, indicating the completion of pink migration. Stock identification in the marine area over the last few days of their operation also showed high proportions of late run stock groups of sockeye, with some Chilko/Quesnel still present as expected.

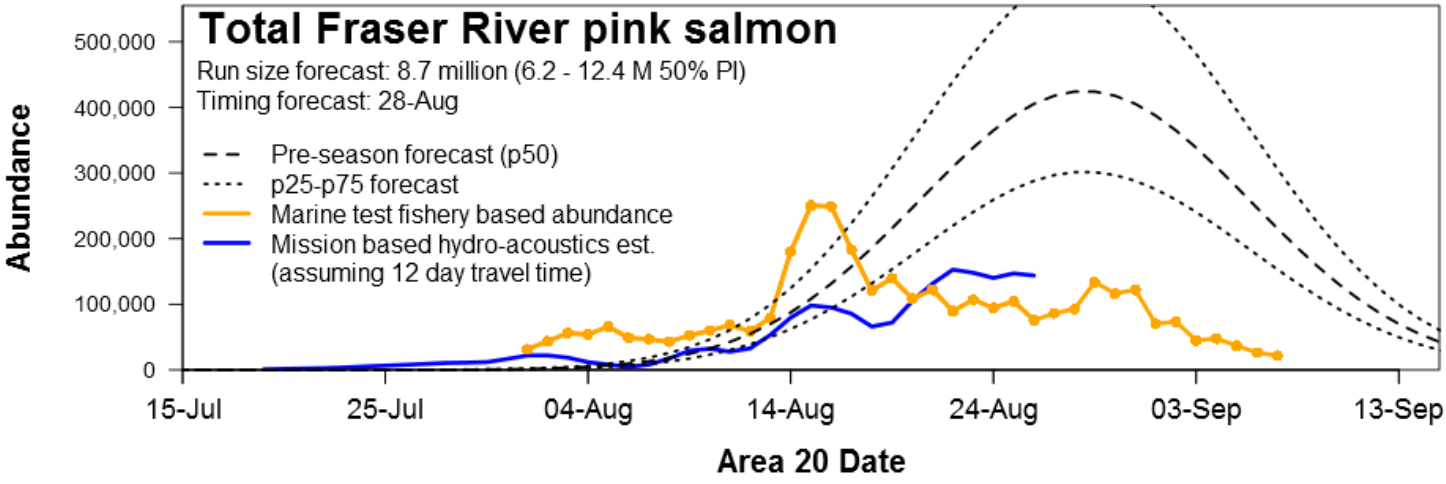
The Panel adopted a Fraser pink abundance **in-season run size of 3.7 million with a median run timing of August 19th**. This is tied with the earliest median run timing for Fraser pinks. The early bump of pink migration appears to be the peak migration this year. The Mission hydroacoustic program will continue to estimate daily passage for pinks through the Lower Fraser, and no more marine information will be available for pink salmon this year. The passage of Pink salmon is estimated by deduction of sockeye and a long-term average chinook migration from the total salmon estimate at Mission from the HydroAcoustic. This procedure could lead to less accurate daily passage numbers past Mission.

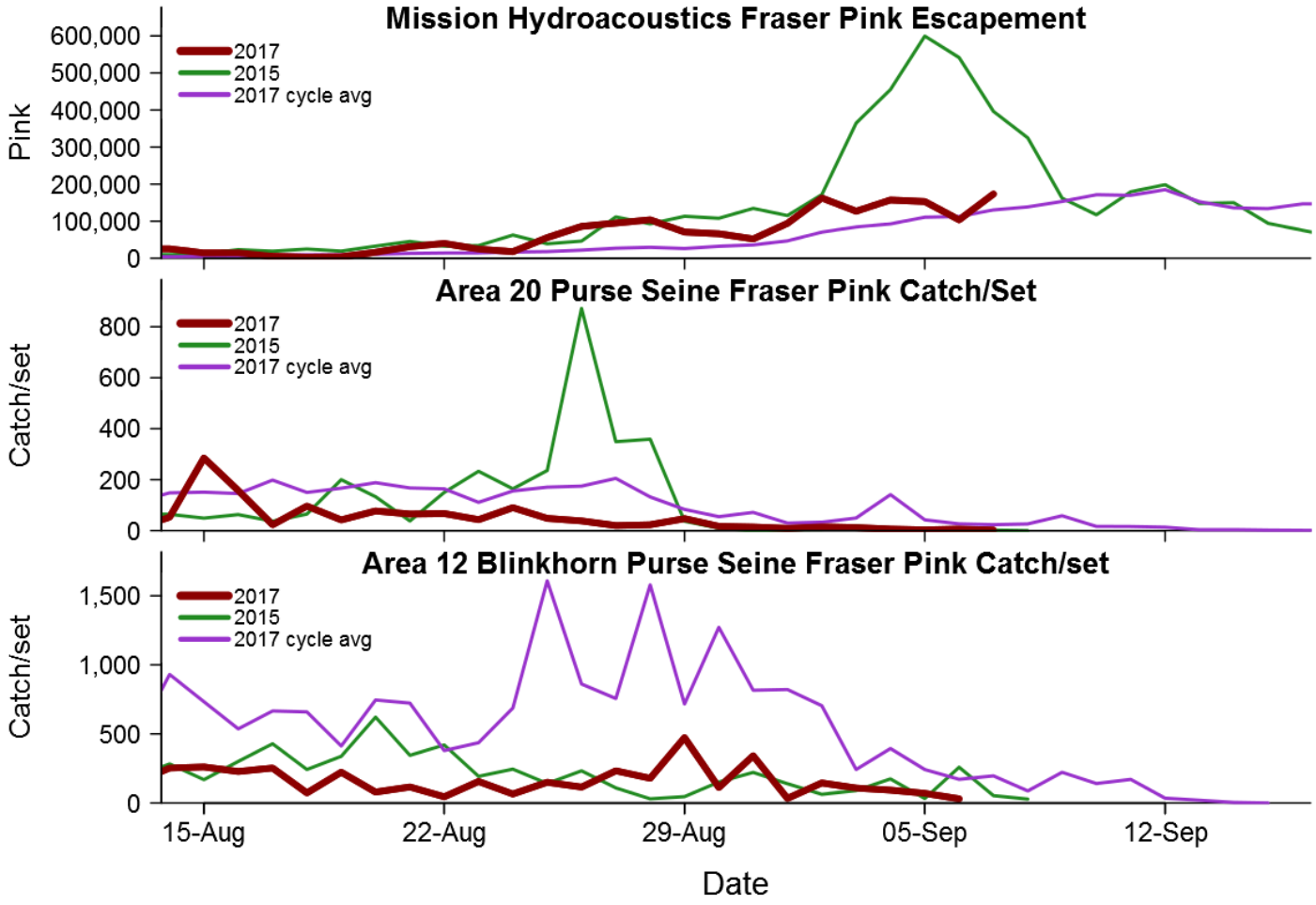
To date the US fisheries have harvested a total of 104,480 Fraser pink salmon, with 1,400 sockeye as bycatch. This catch results in an overage of TAC for the US fisheries. Due to the management framework agreed to in the PST, the US fisheries are only accountable to the TAC based on the information available to date when the fisheries are approved. This means that Canadian fisheries, including the FSC fishery, must account for the US overage with no consequences to US fisheries now that the Fraser pink run has been downgraded, except their termination due to a lack of TAC.

Test fishing graphs (sockeye and pink salmon), Mission hydro-acoustics and Daily Migration information from the PSC distribution package are below, please note that some of the daily migration run timing curves show P10, P25, and P50 for sockeye and P25, P50, and P75 for pinks, make sure to check the legend on each graph to read them accurately:



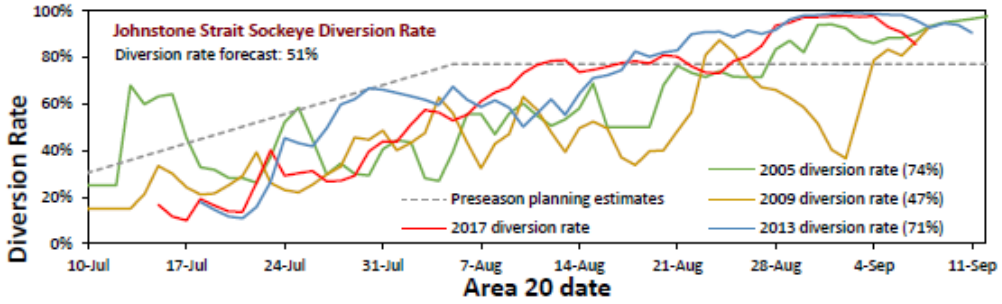

Total Fraser River pink salmon
Run size forecast: 8.7 million (6.2 - 12.4 M 50% PI)
Timing forecast: 28-Aug
Pre-season forecast (p50)
p25-p75 forecast
Marine test fishery based abundance
Mission based hydro-acoustics est.
(assuming 12 day travel time)
Abundance
500,000
400,000
300,000
200,000
100,000
0
15-Jul
25-Jul
04-Aug
14-Aug
24-Aug
03-Sep
13-Sep
Area 20 Date


Mission Hydroacoustics Fraser Pink Escapement
Pink
600,000
500,000
400,000
300,000
200,000
100,000
0
2017
2015
2017 cycle avg
Area 20 Purse Seine Fraser Pink Catch/Set
Catch/set
800
600
400
200
0
2017
2015
2017 cycle avg
Area 12 Blinkhorn Purse Seine Fraser Pink Catch/set
Catch/set
1,500
1,000
500
0
2017
2015
2017 cycle avg
15-Aug
22-Aug
29-Aug
05-Sep
12-Sep
Date

We've included the Johnstone Strait diversion graphs (following) to illustrate the pink salmon migration pattern. Migration through Johnstone Strait has returned to the similar diversion rates seen in past years, with the majority of sockeye (85%) and pink (83%) salmon returning through Johnstone Strait.

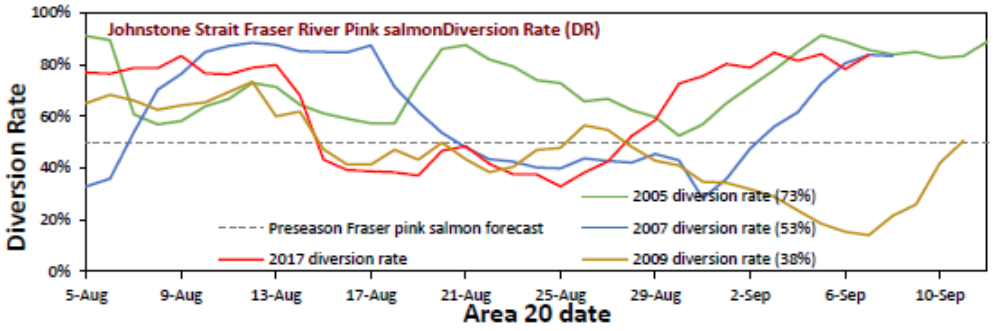
### 2017 Fraser River sockeye diversion rates through Johnstone Strait

| | 5-day average |
|---|---|
| Diversion rate | 85% |
| Gillnet | #N/A |
| Purse Seine | 85% |




### 2017 Fraser River Pink salmon diversion rates through Johnstone Strait

| | 5-day-average |
|---|---|
| Total pink salmon | 83% |
| Fraser pink salmon | 84% |




The Fraser River Panel small group will meet next week to monitor for any unexpected changes, but the Fraser River Panel Technical Committee is done for the in-season.

## Weekly Technical Updates with FRAFS Biologist Mike Staley: Done for the Season

## Links

With Chinook and sockeye approaching and in the Fraser, these links may be of interest:

BC River Forecast Centre Website: http://bcrfc.env.gov.bc.ca

Environment Canada's Water Office Website: http://www.wateroffice.ec.gc.ca/index_e.html

Pacific Salmon Commission Website: www.psc.org

Pacific Salmon Commission Test Fisheries: http://www.psc.org/info_testfishing.htm

Pacific Salmon Commission News and Regulatory announcements: http://www.psc.org/publications/fraser-panel-in-season-information/fraser-river-panel-regulatory-announcements/

Fraser River Mission Escapement Reports: http://www.psc.org/publications/fraser-panel-in-season-information/fish-passage-past-the-psc-hydroacoustic-counting-station-near-mission-bc/

Fraser River Environmental Watch Reports: http://www.pac.dfo-mpo.gc.ca/science/habitat/frw-rfo/index-eng.html

The Albion Test Fishery information can be found at:
http://www.pac.dfo-mpo.gc.ca/fm-gp/fraser/docs/commercial/albionchinook-quinnat-eng.html

***For more information contact Pete Nicklin and/or Aidan Fisher (Neill) by email:*** pnicklin@telus.net, Aidan.Neill@lffa.ca