



# WATERSHED TALK

## NEWSLETTER

Produced by the Fraser River Aboriginal Fisheries Secretariat

### 2015 FRASER SALMON UPDATE

By: *Pete Nicklin, FRAFS Fraser Fisheries Biologist*

The past two issues of Watershed Talk have included a comparison of the 2015 Fraser sockeye pre-season planning forecast and the in-season adopted run sizes. The comparison table tells part of the story, the opening chapter or beginning of the season and the current assessed run sizes of the management groups. The description of the progress from pre-season planning to current information is an attempt to fill in the “how we got to the current assessed run sizes” part of the story (the middle chapters). The 2015 sockeye season isn’t over yet, and it won’t be until all the Fraser sockeye have spawned in their natal streams.

However, as important as Fraser sockeye are to many people, other salmon species such as Fraser Chinook, pink salmon (returning to the Fraser on odd years), chum and coho are very important to many as well. For this week’s update information from the Fraser Chinook Albion Test Fishery is included in the salmon update. Fraser Chinook return to spawn in the Fraser from March all the way through Fall, throughout the vast area of Fraser watershed. The Albion Chinook Test Fishery has been in operation since 1981, and provides valuable information on Fraser Chinook returns on an annual basis. Although the 2015 Fraser Chinook Albion test fishery catch per unit effort is tracking less than the average of 1981 to 2014, there are some daily abundances that look encouraging.

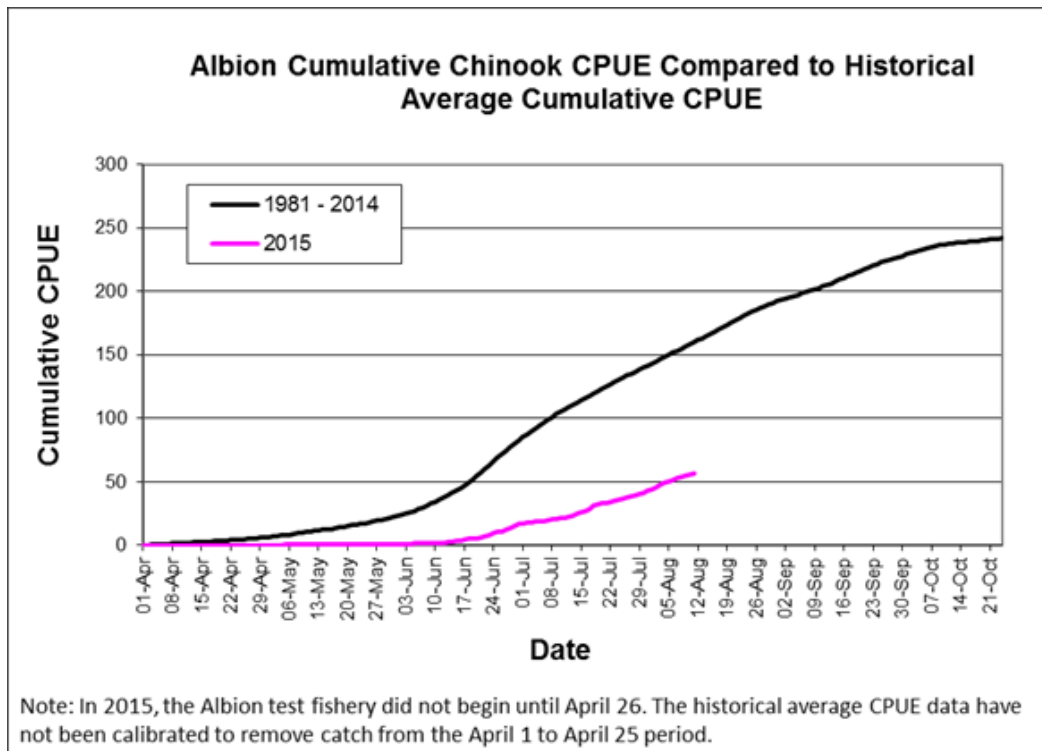
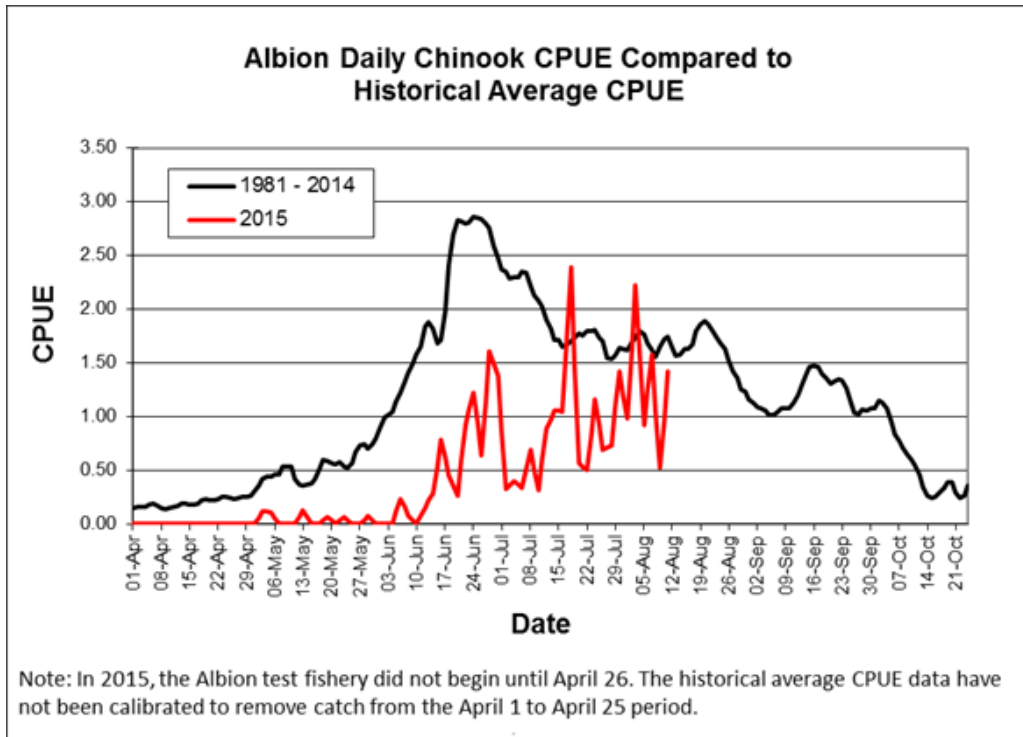
The Albion Test Fishery information can be found at:

<http://www.pac.dfo-mpo.gc.ca/fm-gp/fraser/docs/commercial/albionchinook-quinnat-eng.html>

The following two graphs are from the DFO website accessed at the link provided above.

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## Albion Test Fishery information



Going back to Fraser sockeye, this week hasn't resulted in any major changes to the way things have unfolded for the past few weeks, and 2015 Fraser sockeye salmon run is still estimated well below the pre-season forecast of 6.76 million. The table below outlines the current situation, where most components across the total Fraser sockeye run have not returned in abundances anticipated pre-season. In-season information has resulted in a total adopted run size of 2.55 million.

<b>Sockeye Management Group</b>	<b>Pre-Season Planning Forecast</b>	<b>In-Season Adopted Run Size</b>
Early Stuart	16,000 (P25 Forecast)	<b>32,000</b>
Early Summer	837,000 (P50 Forecast)	<b>400,000</b>
Summer	4,675,000 (P50 Forecast)	<b>1,700,000</b>
Lates	1,236,000 (P50 Forecast)	<b>419,000</b>
<b>TOTAL</b>	<b>6,764,000</b>	<b>2,551,000</b>

Although there has been a late bump of Summer sockeye over the past week, the overall picture is not significantly different than what has been unfolding:

### Early Stuarts

The Early Stuart escapement enumeration program began on July 24<sup>th</sup> and concluded on August 22<sup>nd</sup>. In-season estimation of spawning success is 74%, well below the historical average of 84% (info from the latest DFO Fraser Sockeye Escapement in-season update).

### Early Summers

**Early Summers** were forecast at 837,000. Even though these stocks continue to show up in marine areas in small proportions, the aggregate remains below the p50 forecast, with a current adopted run size of 400,000. The majority of the abundance of the Early Summer forecast was the Early Thompson group, however in-season information shows that this component of the group continues to track well below forecast. The Early Summers, excluding the Early Thompson component, show returns closer to the pre-season forecast for this component. Escapement estimation programs are underway for all stocks in this management aggregate.

### Summer Run

Pre-season, the Summer aggregate of the 2015 run was predicted to be the largest contributor to the forecast. The story for this group is similar to that of last week's with test fishery information and assessment showing these stocks all returning lower than the P25 forecast, despite a small bump of fish in marine test fisheries over the past couple of days. The Summer run size was increased today to 1,700,000 (timing Aug 12th) as a result of continued presence of high proportions of DNA in the marine test fisheries and the possibility of a later timing for the Chiko/Quesnel/Late Stuart/Stellako component of the group. The Fraser River Panel adopted the P25 forecast for Summers on August 11<sup>th</sup> – 1.7 Million, and further downgraded the run size to 1.13 million on August 14<sup>th</sup> prior to increasing the run size to 1.6 million. . Despite increasing the run size, the Summers remain in a Low Abundance Exploitation Rate (LAER) situation with no Total Allowable Catch (TAC) remaining. The LAER is intended to allow a small amount of sockeye mortality (10%) while fisheries are targeting other stocks or species.

## Late Sockeye

Rounding out the bad news for sockeye this year, the Late aggregate continues to return far below pre-season expectations. Test fisheries and hydroacoustic information for Late sockeye continue to estimate a Late run size of approximately the P10 forecast or below, dependent on timing. On August 14<sup>th</sup>, the Fraser River Panel adopted the P10 abundance of 419,000 and no further changes were made at this time.

## Sockeye Closures

First Nations fisheries directed at sockeye remain closed in the marine area, lower Fraser and mid-Fraser. Sockeye fisheries in the Thompson system and the upper Fraser remain open at this time, and there are some First Nation Chinook fisheries proceeding at reduced levels and with gear restrictions. There were US fisheries on the Early Summers and part of the Summers, as well as test fisheries on these stocks, however, since August 13<sup>th</sup> test fisheries have been instructed to release sockeye with the exception of sample fish for collection of scales and DNA. There have been no Canadian commercial or recreational directed sockeye fisheries on Fraser sockeye this year. However, there are Canadian commercial fisheries being considered for pink salmon in the near future – dependent on the sockeye situation and pink salmon return - and Chinook recreational fisheries could re-open in the Fraser, which will have an associated sockeye impact.

The Fraser environmental and sockeye update is a summary of information from the August 27<sup>th</sup> Fraser River Panel Technical Committee distribution, FRAFS in-season update call (August 27<sup>th</sup>) with FRAFS Biologist Mike Staley, and August 28<sup>th</sup> Fraser River Panel teleconference.

## Fraser River Conditions

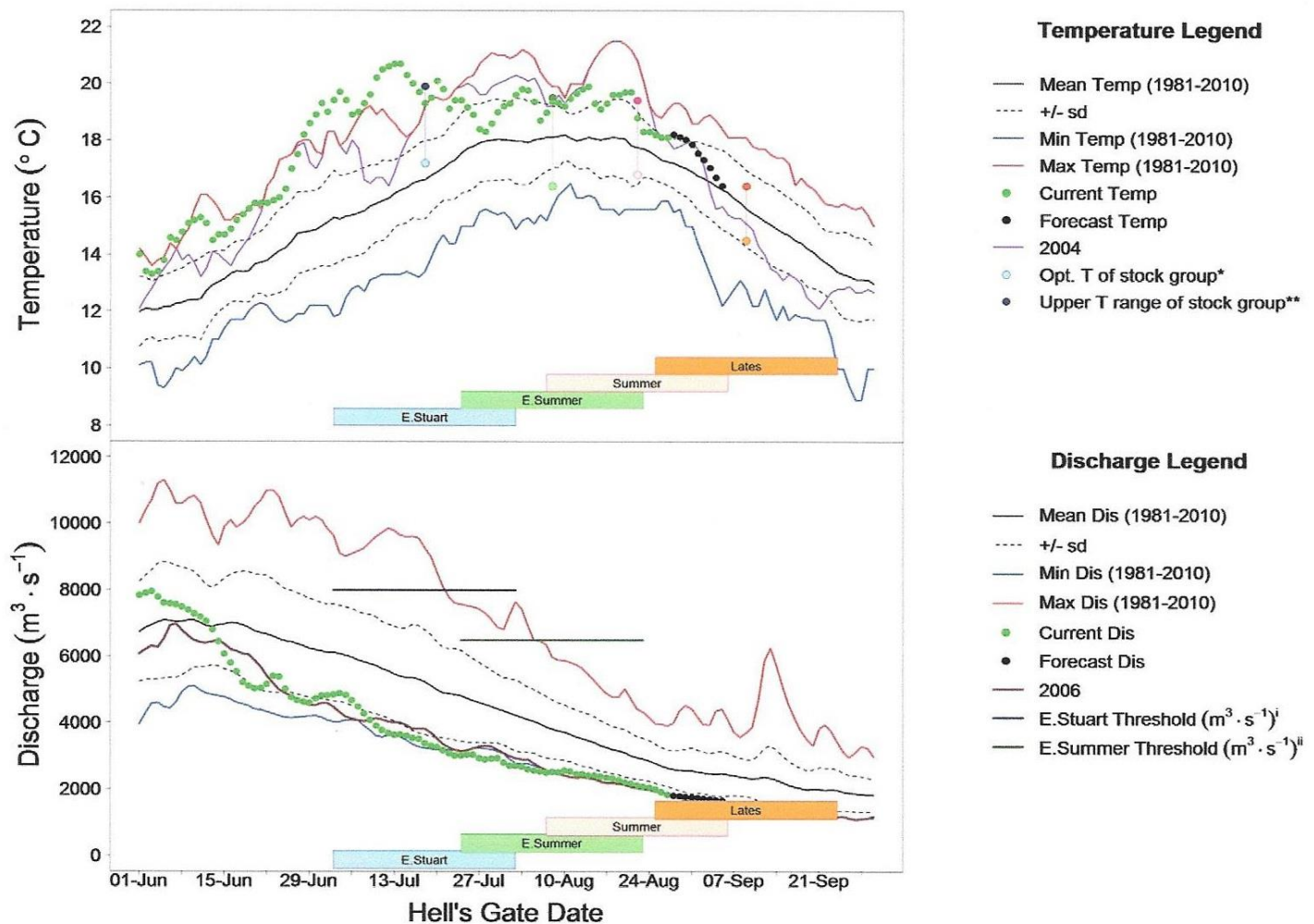
The main source of information for Temperature and Discharge data and forecasts is DFO's Environmental Watch Program (see link below).

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 August 28<sup>th</sup>, 2015):

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Run timing bars represent a 31 day spread of the run centered around the Hell's Gate date. Hell's gate timing is 5 days from Mission for Early Stuart and Lates; and 4 days from Mission for Early Summer and Summer run. <sup>i</sup>pMA is the proportional increase to spawning escapement targets to help ensure targets are achieved. <sup>ii</sup>%DBE is %difference between estimates of potential spawning escapement and spawning escapement. \*This is the optimum temp for aerobic swimming -  $T_{\text{opt}}$  (Eliason et al. (2011). Science 332: 109-112)\*\*This is the upper range of the optimum temp for aerobic swimming -  $T_{\text{pejus}}$ . <sup>i</sup>Discharge threshold of 8000cms for Early Stuart from Macdonald (2000). Can. Tech. Rep. Fish. Aquat. Sci. 2315: 120p. <sup>ii</sup>Discharge threshold of 6500cms for Early Summer from Macdonald et al. (2011). Trans. Am. Fish. Soc. 139: 768-782. 19 days of T & Q data are required to calculate a pMA - 15 days before the Hell's Gate Date and 3 days after. MA estimates can be calculated 4 days after the Area 20 date.

The Fraser River water temperatures have dropped over the past week and are now at 18.1 degrees Celsius (0.9 degrees Celsius above average for this time of year), and forecast to decrease to a temperature of 17.3 degrees Celsius by September 2nd, which is moving closer to average temperatures. The Fraser River discharge continues to track at near-record low levels for this time of year - as it has for almost the entire Fraser sockeye migration thus far - with a flow of 1,828  $\text{m}^3/\text{sec}$  at the Qualark water station, well below the average flow of 2,621  $\text{m}^3/\text{sec}$  for this time of year (30% below average). The discharge is predicted to continue tracking at the minimum observed values, with a forecast discharge of 1,705  $\text{m}^3/\text{sec}$  by September 2nd<sup>l</sup>.

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## Fraser River Fisheries Information

Fraser First Nations Fisheries information can be found on the DFO website at:

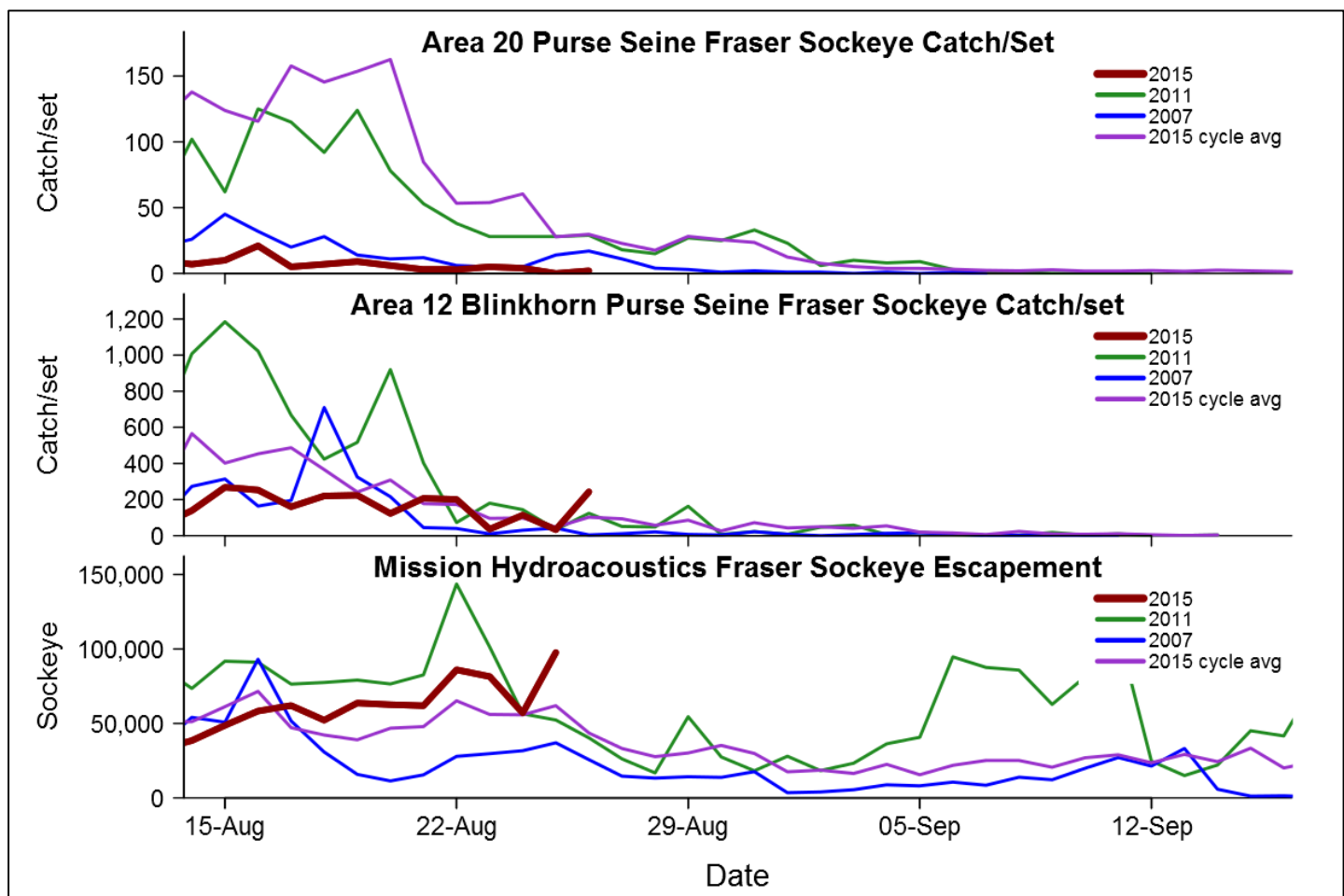
<http://www.pac.dfo-mpo.gc.ca/fm-gp/fraser/index-eng.html>

## Fraser Sockeye & Pink Salmon

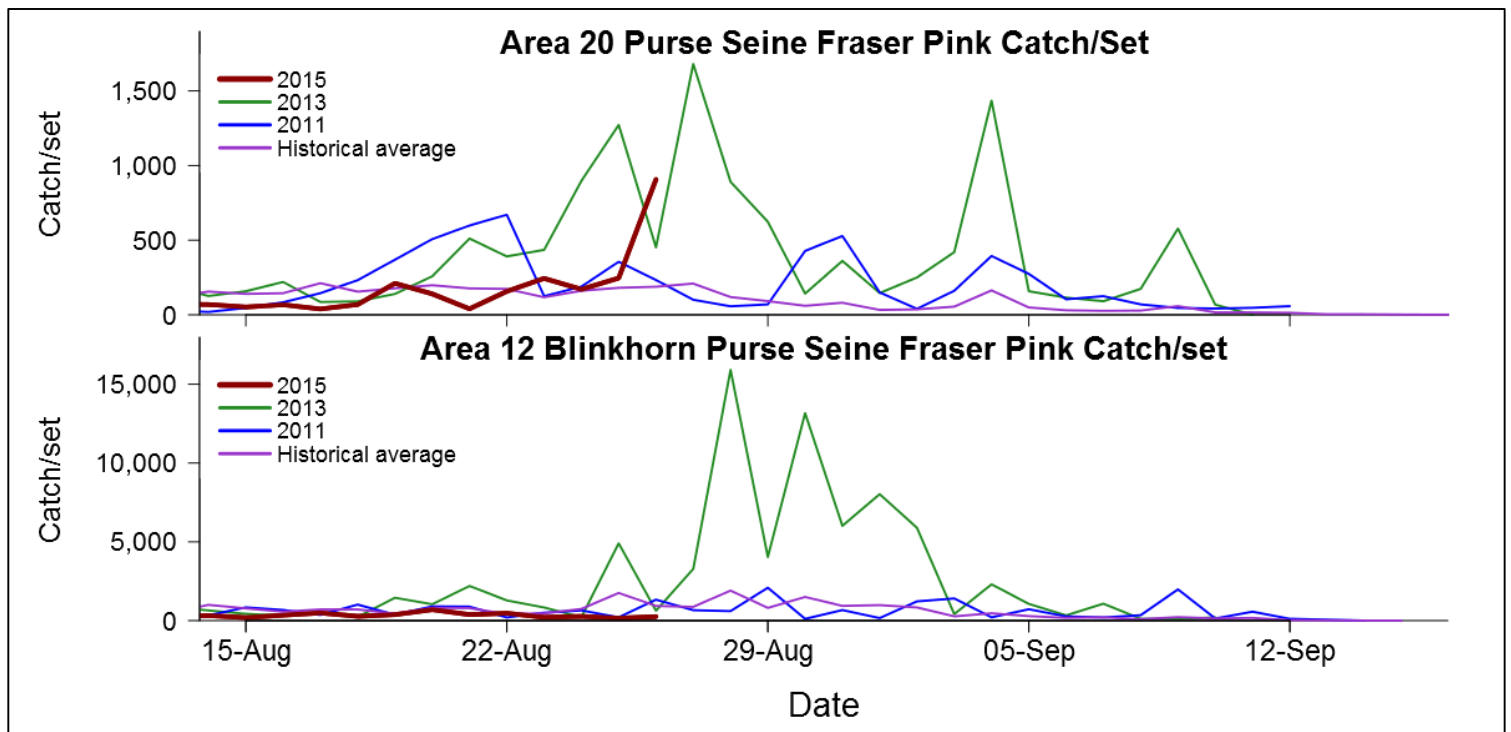
The Pacific Salmon Commission (PSC) distributes the Fraser River Panel meeting agenda and technical information for Panel members and observers to the process. The following information is a summary of key information from that document (August 27<sup>th</sup>, 2015) and the Fraser River Panel meeting from the next day.

At this time, marine gillnet test fisheries have been suspended as a result of low abundance. The purse seine test fisheries are still in operation in marine-approach areas (Strait of Juan de Fuca and Johnstone Strait) but, as stated above, are no longer retaining sockeye with the exception of some fish for sampling purposes. Hydroacoustics programs remain in full operation at Mission and Qualark (Yale). A total of 1,785,300 Fraser sockeye have been accounted-to-date, comprised of an in-season estimate of 32,100 Early Stuart sockeye, 377,900 Early Summer run sockeye, 1,297,500 Summers and 77,800 Lates. The Fraser Pink migration is underway, with an accounted catch + escapement of 691,000.

Test fishing graphs and Mission hydro-acoustics information from the August 27<sup>th</sup> PSC distribution package look like this:



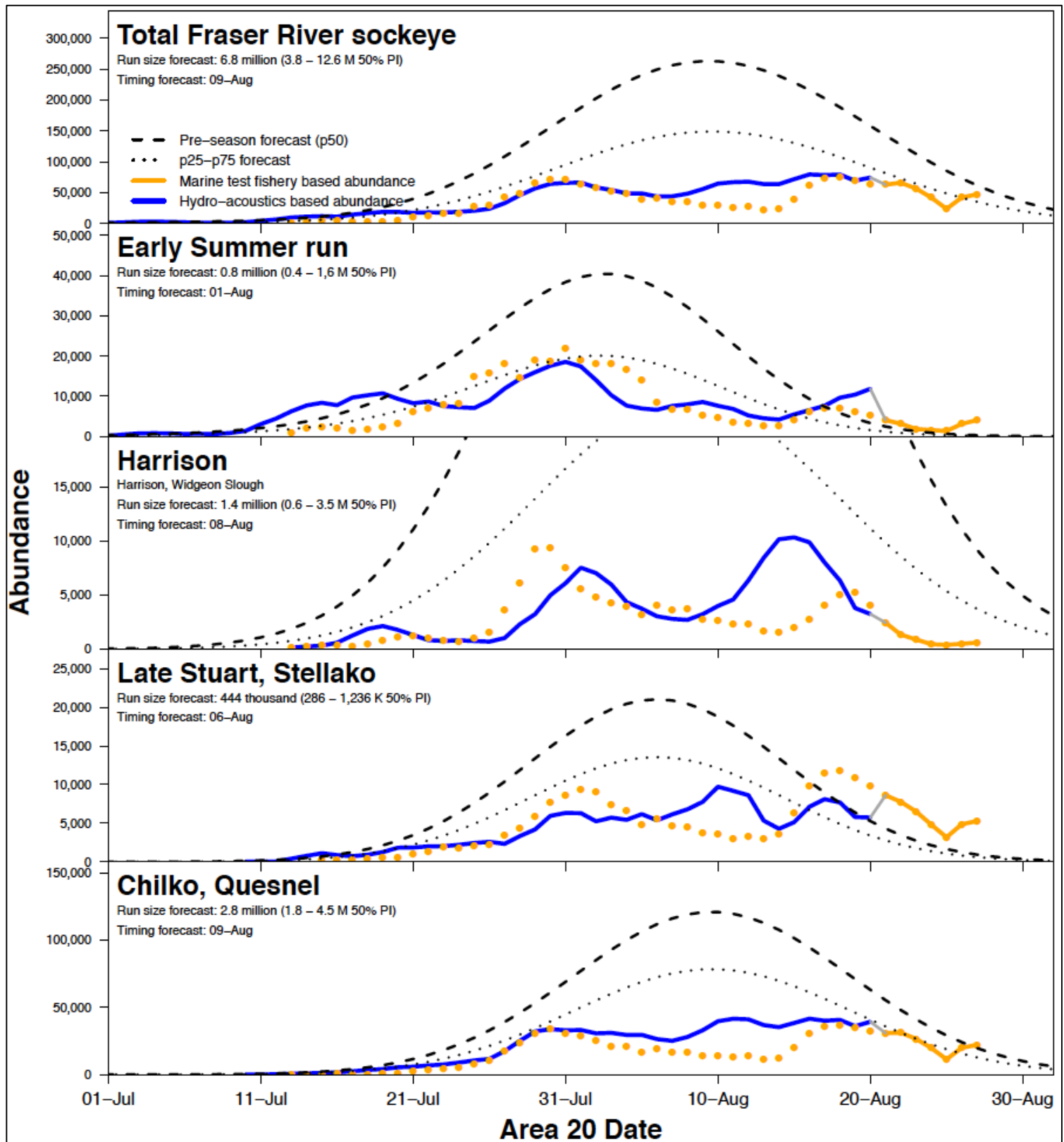
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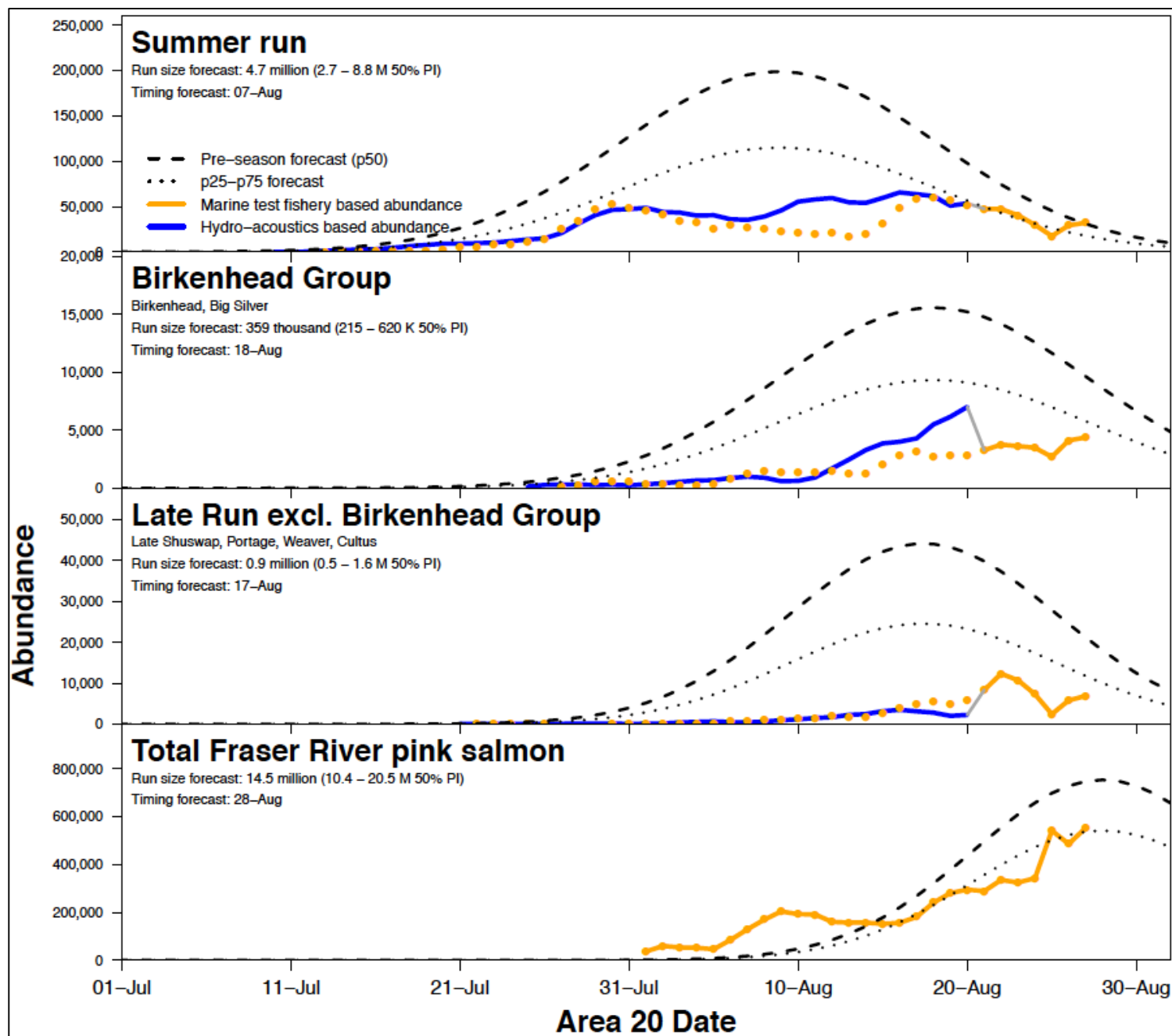
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## Estimated Abundance and In-Season Timing Compared to Forecast







The next Fraser River Panel meeting is scheduled for Tuesday, September 1<sup>st</sup> with a short meeting for the Panel on Monday morning to consider further pink directed fishing in US and a possible pink directed fishery in Area 20.

## 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](http://www.wateroffice.ec.gc.ca/index_e.html)

Pacific Salmon Commission Website: [www.psc.org](http://www.psc.org)

Pacific Salmon Commission Test Fisheries: [http://www.psc.org/info\\_testfishing.htm](http://www.psc.org/info_testfishing.htm)

Pacific Salmon Commission News and Regulatory announcements: [http://www.psc.org/news\\_frpnews.htm](http://www.psc.org/news_frpnews.htm)

Fraser River Mission Escapement Reports: [http://www.psc.org/info\\_inseasonfraserescapement.htm](http://www.psc.org/info_inseasonfraserescapement.htm)

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>

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