

**DRAFT AGENDA  
PACIFIC SALMON COMMISSION  
FRASER RIVER PANEL  
Friday September 2, 2022 at 11:00 am.  
via Zoom Webinar**

- 1) Roll Call (Panel and Tech members, others please email Julie, [ehrmantraut@psc.org](mailto:ehrmantraut@psc.org))
- 2) Webinar Etiquette:
  - a) Mute Phone: Please mute phone unless you are asking a question
  - b) Chat feature: Please use for questions regarding the distribution only
- 3) Agenda
- 4) Run status of Fraser River sockeye salmon relative to forecasts and adopted run sizes PSC Staff
- 5) In-season data flow for updating objectives PSC staff
  - a) Test fishing catches and acoustics
  - b) Mission projected Qualark comparison
  - c) Stock proportions
  - d) Environmental conditions
  - e) Big Bar update DFO/PSC staff
- 6) Assessments and Recommendations PSC Staff
  - a) Migration graphs, escapement projections, run size assessments
- 7) Review any decisions on staff recommendations (abundance, timing, management adjustments) Panel
- 8) Fisheries recommendations Panel
  - a) Secretariat staff evaluation of fisheries recommendations PSC Staff
  - b) Panel decisions on fisheries recommendations Panel
- 9) Other Business Panel
  - a) Test fishery end dates
  - b) Weekly Report
- 10) Next FRP Meeting, Tuesday September 6, 11:00 a.m. via Zoom Panel  
 Next Technical Committee meeting, Thursday September 8, 1:00 p.m. via Zoom TC

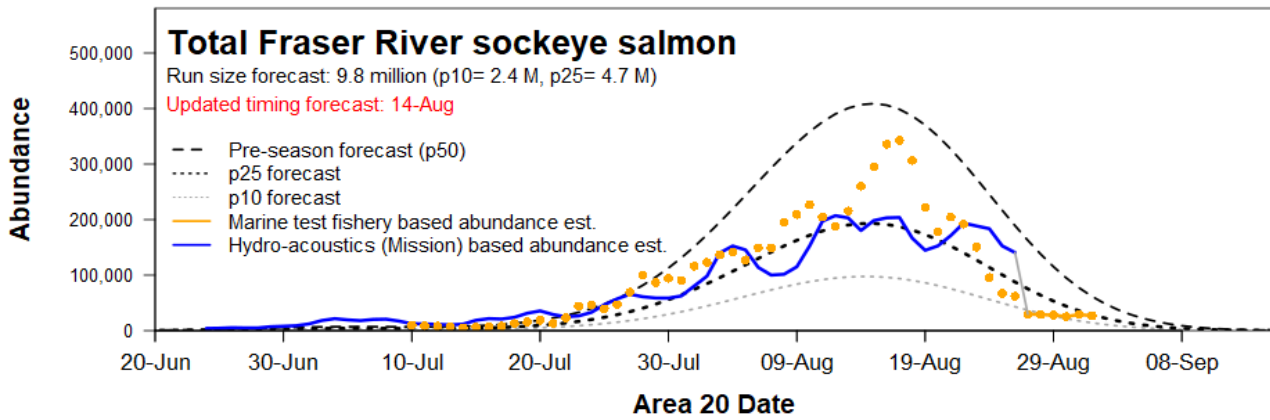
**2022 Run status of Fraser sockeye salmon**

Date: Sep. 2, 2022

The information presented in this distribution has been prepared by PSC Secretariat staff and should be considered preliminary until reviewed by the Fraser River Panel

Week of: Aug. 28 - Sep. 3, 2022	Sockeye				Total Fraser
	Management Group				
	E.Stuart	E.Summer	Summer	Late	
Mission passage (incls Pitt, Alouette, Coquitlam)	243,300	563,900	2,854,400	542,500	4,204,100
Catch downstream of Mission	1,200	40,700	520,400	247,900	810,200
Accounted Run To Date	244,500	604,600	3,374,800	790,400	5,014,300
<b>Run size adopted in-season<sup>2</sup></b>	<b>244,000</b>	<b>600,000</b>	<b>3,500,000</b>	<b>1,600,000</b>	<b>5,944,000</b>
Run size forecasted pre-season	105,000	1,579,000	4,403,000	3,688,000	9,775,000
<b>Area 20 timing adopted in-season</b>	<b>6-Jul</b>	<b>30-Jul</b>	<b>14-Aug</b>	<b>16-Aug</b>	<b>na</b>
Area 20 timing expected pre-season	4-Jul	6-Aug	10-Aug	18-Aug	13-Aug
<b>Johnstone Str. Diversion Rate</b>	In-season 5-day average				<b>66%</b>
	Preseason forecast of annual rate:				48%

<sup>2</sup> Run sizes are usually not adopted until after the peak of the run has passed through marine test fishery areas in Juan de Fuca and Johnstone straits.



## 2022 Catch-to-date by fishery

Date: Sep. 2, 2022

Week of: Aug. 28 - Sep. 3, 2022		Sockeye	
		Total	Fraser
<b>Canada</b>		<b>724,328</b>	<b>722,483</b>
	<b>Commercial</b>	<b>0</b>	<b>0</b>
	B Purse Seine	0	0
	D Gillnet	0	0
	E Gillnet	0	0
	G Troll	0	0
	H Troll	0	0
	<b>First Nations</b>	<b>709,178</b>	<b>707,333</b>
	Food, Social & Ceremonial (FSC)	709,178	707,333
	Marine	294,864	293,042
	Fraser R.	414,314	414,291
	Economic Opportunity (EO) & Demonstration (Demo)	0	0
	<b>Escapement Surplus to Spawning Requirements (ESSR)</b>	<b>0</b>	<b>0</b>
	<b>Recreational</b>	<b>0</b>	<b>0</b>
	<b>Charter (Albion &amp; A12 Chum test fishery)</b>	<b>684</b>	<b>684</b>
	<b>Other****</b>	<b>14,466</b>	<b>14,466</b>
<b>United States</b>		<b>318,709</b>	<b>318,585</b>
	<b>Commercial</b>	<b>307,530</b>	<b>307,545</b>
	Treaty Tribes (TRB)	232,054	232,098
	All Citizen (AC)	75,476	75,446
	<b>Treaty Tribes Ceremonial &amp; Subsistence (C&amp;S)</b>	<b>11,179</b>	<b>11,041</b>
	<b>All Citizen Recreational</b>	<b>0</b>	<b>0</b>
	<b>Other****</b>	<b>0</b>	<b>0</b>
	<b>Alaska *</b>	<b>na</b>	<b>na</b>
<b>Panel-approved Test Fisheries</b>		<b>35,873</b>	<b>35,428</b>
	<b>Panel Waters</b>	<b>23,848</b>	<b>23,610</b>
	Canada	23,735	23,500
	U.S.	113	110
	<b>Non-Panel Waters**</b>	<b>12,025</b>	<b>11,818</b>
<b>Total</b>		<b>1,078,910</b>	<b>1,076,497</b>
	Catch Seaward of Mission ***	812,477	810,064
	Catch Upstream of Mission	266,433	266,433

\* Alaska data are processed post-season and so are unavailable in-season.

\*\* Includes Qualark

\*\*\* All catches in marine areas and in the Fraser River downstream of Mission.

\*\*\*\* May include unauthorized directed retention or unauthorized bycatch retention in fisheries directed at other species

	Fraser Sockeye				Total	
	Early Stuart	Early Summer	Summer	Lates		
<b>RUN STATUS, ESCAPEMENT NEEDS &amp; AVAILABLE SURPLUS</b>						
<b>Pre-season or Adopted In-season Run Size</b>	<b>244,000</b>	<b>600,000</b>	<b>3,500,000</b>	<b>1,600,000</b>	<b>5,944,000</b>	
<b>Adult Spawning Escapement Target (SET)</b>	<b>195,200</b>	<b>375,500</b>	<b>1,750,000</b>	<b>1,104,800</b>	<b>3,425,500</b>	
%SET from TAM rules	80%	63%	50%	69%		
<b>Management Adjustment (MA)*</b>	<b>2,594,210</b>	<b>221,550</b>	<b>70,000</b>	<b>243,060</b>	<b>3,128,820</b>	
Proportional MA (pMA)*	13.29	0.59	0.04	0.22		
Adjusted Spawning Escapement Target (SET) **	244,000	597,050	1,820,000	1,347,860	4,008,910	
<b>Test Fishing (TF)*****</b>	<b>1,080</b>	<b>7,000</b>	<b>22,000</b>	<b>12,000</b>	<b>42,080</b>	
Surplus above Adjusted SET & Test fishing	0	0	1,658,000	240,140	1,898,140	
<b>DEDUCTIONS &amp; TAC FOR INTERNATIONAL SHARING</b>						
<b>Aboriginal Fishery Exemption (AFE)</b>	<b>1,697</b>	<b>70,000</b>	<b>175,221</b>	<b>153,082</b>	<b>400,000</b>	
Total Deductions (Adj. SET + TF + Available AFE)	246,777	674,050	2,017,221	1,512,942	4,450,990	
<b>Available TAC for International Sharing</b>	<b>0</b>	<b>0</b>	<b>1,482,779</b>	<b>87,058</b>	<b>1,569,837</b>	
<b>UNITED STATES (Washington) TAC</b>						
Proportionally Distributed TAC ***	16.5%	0	0	244,660	14,360	259,020
U.S. Payback ***	0.0%	0	0	-440	-30	-470
<b>Proportionally Distributed TAC + Payback</b>	<b>0</b>	<b>0</b>	<b>244,220</b>	<b>14,330</b>	<b>258,550</b>	
Treaty Tribes Share ***	67.7%	0	0	165,190	9,690	174,880
All Citizen Share	32.3%	0	0	79,030	4,640	83,670
<b>CANADA TAC</b>						
Aboriginal Fishery Exemption (AFE)	1,697	70,000	175,221	153,082	400,000	
<b>Canadian TAC + AFE</b>	<b>1,697</b>	<b>70,000</b>	<b>1,413,780</b>	<b>225,810</b>	<b>1,711,287</b>	
<b>CATCH-TO-DATE</b>						
<b>Test</b>	<b>1,080</b>	<b>6,450</b>	<b>21,320</b>	<b>6,580</b>	<b>35,430</b>	
Treaty Tribes (Wash.) / Ceremonial (TRB)	160	15,840	137,000	90,140	243,140	
All Citizen (Wash.)	0	760	46,210	28,480	75,450	
Other (Wash.)****	0	0	0	0	0	
<b>Washington</b>	<b>160</b>	<b>16,600</b>	<b>183,210</b>	<b>118,620</b>	<b>318,590</b>	
First Nations Catch (including AFE)	1,700	49,200	518,470	137,970	707,330	
Planned Charter & Recreational Shares	10	70	510	88	684	
Other****	1,270	5,620	7,500	70	14,470	
Total Commercial (including FN EO/Demo*****)	0	0	0	0	0	
<b>Canada</b>	<b>2,980</b>	<b>54,890</b>	<b>526,480</b>	<b>138,128</b>	<b>722,480</b>	
<b>Total Catch in All Fisheries</b>	<b>4,220</b>	<b>77,940</b>	<b>731,010</b>	<b>263,328</b>	<b>1,076,500</b>	
Exploitation Rate (catch-to-date / run size)	1.7%	13.0%	20.9%	16.5%	18.1%	
Exploit. Rate with fishery-induced mortality included	1.7%	13.0%	20.9%	16.5%	18.1%	
<b>CATCH REMAINING (BALANCE)</b>						
<b>Washington</b>	<b>-160</b>	<b>-16,600</b>	<b>61,010</b>	<b>-104,290</b>	<b>-60,040</b>	
<b>Canada</b>	<b>-1,283</b>	<b>15,110</b>	<b>887,300</b>	<b>87,682</b>	<b>988,809</b>	
Balance Remaining [ below share / -above share]	<b>-1,443</b>	<b>-1,490</b>	<b>948,310</b>	<b>-16,608</b>	<b>928,769</b>	

\* Given the 2022 pre-season forecasts of abundances, fisheries decisions that could impact the Early Stuart sockeye management group will be based on Low Abundance Exploitation Rate (LAER) limit of 10%. The intent of LAER is to allow for limited fisheries directed on co-migrating stocks or species, but also may permit limited harvest in some cases. The application of the LAER obviates the need for management adjustments for this group.

\*\* The adjusted SET is the lesser of the run size or the sum of the MA + TAM - defined SET.

\*\*\* Washington sockeye and pink shares according to Annex IV of the Pacific Salmon Treaty.

    Sockeye: 16.5% of the TAC - payback (maximum of 5% of share).

    Pink: 25.7% of the TAC - payback (maximum of 5% of share)

\*\*\*\* May include unauthorized directed retention or unauthorized bycatch retention in fisheries directed at other species.

\*\*\*\*\* EO = FN Economic Opportunity fisheries; Demo = FN Demonstration fisheries.

\*\*\*\*\* The test fishing deduction was updated in-season to 42,079 on August 22, 2022.

## 2022 Fraser Sockeye Test Fishing &amp; Escapement Summary

Area/Gear Location From A20	Johnstone Strait	Juan de Fuca Strait	Fraser River									
	A12 PS Blinkhorn (-1 day)	A20 PS Port Renfrew (0 days)	A29B TR Gulf Troll (+4 days)	A29-13 GN Cottonwood (+5 days)	A29-16 GN Whonnock (+6 days)	Whon CPUE Estimate (+6 days)	GN Catch (+8 days)	Qualark Estimate <sup>1</sup>	Method <sup>2</sup>	Mission Hydroacoustics Estimate <sup>3</sup> (+6 days)	Method <sup>4</sup>	Hells Gate Estimates <sup>5</sup> (+10 days)
12-Aug	5,147	2,151		93	45	3.76	122	98,146	RB + LB	85,400	A1+S1+M+A2	77,820
13-Aug	6,632	1,259		59	48	4.06	149	138,310	RB + LB	70,000	A1+S1+M+A2*	No Count
14-Aug	8,354	1,956		38	56	4.87	143	108,354	RB + LB	86,200	A1+S1+M+A2	No Count
15-Aug	9,901	1,459		105	11	1.00	116	115,372	RB + LB	56,200	A1+S1+M+A2	No Count
16-Aug	11,520	1,202		289	12	1.09	150	92,953	RB + LB	90,700	A1+S1+M+A2	111,450
17-Aug	8145 (5 sets)	3020 (4 sets)		148	17	1.57	64	66,961	RB + LB	186,500	A1+S1+M+A2	110,550
18-Aug	2,694	3,658		90	45	1.64	80	65,976	RB + LB	191,500	A1+S1+M+A2*	61,400
19-Aug	245	3,384		124	88	7.16	88	112,830	RB + LB	118,200	A1+S1+M+A2	No Count
20-Aug	590	3,471		58	65	5.21	41	117,263	RB + LB	165,700	A1+S1+M+A2*	No Count
21-Aug	267	3,625		74	38	3.23	25	71,071	RB + LB	93,600	A1+S1+M+A2*	80,630
22-Aug	107	7,825		101	60	4.65	82	125,100	RB + LB	120,800	A1+S1+M+A2*	60,960
23-Aug	622	2,003	269 (Q3), 227 (Q4)	67	115	9.10	84	89,709	RB + LB	129,600	A1+S1+M+A2	131,290
24-Aug	3,182	534	124 (Q2), 288 (Q5)	70	83	6.29	48	69,706	RB + LB	111,600	A1+S1+M+A2*	66,530
25-Aug	353	210 (3 sets)	96 (Q1), 553 (Q6A)	86	113	9.04	85	93,246	RB + LB	80,500	A1+S1+M+A2*	110,160
26-Aug	128	137		40	287	22.96	68	80,794	RB + LB	132,800	A1+S1+M+A2	No Count
27-Aug	No sets completed	222 **		147	153	12.24	71	100,881	RB + LB	165,900	A1+S1+M+A2*	No Count
28-Aug	366	122 **		133	149	11.92	66	66,847	RB + LB	149,800	A1+S1+M+A2*	112,910
29-Aug	252 (2 sets)	114 **	121 (Q3), 182 (Q4)	65	9	0.84	67	124,122	RB + LB	201,800	A1+S1+M+A2*	No Count
30-Aug	239 (5 sets)	59 **	219 (Q2), 36 (Q6A)	88	55	4.43	116	150,660	RB + LB	172,300	A1+S1+M+A2	180,100
31-Aug	1,164	Did not fish	46 (Q1), 23 (Q5)	154	44	3.46	53	138,633	RB + LB	143,200	A1+S1+M+A2*	No Count
1-Sep	523	14		50	52	4.17	64			128,800	A1+S1+M+A2*	164,070
2-Sep												
3-Sep												

<sup>1</sup> Qualark escapement estimate - does not include Chilliwack, Pitt, Harrison, Birkenhead, Big Silver, Weaver, and Cultus

<sup>2</sup> Qualark source:

RB + LB = Right-bank (RB) + Left-bank (LB)

<sup>3</sup> Mission escapement estimate - does not include Pitt

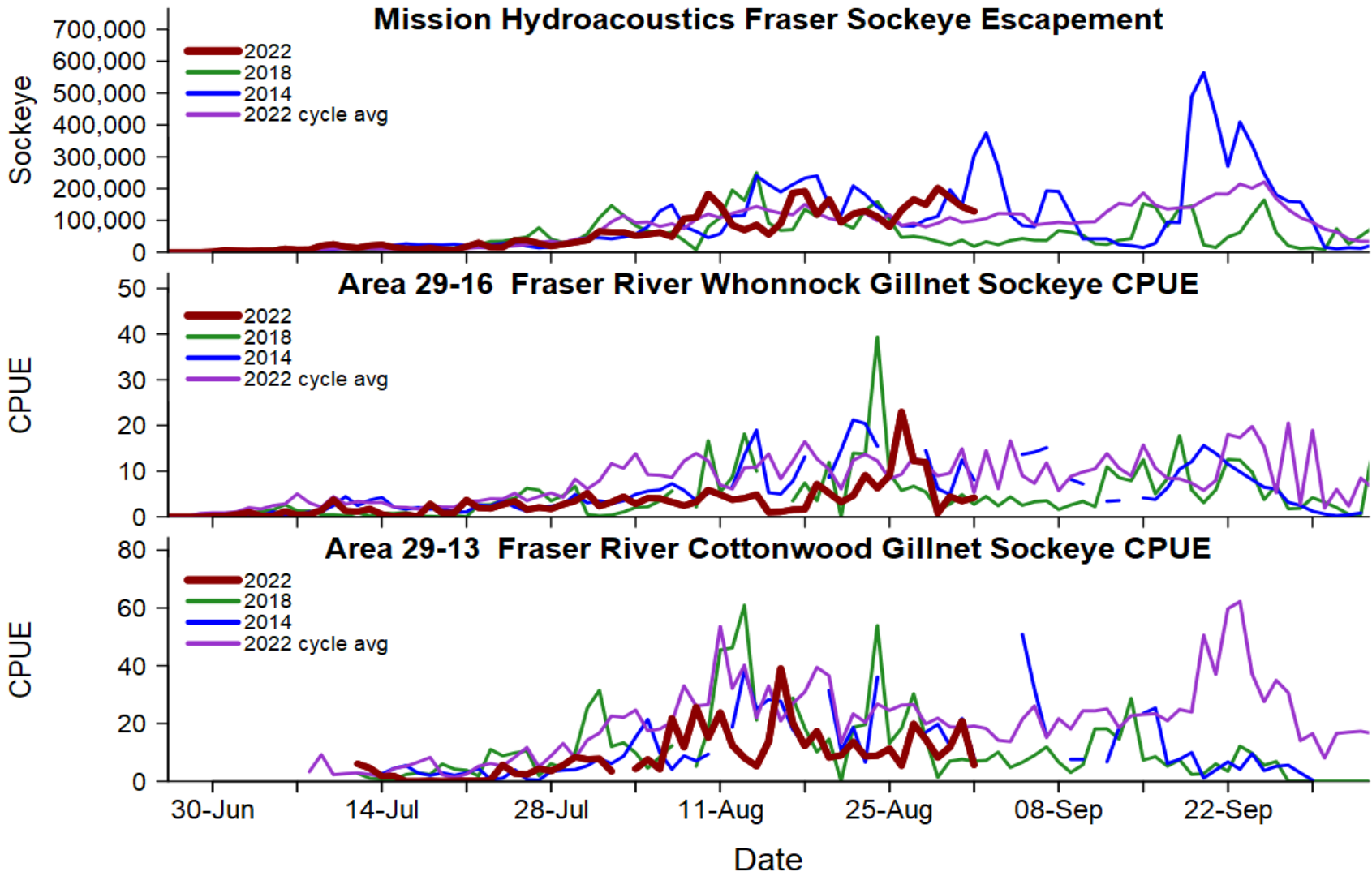
<sup>4</sup> Mission source:

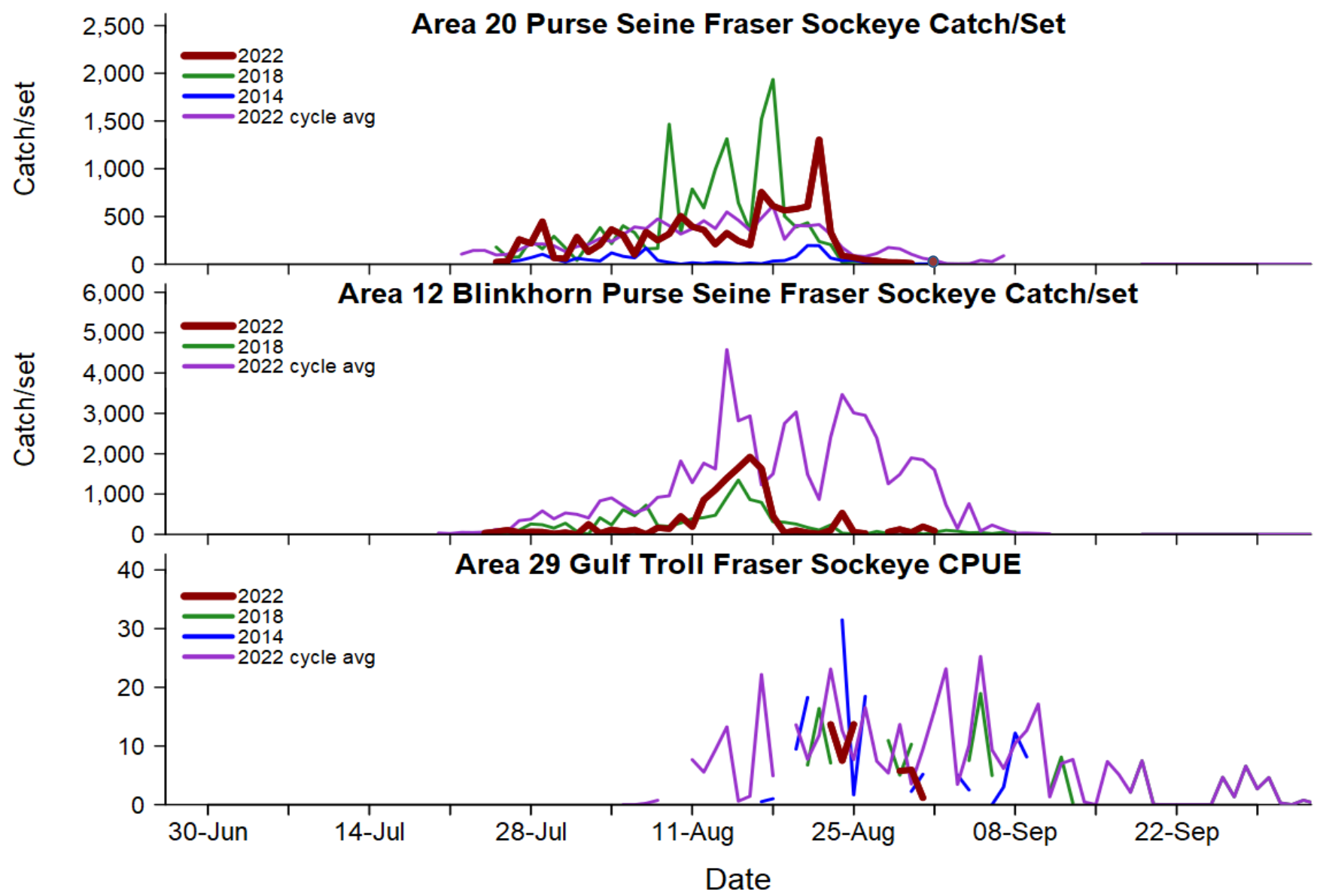
A1+S1+M+A2 = Left bank ARIS (A1) + Left bank split-beam (S1) + Mobile split-beam (M) + Right bank ARIS (A2)

<sup>5</sup> Daily Hells Gate abundance estimate; actual daily count has been expanded.

\*Fishery occurred at Mission site

\*\*Alternate vessel & net used in Area 20 starting on August 27 due to mechanical issues with primary fishing vessel





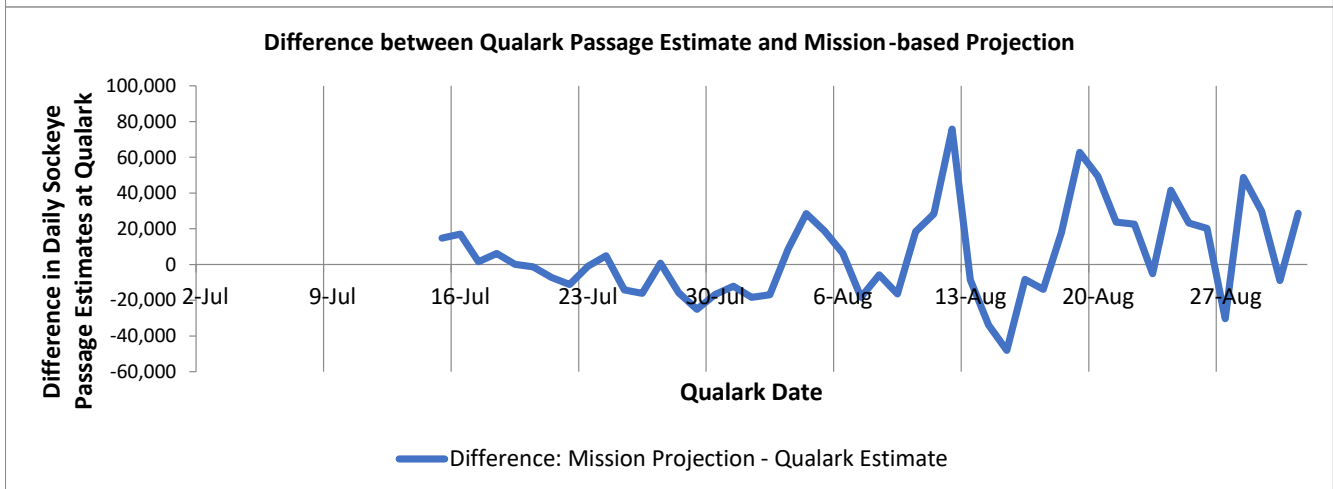
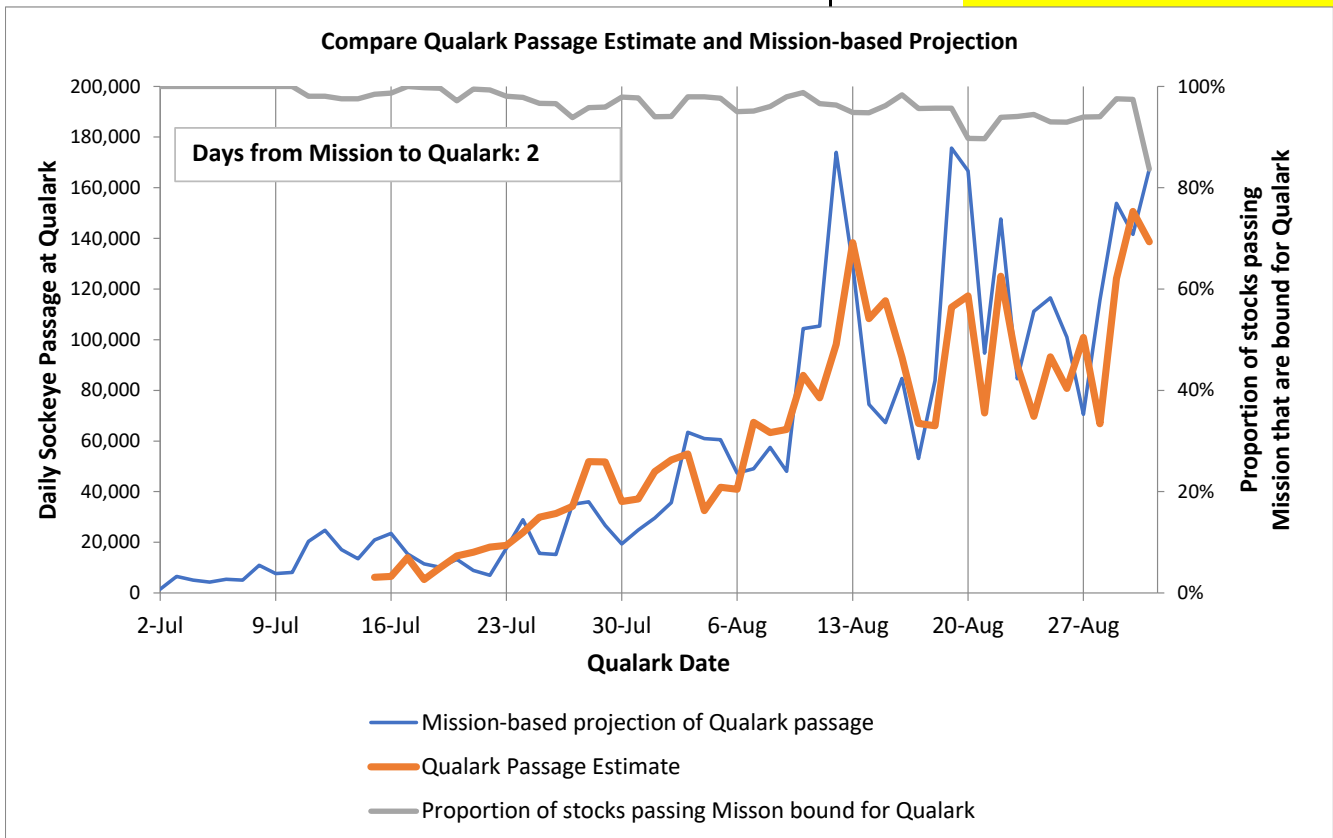
Fraser Sockeye: Qualark Passage Estimate and Mission-based Projection

Year: **2022**

Date: 2-Sep-22

Time: 9:13 AM

	All Days	Common Days
Mission projection	3,803,365	3,305,557
Qualark estimate	3,061,407	3,061,407
	<b>Difference</b>	<b>244,151</b>
	<b>%Difference</b>	<b>7%</b>

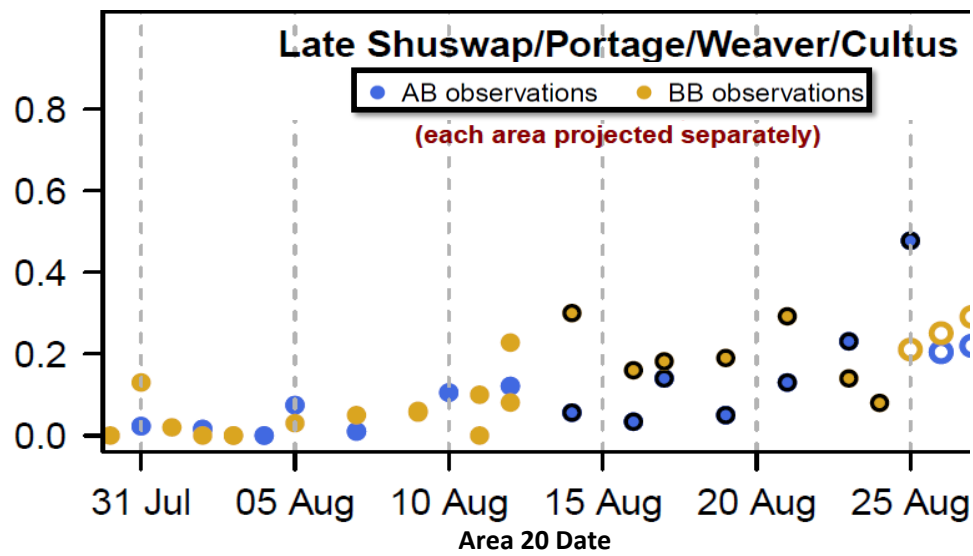




### 2022 Fraser River Sockeye Salmon Stock identification Review

Recent stock composition estimates for sockeye salmon

Fishing Area/Gear <sup>1</sup> Sector <sup>2</sup> Date Type <sup>3</sup> Sample Size (n) %Fraser						Fraser-only Stock Proportions by Reporting Group <sup>4</sup> (%)												Age (%)					
						Early Stuart	Early Summer					Summer				Late			Overall Stocks				
						Early Stuart	Chilli-wack	Pitt Alouette Coquit-lam	Nadina Bowron Gates Nahat-latch Taseko	Early Thompson	Early Summer sub-total	Harrison Widg-eon	Late Stuart Stellako	Chilko Ques-nel	Raft North Thompson	Summer sub-total	Birken-head Big Silver	Late Shuswap Portage	Weaver Cultus	Late sub-total	Age-4 <sub>2</sub>		
<b>Johnstone Strait &amp; Queen Charlotte Strait</b>																							
Gu4 tr	tf	Aug 29	DNA	79	100%	0%						1%	1%	4%	1%	7%			72%	21%	93%	94%	
Gu2 tr	tf	Aug 30	DNA	80	100%	0%							6%	13%	4%	23%			64%	12%	77%	99%	
Gu1 tr	tf	Aug 31	DNA	46	100%	0%							2%	41%	2%	45%			6%	42%	5%	53%	94%
A12 ps	tf	Aug 30	DNA	88	100%	0%							10%	63%		74%			1%	11%	14%	25%	96%
A12 ps		Sep 4	Prediction	1	100%	0%							6%	75%	0%	82%			2%	11%	5%	18%	NA
<b>Juan de Fuca Strait &amp; Washington &amp; Other</b>																							
A20 ps	tf	Aug 27	DNA	80	100%	0%							4%	71%		74%			4%	15%	4%	23%	NA
A20 ps	tf	Aug 28	DNA	89	99%	0%							8%	65%		73%			2%	16%	9%	27%	NA
A20 ps	tf	Aug 30	DNA	59	100%	0%							3%	67%		70%			3%	20%	7%	30%	98%
A20 ps		Sep 4	Prediction	1	100%	0%							4%	73%		77%			3%	14%	6%	22%	NA
<b>In-river</b>																							
BB gn	tf	Aug 28	DNA	50	100%	0%							8%	72%		79%			6%	15%		21%	100%
BB gn	tf	Aug29-30	DNA	100	99%	0%							8%	79%		87%			3%	8%	1%	11%	99%
AB gn	tf	Aug29-30	DNA	65	100%	0%							11%	49%	7%	67%			9%	16%	8%	33%	95%
AB gn	tf	Aug 31	DNA	44	98%	0%								45%		45%			7%	29%	19%	55%	88%



**Notes for sockeye and pink tables:**

<sup>1</sup> GU TR=29\_1-6, BB GN=29\_13 (Cottonwood,Brownsville), AB GN=29\_16 (Whonnock), MI GN=Mission test fishery, QU GN=Qualark

<sup>2</sup> TF=sample from test fishery catch, CM=sample from commercial catch, C&S=ceremonial & subsistence catch, FSC=food, social, & ceremonial catch, rec= recreational catch

<sup>3</sup> Predictions for sockeye are multinomial extrapolations of current year data to 5 days after the last observation; Predictions for pink salmon are projections of stock compositions based on historic and current data

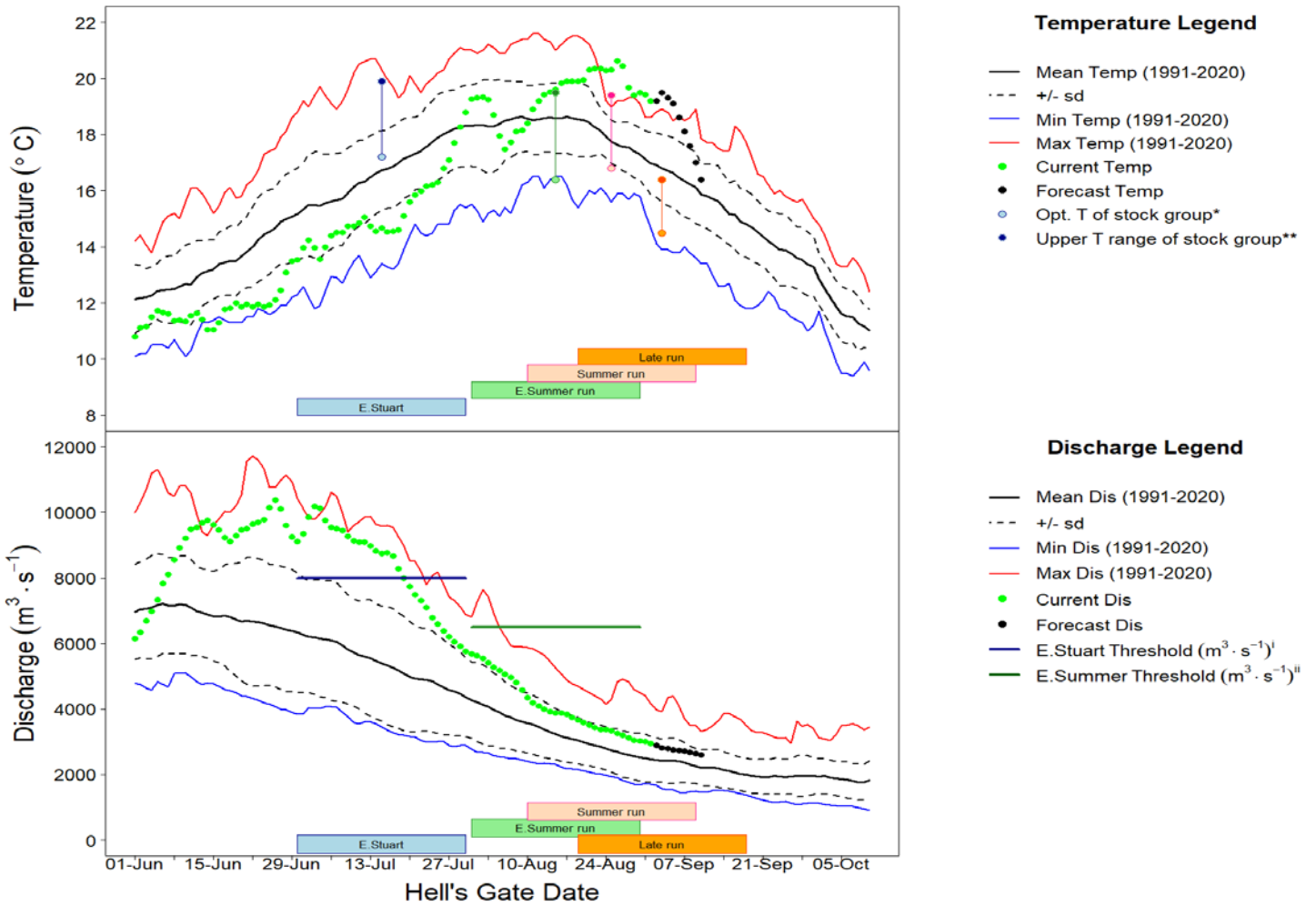
<sup>4</sup> Further information relating stock group descriptions to spawning ground locations and population definitions can be found at [http://www.psc.org/FRPWeb/Escapement/PSC\\_Fraser\\_Sockeye\\_Stock\\_Group\\_Definitions.pdf](http://www.psc.org/FRPWeb/Escapement/PSC_Fraser_Sockeye_Stock_Group_Definitions.pdf)

Results in grey text have been presented to the Panel previously

## Fraser River Environmental Report for September 01, 2022

<b>Observed Fraser River Temperature at Qualark for 01-Sep</b>	19.2°C
<b>Average (1991-2020) Historical Temperature on this day</b>	17.1°C
<b>Deviation from Average</b>	2.1°C
<b>Forecast Temperature for 07-Sep-22</b>	18.1°C
The forecast in Kamloops and in Prince George is for variable air temperatures for the period.	

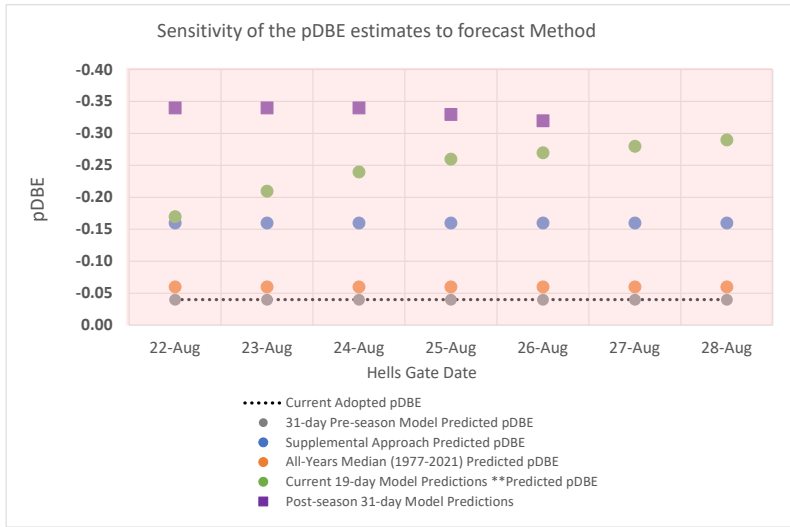
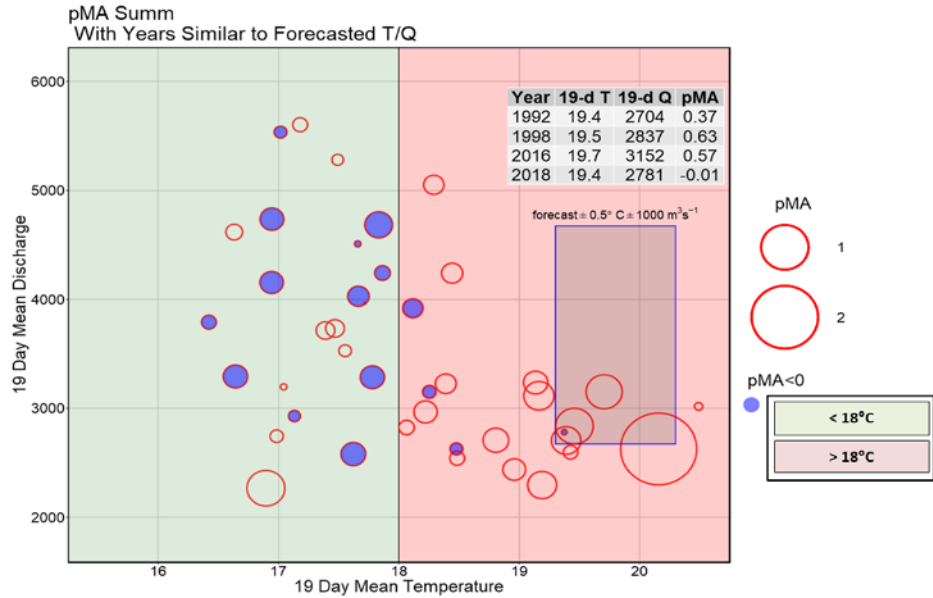
<b>Observed Fraser River Discharge at Hope for 01-Sep</b>	2956 m <sup>3</sup> ·s <sup>-1</sup>
<b>Average (1991-2020) Historical Discharge on this day</b>	2474 m <sup>3</sup> ·s <sup>-1</sup>
<b>% above or below Historical Discharge</b>	19%
<b>Forecast Discharge for 07-Sep-22</b>	2709 m <sup>3</sup> ·s <sup>-1</sup>
The forecast in Kamloops and Prince George is for some precipitation (5 mm and 11 mm, respectively).	



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 Late run; 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<sub>opt</sub> (Eliason et al. (2011). Science 332: 109-112)\*\*This is the upper range of the optimum temp for aerobic swimming - T<sub>pejus</sub>.<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 run from Macdonald et al. (2010). 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.

## Summer run pDBE Forecast and Sensitivity Analysis for September 02, 2022

Based on the retrospective analysis evaluation of 2010-2021 for Summer run the best performing in-season model is the 31-day pre-season model



Model Performance Based on "In-season pDBE Approach" Retrospective			Best		Tied Second Best (too conservative)		Tied Second Best (not conservative enough)		Least	
Hells Gate Date	19-day Average Temperature °C	19-day Average Discharge m³/s	Current Adopted pDBE	31-day Pre-season Model Predicted pDBE	Supplemental Approach Predicted pDBE	All-Years Median (1977-2021) Predicted pDBE	Current 19-day Model Predictions **Predicted pDBE	Post-season 31-day Model Predictions *** Predicted pDBE		
11-Aug	22-Aug	19.5	3924	-0.04	-0.04	-0.16	-0.06	-0.17	-0.34	
12-Aug	23-Aug	19.6	3835	-0.04	-0.04	-0.16	-0.06	-0.21	-0.34	
13-Aug	24-Aug	19.8	3750	-0.04	-0.04	-0.16	-0.06	-0.24	-0.34	
* 14-Aug	25-Aug	19.8	3673	-0.04	-0.04	-0.16	-0.06	-0.26	-0.33	
15-Aug	26-Aug	19.9	3605	-0.04	-0.04	-0.16	-0.06	-0.27	-0.32	
16-Aug	27-Aug	19.9	3543	-0.04	-0.04	-0.16	-0.06	-0.28	NA	
17-Aug	28-Aug	19.9	3485	-0.04	-0.04	-0.16	-0.06	-0.29	NA	
<b>Implied pMA</b>										
* 14-Aug	25-Aug	19.8	3673	0.04	0.04	0.19	0.06	0.35	0.49	

\* Currently adopted timing with updated forecast information.

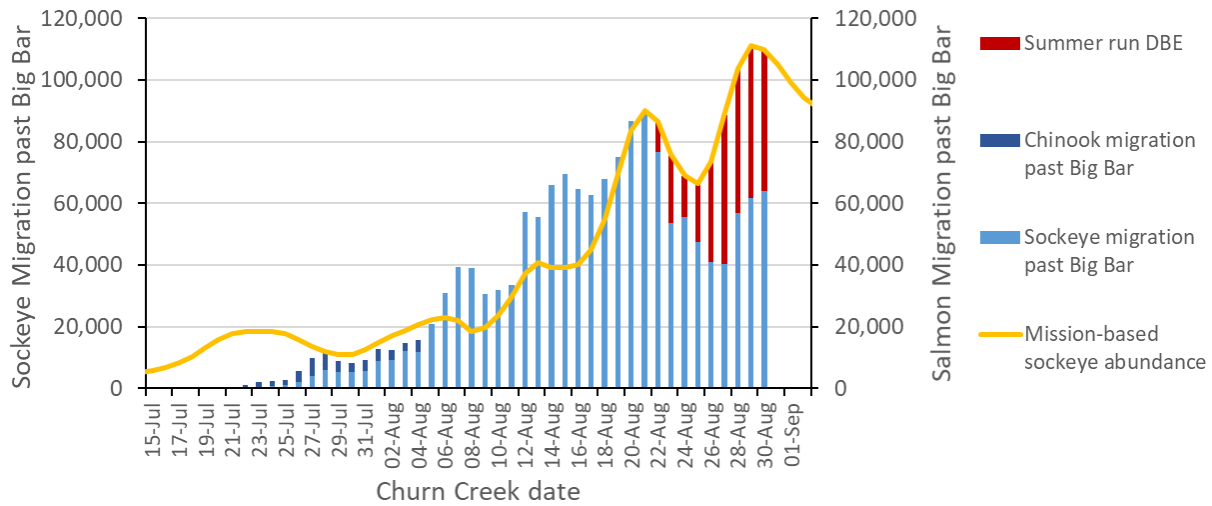
\*\* All 19 days of observed temperature and discharge.

\*\*\* Estimate for Aug 14 Area 20 timing has 23 days of observed and 8 days of forecast temp. and disch. The 31-day average temperature is 19.4 °C

## Summer run DBE based on difference between Mission predictions to Big Bar and Big Bar estimates

- Early predictions of differences between estimates on the spawning grounds could be made by the difference between estimates currently passing Mission:
  - o Predicted Summer run abundance past Big Bar based on Mission: 1,325,090
  - o Predicted Summer run abundance past Big Bar minus difference in red (see figure): 1,037,662
  - o Predicted Summer run DBE at Big Bar: -0.22
- For the Summer run salmon that made it to Big Bar, it is likely that the actual DBE will be larger than the DBE at Big Bar given the substantial migration distance from Big Bar to the Summer run spawning grounds
- Two thirds of the Summer run have not yet made it to Big Bar and these sockeye are likely to experience lower temperatures and potentially lower DBEs
- The median pDBE for the last 9 high temperature years is -0.15 with a median temperature of 19.4 °C

**Mission-based sockeye migration predictions past Big Bar compared to observed salmon migration at Churn Creek and potential Summer run DBE**



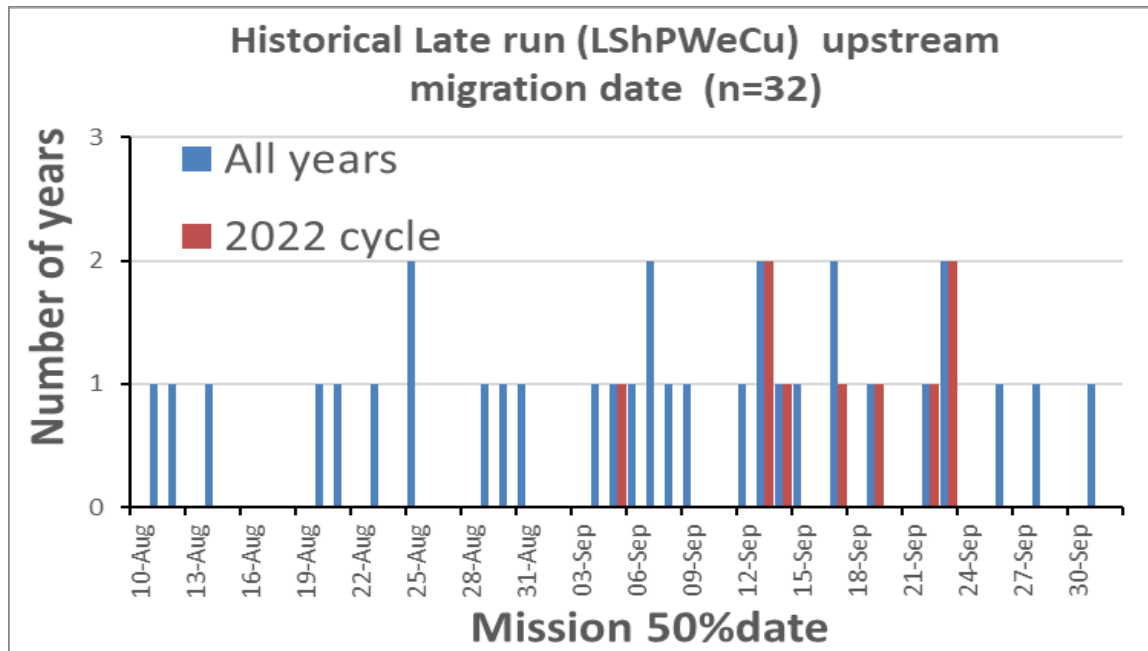
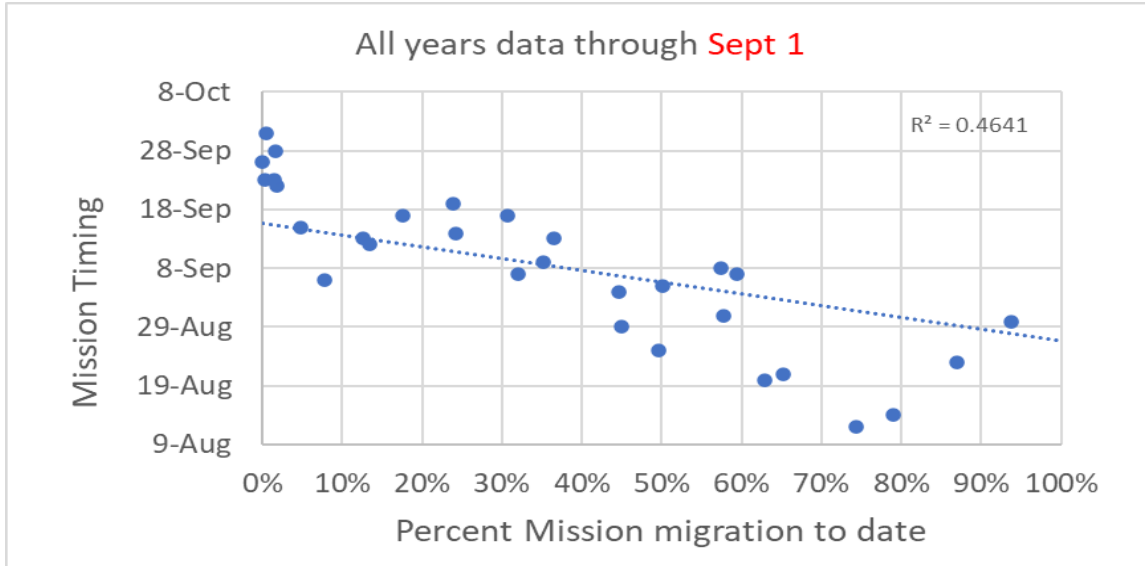
Big Bar data provided by Brynley Hanson-Wright, DFO

## 2022 Late run upstream migration model using All years

Based on Marine Late-run abundance estimate

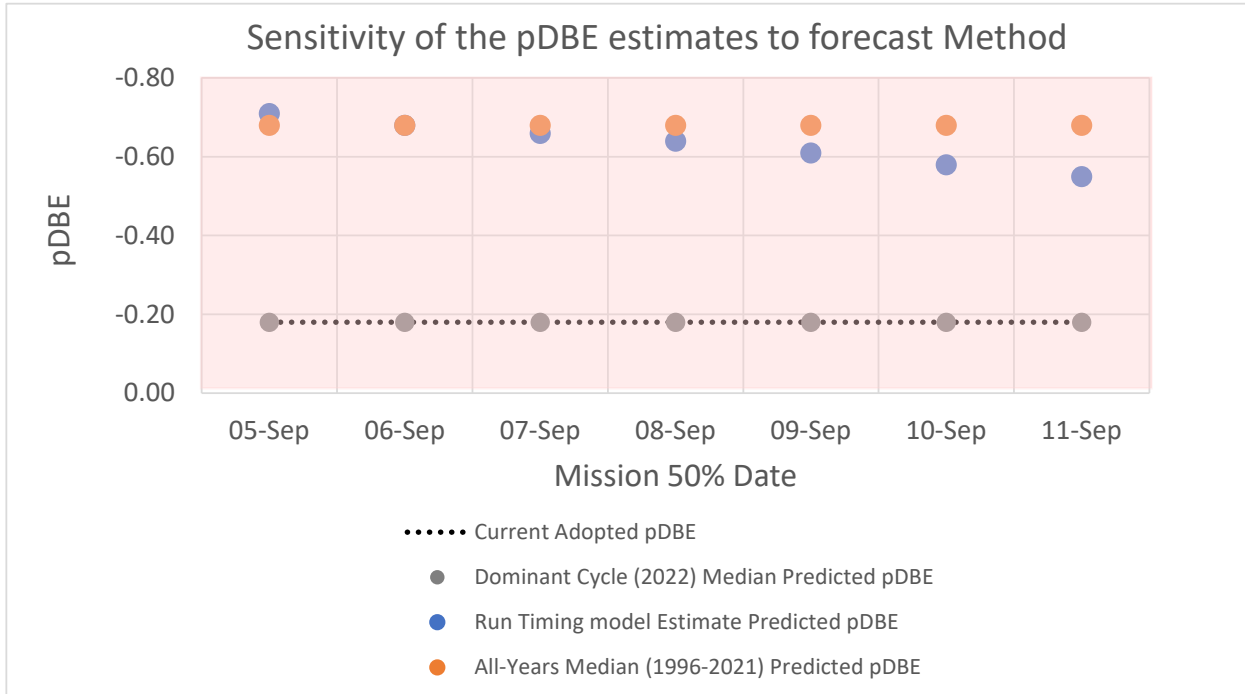
Upstream Mission timing using All year data:

08-Sep (25 Aug - 22 Sept 80% PI)



## Late run pDBE Forecast and Sensitivity Analysis for September 02, 2022

Based on the retrospective analysis evaluation of 2010-2021 for Late run the best performing in-season model is the Dominant year median.



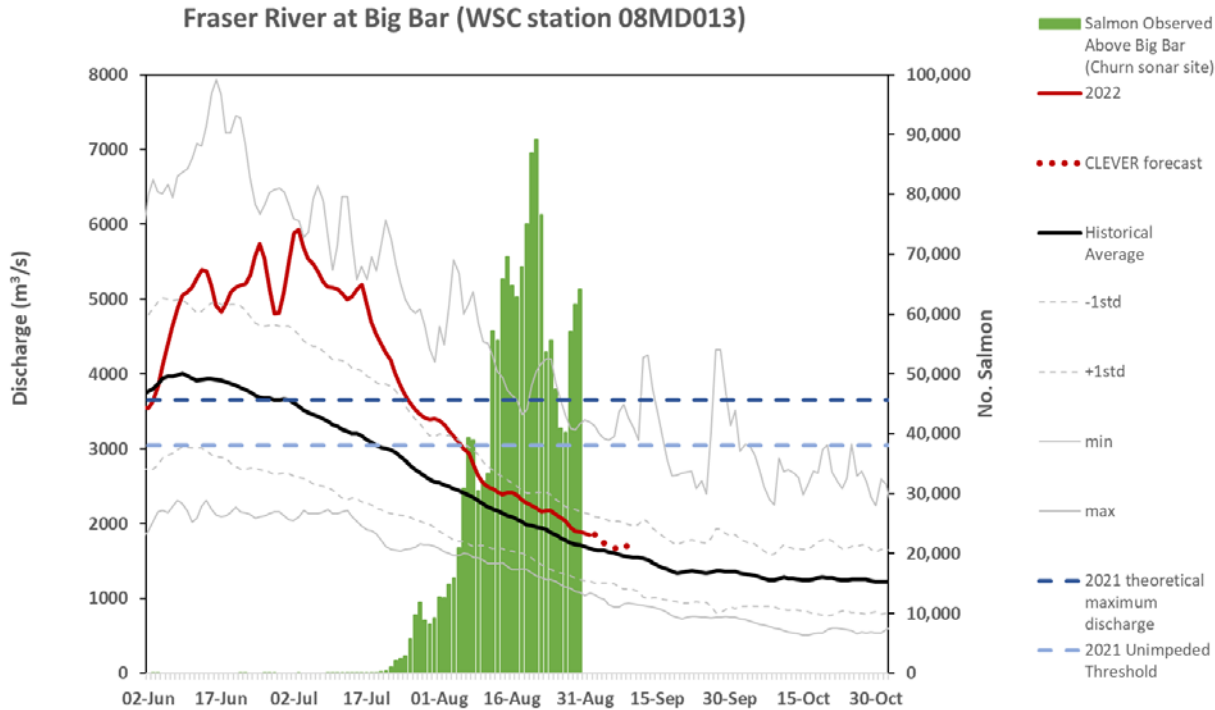
Model Performance Based on "In-season pDBE Approach" Retrospective				
		Best	2	3
Mission 50% Date	Current Adopted pDBE	Dominant Cycle (2022) Median Predicted pDBE	Run Timing model Estimate Predicted pDBE	All-Years Median (1996-2021) Predicted pDBE
05-Sep	-0.18	-0.18	-0.71	-0.68
06-Sep	-0.18	-0.18	-0.68	-0.68
07-Sep	-0.18	-0.18	-0.66	-0.68
* 08-Sep	-0.18	-0.18	-0.64	-0.68
09-Sep	-0.18	-0.18	-0.61	-0.68
10-Sep	-0.18	-0.18	-0.58	-0.68
11-Sep	-0.18	-0.18	-0.55	-0.68
Implied pMA				
* 08-Sep	0.22	0.22	1.78	2.13



\* Upstream Mission timing estimate using Marine abundance estimate

Current Temperatures						
Upriver of Slide	Map #	31-Aug	Daily Mean	Historic Mean	Deviation from Historical Mean	Historic Year Range
<b>Fraser River Mainstem</b>						
	1	Fraser River @ Qualark	19.4	17.1	2.3	1991-2020
	2	Fraser River @ Texas Creek	18.3	16.2	2.1	2006-2021
	3	Fraser River @ Big Bar Creek	18.4	NA	NA	2019-2021
▶	4	Fraser River @ Marguerite	18.4	15.8	2.6	2015-2021
▶	5	Upper Fraser @ Shelley	14.3	13.1	1.2	1994-2021
<b>Fraser River Tributaries</b>						
	6	Thompson R. @ Ashcroft	19.8	17.9	1.9	1995-2021
	7	South Thompson @ Chase	20.8	18.9	1.9	1994-2021
	8	North Thompson @ McLure	16.9	14.4	2.5	2006-2021
▶	9	Quesnel R. @ Quesnel	19.0	16.2	2.8	2000-2021
▶	10	Nechako R. @ Isle Pierre	18.9	16.0	2.9	2006-2021
▶	11	Stuart R. @ Ft. St. James	19.3	16.0	3.3	2000-2021



## Fraser River Discharge at Big Bar



Data made available by:  Environment and Climate Change Canada and  northwest hydraulic consultants

## Migration passage at Big Bar

<https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/fish/aquatic-habitat-management/fish-passage/big-bar-landslide-incident?keyword=big&keyword=bar>

<https://www.pac.dfo-mpo.gc.ca/pacific-smon-pacifique/big-bar-landslide-eboulement/smon-count-denombrement-eng.html>

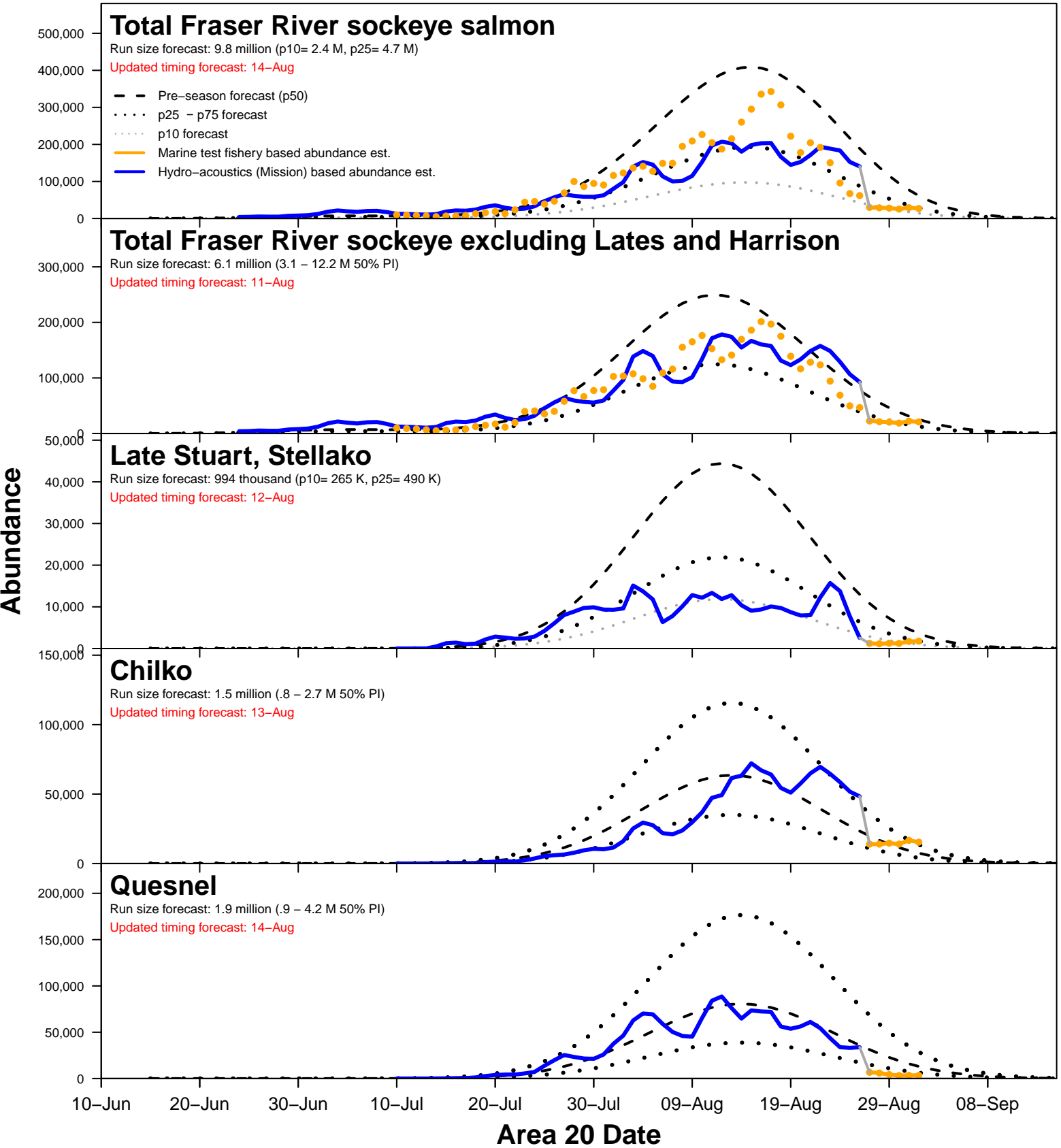
### Big Bar Update

- A total of 1,491,857 sockeye have been observed 40km upstream of Big Bar (Churn Creek).
- A total of 807 sockeye have been radio tagged.



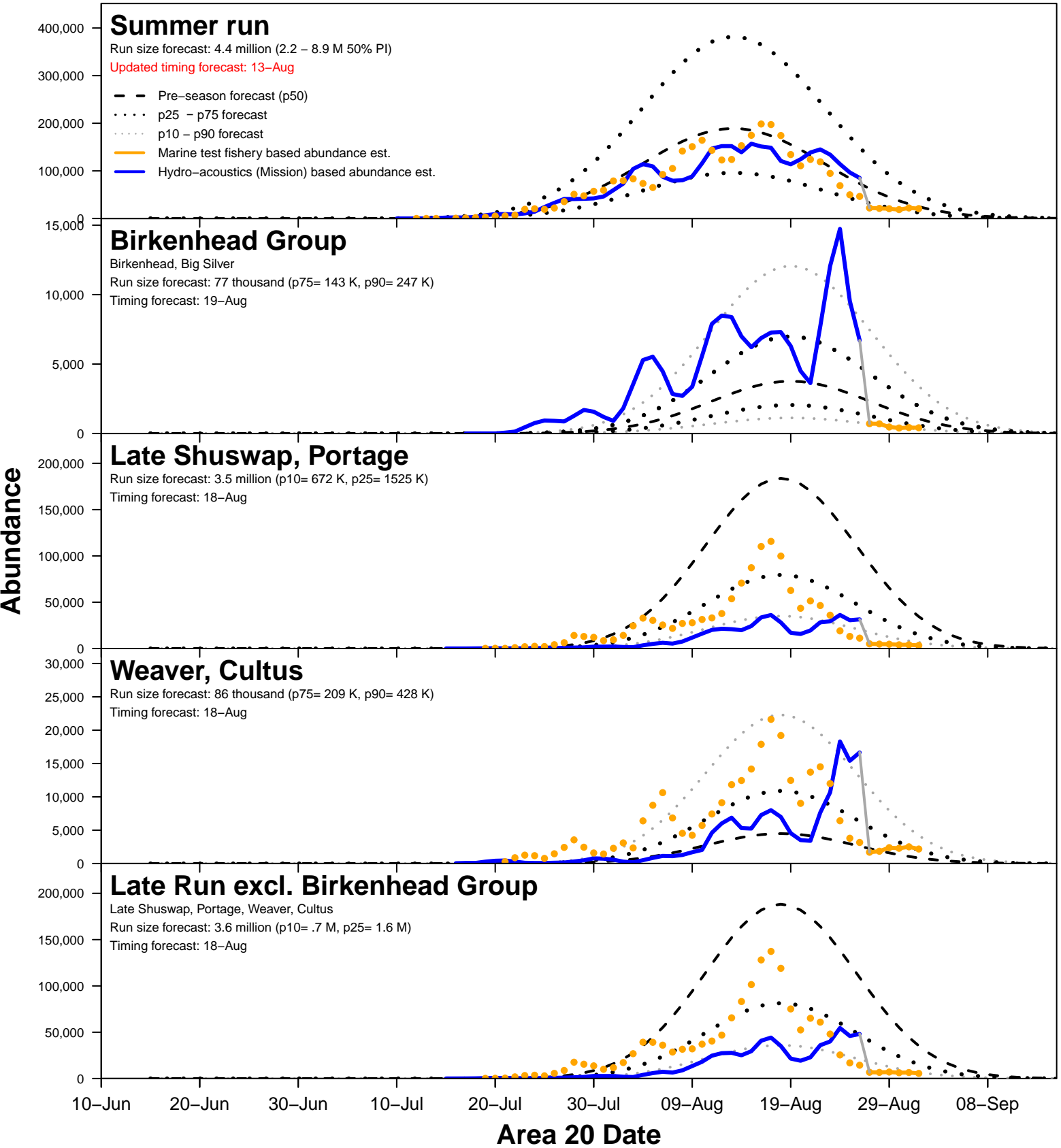
# 2022 Fraser River sockeye salmon daily migration

## Summer run timing updated (3 days later)



# 2022 Fraser River sockeye salmon daily migration

## Summer run timing updated (3 days later)



## 2022 Fraser River sockeye abundance en-route to Mission

Current date: 02-Sep

Area 20 date Mission date	Escapement past Mission through 01-Sep	Projected abundance en route to Mission based on marine test fishery data <sup>1,2</sup>								Escapement + projections through 07-Sep	
		27-Aug	28-Aug	29-Aug	30-Aug	31-Aug	01-Sep	Total	80% PI <sup>3</sup>		
		02-Sep	03-Sep	04-Sep	05-Sep	06-Sep	07-Sep		10p	90p	
<b>Total Fraser</b>	<b>4,204,100</b>	<b>35,600</b>	<b>21,900</b>	<b>28,100</b>	<b>33,400</b>	<b>14,100</b>	<b>39,200</b>	<b>172,300</b>	<b>104,900</b>	<b>248,800</b>	<b>4,376,400</b>
<b>Early Stuart</b>	<b>243,300</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>243,300</b>
<b>Early Summer Run</b>	<b>564,000</b>	<b>800</b>	<b>0</b>	<b>0</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>1,100</b>	<b>500</b>	<b>2,300</b>	<b>565,100</b>
<b>Summer Run</b>	<b>2,854,400</b>	<b>26,600</b>	<b>16,000</b>	<b>20,500</b>	<b>24,500</b>	<b>10,500</b>	<b>30,800</b>	<b>128,900</b>	<b>78,600</b>	<b>185,600</b>	<b>2,983,300</b>
Harrison / Widgeon <sup>2</sup>	16,200	0	0	0	0	0	0	0	0	0	16,200
Late Stuart / Stellako	301,900	1,200	1,300	900	1,500	1,200	2,300	8,400	5,100	12,100	310,300
Chilko	1,019,700	17,000	9,900	14,600	19,200	7,800	22,800	91,300	55,700	131,500	1,111,000
Quesnel	1,465,000	8,300	4,700	4,600	3,400	1,500	5,200	27,700	16,900	39,900	1,492,700
Raft / North Thompson	51,600	100	100	400	400	0	500	1,500	900	2,200	53,100
<b>Late Run</b>	<b>542,400</b>	<b>8,200</b>	<b>5,900</b>	<b>7,600</b>	<b>8,800</b>	<b>3,500</b>	<b>8,300</b>	<b>42,300</b>	<b>25,800</b>	<b>60,900</b>	<b>584,700</b>
Birkenhead / Big Silver	146,400	1,100	400	500	500	200	600	3,300	2,000	4,800	149,700
Late Shuswap / Portage <sup>2</sup>	297,600	5,600	3,600	5,000	5,200	1,700	5,000	26,100	15,900	37,600	323,700
Weaver / Cultus <sup>2</sup>	98,400	1,500	1,900	2,100	3,100	1,600	2,700	12,900	7,900	18,600	111,300

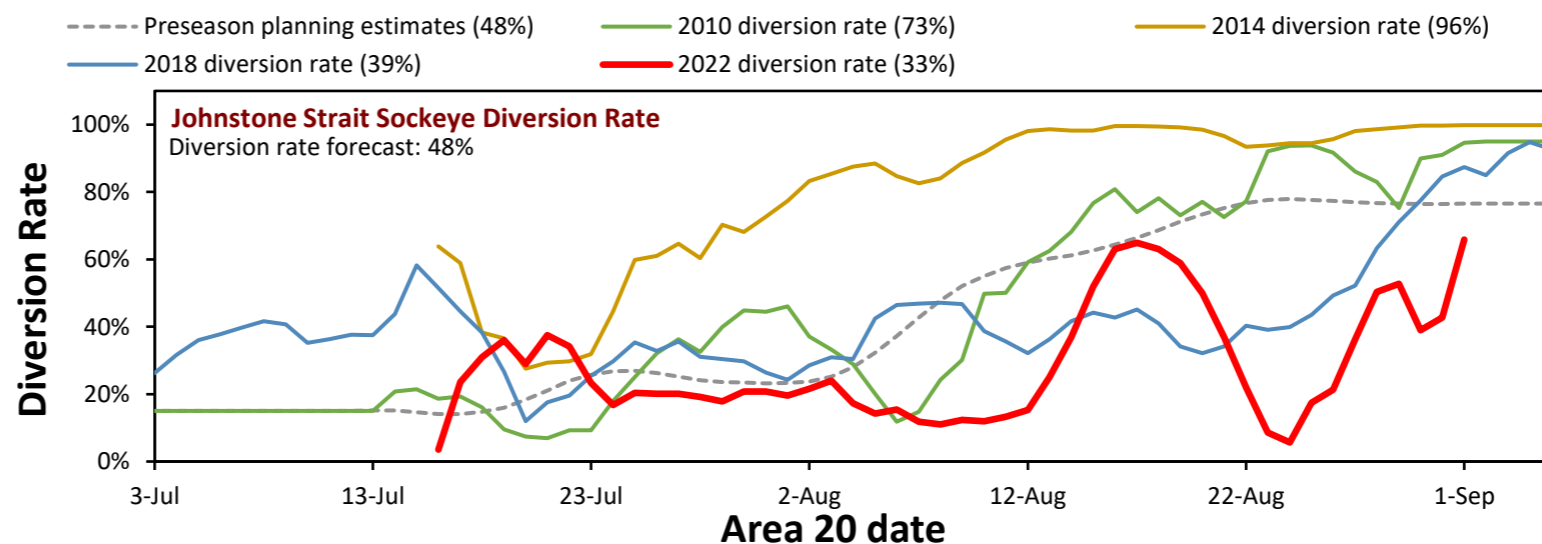
<sup>1</sup> En route catches are incomplete: catches from present and future fisheries must be deducted from projections and added to the catches removed

<sup>2</sup> Projected abundances en route to Mission include Harrison and Late runs, an uncertain number of which are expected to delay

<sup>3</sup> 80% Probability Interval: there exists an 80% chance that the true abundance lies within this interval

## 2022 Fraser River sockeye diversion rates through Johnstone Strait

	5-day average
<b>Diversion rate</b>	<b>66%</b>



# 2022 Fraser River run size and timing estimates

The information presented on this page has been prepared by PSC Secretariat Staff. All in-season estimates of run size and timing should be considered draft preliminary estimates unless adopted by the Fraser River Panel.

Preseason forecasts, inseason estimates, and official estimates of run size and associated timing

	Run Size					Run size components					Run Timing <sup>1</sup>					
	Inseason Adopted	Preseason Forecast	Inseason estimate	Inseason 80% Pls <sup>2</sup>		Method	Catch + Escapement	6-day Projection <sup>3</sup>	Seaward Abundance	Migration Delay	Inseason Adopted	Preseason Forecast	Inseason estimate	Inseason 80% Pls <sup>2</sup>		Method
				10% PI	90% PI									10% PI	90% PI	
<b>Total Fraser sockeye</b>	<b>5,944,000</b>	<b>9,775,000</b>	<b>6,275,000</b>				<b>5,013,000</b>	<b>303,000</b>	<b>112,000</b>	<b>847,000</b>		<b>13-Aug</b>				<b>p50 Forecast</b>
<b>Early Stuart Run</b>	<b>244,000</b>	<b>105,000</b>	<b>244,000</b>	<b>244,000</b>	<b>244,000</b>	<b>Recon</b>	<b>244,000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>06-Jul</b>	<b>04-Jul</b>	<b>06-Jul</b>	<b>06-Jul</b>	<b>06-Jul</b>	<b>Recon</b>
<b>Early Summer Run</b>	<b>600,000</b>	<b>1,579,000</b>	<b>606,000</b>	<b>606,000</b>	<b>606,000</b>	<b>Sum</b>	<b>605,000</b>	<b>1,000</b>	<b>0</b>	<b>0</b>	<b>30-Jul</b>	<b>06-Aug</b>	<b>30-Jul</b>	<b>30-Jul</b>	<b>30-Jul</b>	<b>Recon</b>
E.Summers excl. E.Thomp		303,000	331,000	<i>331,000</i>	<i>331,000</i>	Recon	331,000	0	0			28-Jul	23-Jul	<i>23-Jul</i>	<i>23-Jul</i>	Recon
Early Thompson <sup>4</sup>		1,276,000	275,000	<i>275,000</i>	<i>275,000</i>	Recon	274,000	1,000	0			08-Aug	04-Aug	<i>04-Aug</i>	<i>04-Aug</i>	Recon
<b>Summer Run</b>	<b>3,500,000</b>	<b>4,403,000</b>	<b>3,738,000</b>	<b>3,541,000</b>	<b>3,921,000</b>	<b>Sum</b>	<b>3,374,000</b>	<b>257,000</b>	<b>103,000</b>	<b>4,000</b>	<b>14-Aug</b>	<b>10-Aug</b>	<b>15-Aug</b>	<b>14-Aug</b>	<b>18-Aug</b>	<b>Recon</b>
Harrison / Widgeon		14,000	22,000	<i>18,000</i>	<i>24,000</i>	Recon	18,000	0	0	4,000		06-Aug	29-Jul	<i>27-Jul</i>	<i>06-Aug</i>	Marine N
Late Stuart / Stellako		994,000	360,000	<i>355,000</i>	<i>368,000</i>	Recon	350,000	9,000	1,000	0		09-Aug	10-Aug	<i>10-Aug</i>	<i>10-Aug</i>	Recon
Chilko		1,463,000	1,502,000	<i>1,380,000</i>	<i>1,600,000</i>	Recon(2)	1,259,000	168,000	75,000	0		10-Aug	18-Aug	<i>17-Aug</i>	<i>19-Aug</i>	Recon(2)
Quesnel		1,907,000	1,799,000	<i>1,733,000</i>	<i>1,873,000</i>	Recon(2)	1,693,000	79,000	27,000	0		11-Aug	12-Aug	<i>12-Aug</i>	<i>13-Aug</i>	Recon(2)
Raft / North Thompson		25,000	55,000	<i>55,000</i>	<i>56,000</i>	Recon	54,000	1,000	0	0		18-Aug	22-Aug	<i>22-Aug</i>	<i>22-Aug</i>	Recon
<b>Late Run</b>	<b>1,600,000</b>	<b>3,688,000</b>	<b>1,687,000</b>	<b>1,090,000</b>	<b>2,372,000</b>	<b>Sum</b>	<b>790,000</b>	<b>45,000</b>	<b>9,000</b>	<b>843,000</b>	<b>16-Aug</b>	<b>18-Aug</b>	<b>16-Aug</b>	<b>13-Aug</b>	<b>18-Aug</b>	<b>Weight</b>
<b>Alt. Late Run</b>			<i>2,015,000</i>	<i>1,744,000</i>	<i>2,367,000</i>	<i>Sum</i>			<i>9,000</i>	<i>1,174,000</i>						
Birkenhead Group		77,000	177,000	<i>171,000</i>	<i>187,000</i>	Recon(2)	169,000	6,000	2,000	0		19-Aug	16-Aug	<i>16-Aug</i>	<i>17-Aug</i>	Recon(2)
L.Shuswap / Weaver Gr.		3,611,000	1,510,000	<i>919,000</i>	<i>2,185,000</i>	Marine N*	621,000	39,000	7,000	843,000		18-Aug	16-Aug	<i>12-Aug</i>	<i>18-Aug</i>	Marine N
Alt.L.Shuswap / Weaver			1,841,000	<i>1,573,000</i>	<i>2,188,000</i>	Gulf Troll	621,000	39,000	7,000	1,174,000						

<sup>1</sup> Run timing refers to the date when 50% of the run migrated past the Area 20 reference point.

<sup>2</sup> 80% Probability Interval: there exists an 80% chance that the true abundance lies within this interval

<sup>3</sup> Normally based on test fishery data. Based on Model if Method = Recon(2).

<sup>4</sup> Early South Thompson / North Barriere.

**Methods for run size & timing estimation**

- Recon                      Catch + escapement + 6-day test fish projection + model seaward projection
- Recon(2)                Catch + escapement + model projections
- Sum                        Sum of individual groups
- Marine N                Reconstruction of CPUE-based marine abundances
- Marine N\*               Indirect CPUE-based estimate derived from Summer-run expansion lines