DRAFT AGENDA<br>PACIFIC SALMON COMMISSION<br>FRASER RIVER PANEL<br>Tuesday September 5, 2023 at 11:00 am. via Zoom Webinar<br>https://psc-org.zoom.us/j/88416242194

1) Roll Call (Panel and Tech members, others please email Angela, frontdesk@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
a) Test fishing catches and acoustics
b) Mission projected sockeye vs. Qualark sockeye comparison
c) Stock proportions
d) Environmental conditions
e) Observations from the watershed

DFO
6) Assessments and recommendations

PSC Staff
a) Migration graphs, escapement projections, run size assessments
7) Review any decisions on staff recommendations Panel
8) Fisheries Recommendations Panel
a) Secretariat staff evaluation of fisheries recommendations
b) Panel decision on fisheries recommendations
9) Other Business Panel
10) Next FRP Meeting, Friday September 8, 11:00 a.m. via Zoom Webinar Next Technical Committee meeting, Thursday September 7, 1:00 p.m. via Zoom

2023 Run status of Fraser sockeye and pink salmon
Date: Sep. 5, 2023
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: Sep. 3-Sep. 9, 2023 | Sockeye |  |  |  |  | Pink |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Management Group |  |  |  | Total <br> Fraser | Total <br> Fraser |
|  | E.Stuart | E.Summer | Summer | Late |  |  |
| Mission passage (inclds Pitt, Alouette, Coquitlam) | 40,900 | 322,100 | 875,600 | 233,300 | 1,471,900 | 3,752,800 |
| Catch downstream of Mission | 200 | 3,900 | 11,400 | 4,500 | 20,000 | 373,700 |
| Accounted Run To Date | 41,100 | 326,000 | 887,000 | 237,800 | 1,491,900 | 4,126,500 |
| Run size adopted in-season ${ }^{2}$ | 41,000 | 335,000 | 950,000 | 280,000 | 1,606,000 | 20,000,000 |
| Run size forecasted pre-season | 23,000 | 186,000 | 1,167,000 | 188,000 | 1,564,000 | 6,135,000 |
| Area 20 timing adopted in-season | 2/Jul | 26/Jul | 13/Aug | 17/Aug | 8/Aug | 20/Aug |
| Area 20 timing expected pre-season | 7/Jul | 6/Aug | 17/Aug | 24/Aug | 16/Aug | 25/Aug |
| Johnstone Str. Diversion Rate |  | Annual average to date |  |  | 67\% | 36\% |
|  |  | Preseason forecast of annual rate: |  |  | 67\% | 62\% |

For pink salmon the accounted run-to-date is a reconstruction-based estimate.
${ }^{2}$ 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.



Date: Sep. 5, 2023


* 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 |  |  |  |  | Fraser Pinks |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Early Stuart | Early Summer | Summer | Lates | Total | Total |  |
| RUN STATUS, ESCAPEMENT NEEDS \& AVAILABLE SURPLUS |  |  |  |  |  |  |  |
| Pre-season or Adopted In-season Run Size | 41,000 | 335,000 | 950,000 | 280,000 | 1,606,000 |  | 20,000,000 |
| Adult Spawning Escapement Target (SET) | 41,000 | 167,500 | 950,000 | 280,000 | 1,438,500 |  | 6,000,000 |
| \%SET from TAM rules | 100\% | 50\% | 100\% | 100\% |  |  | 30\% |
| Management Adjustment (MA)* | 69,700 | 180,900 | 218,500 | 280,000 | 749,100 |  | 0 |
| Proportional MA (pMA)* | 1.70 | 1.08 | 0.23 | 1.00 |  |  | 0.00 |
| Adjusted Spawning Escapement Target (SET) ** | 41,000 | 335,000 | 950,000 | 280,000 | 1,606,000 |  | 6,000,000 |
| Test Fishing (TF)****** | 250 | 4,090 | 11,860 | 2,630 | 18,830 |  | 25,270 |
| Surplus above Adjusted SET \& Test fishing | 0 | 0 | 0 | 0 | 0 |  | 13,974,730 |
| DEDUCTIONS \& TAC FOR INTERNATIONAL SHARING |  |  |  |  |  |  |  |
| Aboriginal Fishery Exemption (AFE) | 0 | 0 | 0 | 0 | 0 |  | 0 |
| Total Deductions (Adj. SET + TF + Available AFE) | 41,250 | 339,090 | 961,860 | 282,630 | 1,624,830 |  | 6,025,270 |
| Available TAC for International Sharing | 0 | 0 | 0 | 0 | 0 |  | 13,974,730 |
| UNITED STATES (Washington) TAC |  |  |  |  |  |  |  |
| Proportionally Distributed TAC *** 16.5\% | 0 | 0 | 0 | 0 | 0 | 25.7\% | 3,591,510 |
| U.S. Payback *** 0.0\% | 0 | 0 | 0 | 0 | 0 |  | 0 |
| Proportionally Distributed TAC + Payback | 0 | 0 | 0 | 0 | 0 |  | 3,591,510 |
| Treaty Tribes Share *** 67.7\% | 0 | 0 | 0 | 0 | 0 | 50.0\% | 1,795,755 |
| All Citizen Share 32.3\% | 0 | 0 | 0 | 0 | 0 | 50.0\% | 1,795,755 |
| CANADA TAC |  |  |  |  |  |  |  |
| Aboriginal Fishery Exemption (AFE) | 0 | 0 | 0 | 0 | 0 |  | 0 |
| Canadian TAC + AFE | 0 | 0 | 0 | 0 | 0 |  | 10,383,220 |
| CATCH-TO-DATE |  |  |  |  |  |  |  |
| Test | 250 | 3,940 | 9,670 | 2,560 | 16,410 |  | 11,700 |
| Treaty Tribes (Wash.) / Ceremonial (TRB) | 0 | 30 | 1,640 | 1,680 | 3,350 |  | 255,300 |
| All Citizen (Wash.) | 0 | 0 | 0 | 0 | 0 |  | 86,310 |
| Other (Wash.) ${ }^{* * * *}$ | 0 | 20 | 270 | 230 | 520 |  |  |
| Washington | 0 | 50 | 1,910 | 1,910 | 3,870 |  | 341,610 |
| First Nations Catch (including AFE) | 0 | 0 | 0 | 0 | 0 |  | 1,570 |
| Planned Charter \& Recreational Shares | 20 | 190 | 420 | 55 | 680 | 0 | 710 |
| Other**** | 170 | 2,190 | 6,450 | 40 | 8,850 | 0 | 0 |
| Total Commercial (including FN EO/Demo*****) | 0 | 0 | 0 | 0 | 0 | 0 | 19,310 |
| Canada | 190 | 2,380 | 6,870 | 95 | 9,530 |  | 21,590 |
| Total Catch in All Fisheries | 440 | 6,370 | 18,450 | 4,565 | 29,810 |  | 374,900 |
| Exploitation Rate (catch-to-date / run size) | 1.1\% | 1.9\% | 1.9\% | 1.6\% | 1.9\% |  | 1.9\% |
| Exploit. Rate with fishery-induced mortality included | 1.2\% | 2.0\% | 2.3\% | 1.9\% | 2.1\% |  |  |
| CATCH REMAINING (BALANCE) |  |  |  |  |  |  |  |
| Washington | 0 | -50 | -1,910 | -1,910 | -3,870 |  | 3,249,900 |
| Canada | -190 | -2,380 | -6,870 | -95 | -9,535 |  | 10,361,630 |
| Balance Remaining [ below share / -above share] | -190 | -2,430 | -8,780 | -2,005 | -13,405 |  | 13,611,530 |

* 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 42,579 on September 2, 2022.

2023 Fraser Sockeye Test Fishing \& Escapement Summary

|  | Johnstone Strait | Juan de Fuca Strait | Fraser River |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Area/Gear <br> Location <br> From A20 | A12 PS <br> Blinkhorn <br> (-1 day) | A20 PS <br> Port Renfrew (0 days) | A29-13 GN <br> Cottonwood (+5 days) | A29-16 GN <br> Whonnock (+6 days) | Whon CPUE <br> Estimate <br> (+6 days) | GN Catch (+8 days) | alark <br> Estimate ${ }^{1}$ | Method ${ }^{2}$ | Mission Estimate ${ }^{3}$ (+6 days) | droacoustics Method ${ }^{4}$ | Hells Gate <br> Estimates ${ }^{5}$ <br> ( +10 days) |
| 15-Aug | 4714 (5 sets) | 405 | 66 | 109 | 8.72 | 20 | 29,702 | RB + LB | 31,900 | A1+S1+M2+A2 | 14,260 |
| 16-Aug | 90 (5 sets) | 241 | 159 | 138 | 10.61 | 43 | 26,791 | $R B+L B$ | 37,500 | A1+S1+M2+A2 | 6,530 |
| 17-Aug | 36 (3 sets) | 120 (4 sets) | 93 | 178 | 14.24 | 20 | 22,449 | $R B+L B$ | 51,300 | $\mathrm{A} 1+\mathrm{S} 1+\mathrm{M} 2+\mathrm{A} 2$ | 2,950 |
| 18-Aug | 3 (1 set) | 99 | 158 | 144 | 11.38 | 59 | 29,315 | $R B+L B$ | 63,200 | $\mathrm{A} 1+\mathrm{S} 1+\mathrm{M} 2+\mathrm{A} 2$ | No Count |
| 19-Aug | 1,212 | 37 (5 sets) | 95 | 180 | 14.40 | 28 | 28,526 | $R B+L B$ | 56,000 | $\mathrm{A} 1+\mathrm{S} 1+\mathrm{M} 2+\mathrm{A} 2$ | No Count |
| 20-Aug | 432 (4 sets) | 83 | 121 | 160 | 12.80 | 35 | 56,228 | $R B+L B$ | 85,900 | A1+S1+M2+A2 | No Count |
| 21-Aug | 553 | 35 | 72 | 43 | 3.13 | 56 | 64,944 | $R B+L B$ | 88,200 | $\mathrm{A} 1+\mathrm{S} 1+\mathrm{M} 2+\mathrm{A} 2$ | No Count |
| 22-Aug | 313 | 26 | 61 | 46 | 3.68 | 42 | 49,102 | $R B+L B$ | 86,200 | $\mathrm{A} 1+\mathrm{S} 1+\mathrm{M} 2+\mathrm{A} 2$ | No Count |
| 23-Aug | 58 | 50 | 29 | 50 | 4.00 | 47 | 45,533 | $R B+L B$ | 57,900 | $\mathrm{A} 1+\mathrm{S} 1+\mathrm{M} 2+\mathrm{A} 2$ | 1,140 |
| 24-Aug | 552 | 15 | 33 | 51 | 3.98 | 10 (3 sets) | 41,640 | $R B+L B$ | 62,100 | CPUE-Wh-Avg | 320 |
| 25-Aug | 1,316 | 2 (3 sets) | 6 | 63 | 4.92 | 29 | 52,053 | $R B+L B$ | 56,700 | CPUE-Wh-Avg | No Count |
| 26-Aug | 532 | 0 | 7 | 36 | 2.88 | 58 | 72,570 | $R B+L B$ | 47,800 | CPUE-Wh-Avg | No Count |
| 27-Aug | 417 | 1 (3 sets) | 8 | 28 | 2.13 | 27 | 43,040 | $R B+L B$ | 30,300 | CPUE-Wh-Avg | 11,940 |
| 28-Aug | 178 | 0 | 5 | 16 | 1.28 | 20 | 32,662 | $R B+L B$ | 23,700 | CPUE-Wh-Avg | No Count |
| 29-Aug | 83 | 5 | 6 | 19 | 1.51 | 25 | 24,022 | $R B+L B$ | 19,900 | CPUE-Wh-Avg | 12,800 |
| 30-Aug | 229 | 0 (5 sets) | 27 | 17 | 1.33 | 10 | 9,274 | $R B+L B$ | 18,100 | CPUE-Wh-Avg | 7,370 |
| 31-Aug | 81 (4 sets) | 1 | 19 | 12 | 0.91 | 13 | 31,506 | $R B+L B$ | 14,700 | CPUE-Wh-Avg | 5,380 |
| 1-Sep | 126 | End | 20 | 8 | 0.64 | 4 | 16,993 | $R B+L B$ | 13,100 | CPUE-Wh-Avg | No Count |
| 2-Sep | 144 |  | 5 | 10 | 0.80 | 4 | 14,740 | $R B+L B$ | 18,300 | CPUE-Wh-Avg | 2,100 |
| 3-Sep | No Sets Completed |  | 3 | 20 | 1.60 | 2 | 8,703 | $R B+L B$ | 18,300 | CPUE-Wh-Avg | 1,820 |
| 4-Sep | 43 (5 sets) |  | 3 | 8 | 0.64 | 5 |  |  | 20,200 | CPUE-Wh-Avg | 1,880 |
| $\begin{aligned} & \text { 5-Sep } \\ & \text { 6-Sep } \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |  |

${ }^{1}$ Qualark escapement estimate - does not include Chilliwack, Pitt, Harrison, Birkenhead, Big Silver, Weaver, and Cultus
${ }^{2}$ Qualark source:
$R B+L B=$ Right-bank (RB) + Left-bank (LB)
${ }^{3}$ Mission escapement estimate - does not include Pitt
${ }^{4}$ Mission source:
A1+S1+M2+A2 = Left bank ARIS (A1) + Left bank split-beam (S1) + Mobile ARIS (M2) + Right bank ARIS (A2)
CPUE-Wh-Avg $=3$-day average Whonnock CPUE $x$ Expansion Line
${ }^{5}$ Daily Hells Gate abundance estimate; actual daily count has been expanded.



## 2023 Fraser Pink Test Fishing \& Escapement Summary

| Area/Gear Location From A20 | Johnstone Strait <br> A12 PS <br> Blinkhorn <br> (- 2 days) | Juan de Fuca <br> Strait <br> A20 PS <br> Port Renfrew <br> (0 days) <br> 1185 | Fraser River |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | A29-13 GN <br> Cottonwood | A29-16 GN <br> Whonnock | Whon CPUE <br> Estimate | Qualark |  |  | Mission Hydroacoustics |  | Hell's Gate Estimates ${ }^{5}$ |
|  |  |  |  |  |  | GN Catch | Estimate ${ }^{1}$ | Method ${ }^{2}$ | Estimate ${ }^{3}$ | Method ${ }^{4}$ |  |
| 15-Aug | 45400 (5 sets) | 11,635 | 1 | 1 | 0.08 | 0 | 0 | RB+LB | 2,520 | BB-CPUE-Avg | 0 |
| 16-Aug | 6486 (5 sets) | 3,962 | 0 | 4 | 0.30 | 1 | 623 | RB+LB | 4,540 | BB-CPUE-Avg | 10,700 |
| 17-Aug | 385 (3 sets) | 5645 (4 sets) | 1 | 3 | 0.24 | 0 | 0 | RB+LB | 8,710 | BB-CPUE-Avg | 12,360 |
| 18-Aug | 9 (1 set) | 3,490 | 3 | 3 | 0.23 | 2 | 994 | RB+LB | 16,820 | BB-CPUE-Avg | No Count |
| 19-Aug | 21,942 | 3178 (5 sets) | 6 | 14 | 1.12 | 1 | 951 | RB+LB | 21,870 | BB-CPUE-Avg | No Count |
| 20-Aug | 21017 (4 sets) | 8,613 | 13 | 28 | 2.24 | 1 | 1,607 | RB+LB | 19,720 | BB-CPUE-Avg | No Count |
| 21-Aug | 19,820 | 7,095 | 16 | 9 | 0.65 | 0 | 0 | RB+LB | 45,010 | $\mathrm{A} 1+\mathrm{S} 1+\mathrm{M} 2+\mathrm{A} 2$ | No Count |
| 22-Aug | 12,092 | 5,319 | 12 | 13 | 1.04 | 6 | 7,015 | RB+LB | 108,440 | $\mathrm{A} 1+\mathrm{S} 1+\mathrm{M} 2+\mathrm{A} 2$ | No Count |
| 23-Aug | 2,279 | 69,700 | 6 | 31 | 2.48 | 6 | 5,692 | RB+LB | 165,320 | A1+S1+M2+A2 | 39,580 |
| 24-Aug | 14,762 | 27,272 | 34 | 17 | 1.31 | 2 (3 sets) | 7,571 | RB+LB | 120,190 | A1+S1+M2+A2 | 4,290 |
| 25-Aug | 49,249 | 1049 (3 sets) | 26 | 23 | 1.81 | 7 | 12,565 | RB+LB | 56,460 | A1+S1+M2+A2 | No Count |
| 26-Aug | 54,400 | 930 | 14 | 46 | 3.68 | 41 | 51,300 | RB+LB | 62,410 | $\mathrm{A} 1+\mathrm{S} 1+\mathrm{M} 2+\mathrm{A} 2$ | No Count |
| 27-Aug | 60,103 | 238 (3 sets) | 50 | 40 | 3.05 | 45 | 71,734 | RB+LB | 70,460 | A1+S1+M2+A2 | 31,780 |
| 28-Aug | 23,862 | 16 | 48 | 60 | 4.81 | 22 | 44,094 | RB+LB | 154,870 | $\mathrm{A} 1+\mathrm{S} 1+\mathrm{M} 2+\mathrm{A} 2$ | No Count |
| 29-Aug | 9,405 | 8 | 145 | 80 | 6.35 | 43 | 41,317 | RB+LB | 239,120 | A1+S1+M2+A2 | 51,240 |
| 30-Aug | 8,602 | 7 (5 sets) | 97 | 92 | 7.32 | 66 | 61,206 | RB+LB | 302,670 | $\mathrm{A} 1+\mathrm{S} 1+\mathrm{M} 2+\mathrm{A} 2$ | 44,450 |
| 31-Aug | 3442 (4 sets) | 21 | 137 | 34 | 2.58 | 52 | 126,025 | RB+LB | 243,740 | $\mathrm{A} 1+\mathrm{S} 1+\mathrm{M} 2+\mathrm{A} 2$ | 35,060 |
| 1-Sep | 3,593 | End | 130 | 88 | 7.04 | 62 | 263,386 | RB+LB | 216,500 | $\mathrm{A} 1+\mathrm{S} 1+\mathrm{M} 2+\mathrm{A} 2$ | No Count |
| 2-Sep | 5,221 |  | 86 | 226 | 18.08 | 71 | 261,637 | RB+LB | 561,640 | $\mathrm{A} 1+\mathrm{S} 1+\mathrm{M} 2+\mathrm{A} 2$ | 307,070 |
| 3-Sep | No sets completed |  | 14 | 117 | 9.36 | 40 | 174,053 | RB+LB | 750,020 | A1+S1+M2+A2 | 293,070 |
| 4-Sep | 1865 (5 sets) |  | 42 | 165 | 13.20 | 54 |  |  | 566,090 | $\mathrm{A} 1+\mathrm{S} 1+\mathrm{M} 2+\mathrm{A} 2$ | 275,210 |
| 5-Sep |  |  |  |  |  |  |  |  |  |  |  |

${ }^{1}$ Qualark escapement estimate - does not include Chilliwack, Pitt, Harrison, Birkenhead, Big Silver, Weaver, and Cultus
${ }^{2}$ Qualark source:
RB+LB = Right Bank (RB) + Left Bank (LB)
${ }^{3}$ Mission escapement estimate - does not include Pitt
${ }^{4}$ Mission source:
A1+S1+M2+A2 = Left bank ARIS (A1) + Left bank split-beam (S1) + Mobile ARIS (M2) + Right bank ARIS (A2) BB-CPUE-Avg $=3$-day average Brownsville CPUE $x$ Expansion Line
${ }^{5}$ Daily Hells Gate abundance estimate; actual daily count has been expanded.



Date: 5/Sep/23

Time: $10: 37 \mathrm{AM}$

|  | - <br>  <br>  <br>  <br> All Days |  |  |  | Days |
| :---: | ---: | ---: | :---: | :---: | :---: |
| Mission projection | $1,149,862$ | $1,118,176$ |  |  |  |
| Qualark estimate | $1,075,275$ | $1,075,275$ |  |  |  |
|  | Difference | $\mathbf{4 2 , 9 0 1}$ |  |  |  |
|  | \%Difference | $\mathbf{4 \%}$ |  |  |  |

Compare Qualark Passage Estimate and Mission-based Projection

——Mission-based projection of Qualark passage
—Qualark Passage Estimate
_Proportion of stocks passing Misson bound for Qualark

Difference between Qualark Passage Estimate and Mission-based Projection


Difference: Mission Projection - Qualark Estimate

2023 Fraser River Sockeye Salmon Stock identification Review
Recent stock composition estimates for sockeye salmon


2023 Fraser River Pink Salmon Stock identification Review
Recent stock composition estimates for pink salmon

| Fishing |  |  | Type ${ }^{3}$ | Sample <br> Size ( n ) | DNA \% Estimates by Group |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Area/Gear ${ }^{1}$ | Sector ${ }^{2}$ | Date |  |  | Fraser River | Washington | Canada South Coast |
| Johnstone Strait - A 12 |  |  |  |  |  |  |  |
| A12 PS | TF | Aug25 | DNA | 90 | 52\% | 27\% | 21\% |
| A12 PS | TF | Sep1 | DNA | 96 | 52\% | 42\% | 6\% |
| A12 |  | Sep05 | Prediction | 1 | 68\% | 19\% | 13\% |
| Johnstone Strait - A 13 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| A13 |  | Sep05 | Prediction | 1 | 50\% | 17\% | 33\% |
| Washington |  |  |  |  |  |  |  |
| A7A PS | CM | Aug24-25 | DNA | 98 | 75\% | 8\% | 17\% |
| A7A PS | CM | Sep1-2 | DNA | 89 | 93\% | 3\% | 4\% |
| A7 |  | Sep05 | Prediction | 1 | 85\% | 9\% | 6\% |
| A7A |  | Sep05 | Prediction | 1 | 87\% | 7\% | 6\% |

Notes for sockeye and pink tables:
${ }^{1}$ BB GN=29_13 (Cottonwood,Brownsville), AT = Alaska Twist, AB GN= 29_16 (Whonnock), MA FW=Matsqui Fish Wheel, QU GN=Qualark
${ }^{2}$ TF=sample from test fishery catch, CM=sample from commercial catch, C\&S=ceremonial \& subsistence catch, FSC=food, social, \& ceremonial catch, rec= recreational catch
${ }^{3}$ 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
${ }^{4}$ 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

Results in grey text have been presented to the Panel previously

| Observed Fraser River Temperature at Qualark for 04-Sep | $18.3^{\circ} \mathrm{C}$ |
| :--- | :---: |
| Average (1991-2020) Historical Temperature on this day | $16.7^{\circ} \mathrm{C}$ |
| Deviation from Average | $1.6^{\circ} \mathrm{C}$ |
| Forecast Temperature for $\quad 10-S e p-23$ | $17.1^{\circ} \mathrm{C}$ |
| The forecast in Kamloops and Prince George is for variable air temperature for the <br> forecast period. |  |


| Observed Fraser River Discharge at Hope for 04-Sep | $1658 \mathrm{~m}^{3} \cdot \mathrm{~s}^{-1}$ |
| :--- | :---: |
| Average (1991-2020) Historical Discharge on this day | $2392 \mathrm{~m}^{3} \cdot \mathrm{~s}^{-1}$ |
| \% above or below Historical Discharge | $-31 \%$ |
| Forecast Discharge for $\quad$ 10-Sep-23 | $1460 \mathrm{~m}^{3} \cdot \mathrm{~s}^{-1}$ |

The forecast in Kamloops is for 4 mm of precipitation. The forecast in Prince George is for 9 mm of precipitation.


## Discharge Legend

- Mean Dis (1991-2020)
-- +/- sd
- Min Dis (1991-2020)
- Max Dis (1991-2020)
- Current Dis
- Forecast Dis
- E.Stuart Threshold $\left(\mathrm{m}^{3} \cdot \mathrm{~s}^{-1}\right)^{1}$
- E.Summer Threshold $\left(\mathrm{m}^{3} \cdot \mathrm{~s}^{-1}\right)^{\mathrm{i}}$

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.'pMA is the proportional increase to spawning escapement targets to help ensure targets are achieved."\%DBE is \%difference betweeen 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 - $T_{\text {pejus }}$. 'Discharge threshold of 8000 cms for Early Stuart from Macdonald (2000). Can. Tech. Rep. Fish. Aquat. Sci. 2315: 120p. iiDischarge threshold of 6500 cms for Early Summer run from Macdonald et al. (2010). Trans. Am. Fish. Soc. 139: 768-782. 19 days of $T$ \& 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.

| Upriver of Slide | Map \# | Current Temperatures 03-Sep | Daily Mean | Historic Mean | Deviation from Historical Mean | Historic Year Range |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Fraser River Mainstem |  |  |  |  |  |  |
|  |  | Fraser River @ Qualark | 18.7 | 16.8 | 1.9 | 1991-2020 |
|  | 2 | Fraser River @ Texas Creek | 17.6 | 15.9 | 1.7 | 2006-2022 |
|  | 3 | Fraser River @ Big Bar Creek | NA | NA | NA | 2019-2022 |
| - | 4 | Fraser River @ Marguerite | 16.2 | 15.7 | 0.5 | 2015-2022 |
| - | 5 | Upper Fraser @ Shelley | 15.2 | 12.6 | 2.6 | 1994-2022 |
| Fraser River Tributaries |  |  |  |  |  |  |
|  | 6 | Thompson R. @ Ashcroft | 19.1 | 18.0 | 1.1 | 1995-2022 |
|  | 7 | South Thompson @ Chase | 18.9 | 18.8 | 0.1 | 1994-2022 |
|  | 8 | North Thompson @ McLure | 16.0 | 14.0 | 2.0 | 2006-2022 |
| - | 9 | Quesnel R. @ Quesnel | 16.0 | 15.9 | 0.1 | 2000-2022 |
| $\checkmark$ | 10 | Nechako R. @ Isle Pierre | 16.6 | 16.3 | 0.3 | 2006-2022 |
| - | 11 | Stuart R. @ Ft. St. James | 16.5 | 15.9 | 0.6 | 2000-2022 |



## 2023 Fraser River sockeye salmon daily migration Timing updated based on Timing Correlations



## 2023 Fraser River sockeye salmon daily migration <br> Timing updated based on Timing Correlations



2023 Fraser River sockeye abundance en-route to Mission
Current date: 05-Sep

|  | Escapement past Mission through 04-Sep | Projected abundance en route to Mission based on marine test fishery data ${ }^{1,2}$ |  |  |  |  |  |  |  |  | Escapement + projections through 10-Sep |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Area 20 date |  | 30-Aug | 31-Aug | 01-Sep | 02-Sep | 03-Sep | 04-Sep | Total | 80\% Pl ${ }^{3}$ |  |  |
| Mission date |  | 05-Sep | 06-Sep | 07-Sep | 08-Sep | 09-Sep | 10-Sep |  | 10p | 90p |  |
| Total Fraser | 1,471,900 | 2,300 | 7,000 | 3,700 | 3,800 | 5,500 | 3,600 | 25,900 | 15,800 | 37,300 | 1,497,800 |
| Early Summer Run | 322,100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 322,100 |
| Summer Run | 875,600 | 1,300 | 4,000 | 2,200 | 2,400 | 3,700 | 2,000 | 15,600 | 9,500 | 22,500 | 891,200 |
| Harrison / Widgeon ${ }^{2}$ | 40,400 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40,400 |
| Late Stuart / Stellako | 146,100 | 400 | 700 | 500 | 600 | 1,000 | 400 | 3,600 | 2,200 | 5,200 | 149,700 |
| Chilko | 549,500 | 600 | 2,500 | 1,400 | 1,500 | 2,300 | 1,400 | 9,700 | 5,900 | 14,000 | 559,200 |
| Quesnel | 118,500 | 300 | 700 | 300 | 300 | 400 | 200 | 2,200 | 1,300 | 3,200 | 120,700 |
| Raft / North Thompson | 21,100 | 0 | 100 | 0 | 0 | 0 | 0 | 100 | 100 | 100 | 21,200 |
| Late Run | 233,300 | 1,000 | 3,000 | 1,500 | 1,400 | 1,800 | 1,600 | 10,300 | 6,300 | 14,800 | 243,600 |
| Birkenhead / Big Silver | 172,000 | 200 | 800 | 400 | 400 | 500 | 400 | 2,700 | 1,600 | 3,900 | 174,700 |
| Late Shuswap / Portage ${ }^{2}$ | 19,600 | 100 | 1,100 | 500 | 400 | 400 | 400 | 2,900 | 1,800 | 4,200 | 22,500 |
| Weaver / Cultus ${ }^{2}$ | 41,700 | 700 | 1,100 | 600 | 600 | 900 | 800 | 4,700 | 2,900 | 6,800 | 46,400 |

[^0]
## Pink In-season Update

September 5, 2023

## Current Trends

- Final update of marine abundances
- Offset between Area 20 and Mission 50\% date is approximately 3-weeks

Daily abundances by Area
Area 20 expansion line: 450
Area 12 expansion line: 150


Overall run size (for overlapping days only)
2-day assumed offset between Area 12 and Area 20


## Weight of Evidence Table

- No updates since Friday

Pink Salmon Run Size Weight of Evidence

| Default Run Size Method: Time Density Model |  |  | 2023-09-01 |
| :---: | :---: | :---: | :---: |
| <10M | 10-20M | >20M |  |
| $\square \square$ | $\square \square$ | $\square \square$ |  |

$\square$ Default run size estimate = Time Density Model
$\square$ Pre-season alternative run size estimate
$\square$ In-season alternative run size estimate

| Models | Description | Category | In-season model? |  |
| :--- | :--- | :--- | :--- | :--- |
| PreSeason Forecast | $\square$ | Recruits per spawner (mean) | $<=10 \mathrm{M}$ | no |
| Time Density Model | $\square$ | Bayesian fit to CPUE*EL data | (300 expansion line) | $10-20 \mathrm{M}$ |
| SST Regression | $\square$ | June SST at Pine Island vs. run size | yes |  |
| Average CPUE | $\square$ | Short-term average CPUE vs. run size (Aug 20 Area 20 date) | $>20 \mathrm{M}$ | no |
| Power(fry) forecast | $\square$ | Recruits per spawner | $10-20 \mathrm{M}$ | yes |
| Timing-based | $\square$ | Double the CPUE* 150 EL at assumed 50\% date (Aug 20) | $>20 \mathrm{M}$ | no |

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 ${ }^{1}$ |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Inseason | Preseason | Inseason estimate |  | $$ |  | Method | Catch + Escapement | 6-day Projection ${ }^{3}$ | Seaward Abundance | Migration Delay | Inseason Adopted | Preseason Forecast | Inseason estimate | Inseason 80\% $\mathrm{Pls}^{2}$ |  | Method |
|  | Adopted | Forecast |  |  | 10\% PI | 90\% PI |  |  |  |  |  |  |  |  |  |
| Total Fraser sockeye | 1,606,000 | 1,564,000 | $\bigcirc$ | 1,645,000 |  |  |  |  |  | 1,494,000 | 25,000 | 7,000 | 120,000 | 08-Aug | 16-Aug | 14-Aug |  |  | Recon |
| Early Stuart Run | 41,000 | 23,000 | $\checkmark$ | 41,000 | 41,000 | 41,000 | Recon | 41,000 | 0 | 0 | 0 | 02-Jul | 07-Jul | 02-Jul | 02-Jul | 02-Jul | Recon |
| Early Summer Run | 335,000 | 186,000 | $\checkmark$ | 325,000 | 326,000 | 326,000 | Sum | 326,000 | 0 | 0 | 0 | 26-Jul | 06-Aug | 27-Jul | 27-Jul | 27-Jul | Recon |
| Chilliwack |  | 2,000 | $\checkmark$ | 32,000 | 32,000 | 32,000 | Recon | 32,000 | 0 | 0 | 0 |  | 20-Jul | 05-Jul | 05-Jul | 05-Jul | Recon |
| Pitt/Nadina Group ${ }^{4}$ |  | 123,000 | $\checkmark$ | 247,000 | 247,000 | 247,000 | Recon | 247,000 | 0 | 0 | 0 |  | 05-Aug | 26-Jul | 26-Jul | 26-Jul | Recon |
| Early Thompson ${ }^{5}$ |  | 61,000 | $\checkmark$ | 47,000 | 47,000 | 47,000 | Recon | 47,000 | 0 | 0 | 0 |  | 09-Aug | 05-Aug | 05-Aug | 05-Aug | Recon |
| Summer Run | 950,000 | 1,167,000 | $\checkmark$ | 907,000 | 897,000 | 918,000 | Sum | 889,000 | 15,000 | 3,000 | 0 | 13-Aug | 17-Aug | 14-Aug | 14-Aug | 14-Aug | Recon |
| Harrison / Widgeon |  | 51,000 | $\checkmark$ | 41,000 | 41,000 | 41,000 | Recon | 41,000 | 0 | 0 | 0 |  | 12-Aug | 02-Aug | 30-Jul | 05-Aug | Model |
| Late Stuart / Stellako |  | 196,000 | $\checkmark$ | 153,000 | 151,000 | 156,000 | Recon | 149,000 | 3,000 | 1,000 | 0 |  | 13-Aug | 12-Aug | 12-Aug | 12-Aug | Recon |
| Chilko |  | 591,000 | $\checkmark$ | 567,000 | 562,000 | 573,000 | Recon | 556,000 | 10,000 | 1,000 | 0 |  | 17-Aug | 14-Aug | 14-Aug | 14-Aug | Recon |
| Quesnel |  | 319,000 | $\checkmark$ | 124,000 | 122,000 | 127,000 | Recon | 121,000 | 2,000 | 1,000 | 0 |  | 19-Aug | 14-Aug | 14-Aug | 14-Aug | Recon |
| Raft / North Thompson |  | 10,000 | $\checkmark$ | 21,000 | 21,000 | 21,000 | Recon | 21,000 | 0 | 0 | 0 |  | 23-Aug | 16-Aug | 16-Aug | 16-Aug | Recon |
| Late Run | 280,000 | 188,000 | $\triangle$ | 372,000 | 244,000 | 437,000 | Sum | 238,000 | 11,000 | 3,000 | 120,000 | 17-Aug | 24-Aug | 17-Aug | 15-Aug | 19-Aug | Weight |
| Birkenhead Group |  | 92,000 | $\checkmark$ | 179,000 | 176,000 | 184,000 | Recon | 174,000 | 3,000 | 2,000 | 0 |  | 24-Aug | 17-Aug | 16-Aug | 17-Aug | Recon |
| L.Shuswap / Weaver Gr. |  | 96,000 | $\diamond$ | 193,000 | 68,000 | 253,000 | Recon | 64,000 | 8,000 | 1,000 | 120,000 |  | 24-Aug | 17-Aug | 13-Aug | 20-Aug | Marine N |
| Fraser Pink salmon | 20,000,000 | 6,135,000 | $\diamond$ | 20,000,000 | 10,500,000 | 31,300,000 | Wt. of Evid. | 4,088,000 |  | 15,912,000 |  | 20-Aug | 25-Aug | 21-Aug | 19-Aug | 23-Aug | Model |

Run timing refers to the date when $50 \%$ of the run migrated past the Area 20 reference point.
${ }^{3}$ Normally based on test fishery data. Based on Model if Method = Recon(2).
Pitt / Alouette / Coquitlam / Nadina / Bowron / Gates / Nahatlatch / Taseko
${ }^{5}$ Early South Thompson / North Barriere.

Metho
Model
Model
Recon Run size assessment model (median)
Wt. of Evid. Weight of evidence table
Sum of individual groups
Weight Weighted average of individual groups
Marine $N \quad$ Reconstruction of CPUE-based marine abundances

## Run Size Uncertainty Legend ${ }^{\dagger}$

$\checkmark \geq 95 \%$ of the run size has been accounted for in catch + escapement. Clear indication of run size; minor run size updates still expected
$\geq 70 \%$ of the run size has been accounted for in catch + escapement. Good indication of run size; peak fo the run has been observed at Mission,
uncertainty relates to seaward abundance

- $\geq 50 \%$ of the run size has been accounted for in catch + escapement. Decent indciation of run size; $\geq 50 \%$ confirmed at Mission
$\diamond<50 \%$ of the run size has been accounted for in catch + escapement. Uncertain or early indciation of run size based on marine data
The Run Size Uncertainty Indicator is a categorical indication of the degree of uncertainty present in the run size estimate. Estimates are categorized quantitatively
based on the proportion of the run that has been accounted for with high certainty in catch + escapement.


## Predicted and Reported Fraser Sockeye and Pink Impacts

| Date | Predicted Fishery Impacts |  |  | Observed Fishery Impacts |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Predicted Fraser pink catch | Predicted landed Fraser sockeye catch | Predicted Fraser sockeye FIMs ${ }^{4}$ | Observed Fraser pink catch | Observed landed Fraser sockeye catch | Observed Fraser sockeye FIMs ${ }^{4}$ | Observed total Fraser sockeye mortality ${ }^{1}$ |
| TOTAL | 7,138 | 297 | 42 | 0 | 0 | 0 | 0 |
| 19-Aug | 269 | 103 |  |  |  |  |  |
| 20-Aug | 269 | 97 |  |  |  |  |  |
| 21-Aug | 269 | 97 |  |  |  |  |  |
| 22-Aug | 249 |  | 7 |  |  |  |  |
| 23-Aug | 242 |  | 6 |  |  |  |  |
| 24-Aug | 242 |  | 6 |  |  |  |  |
| 25 -Aug | 242 |  | 6 |  |  |  |  |
| 26-Aug | 1,324 |  | 5 |  |  |  |  |
| 27-Aug | 1,324 |  | 4 |  |  |  |  |
| 28 -Aug | 1,324 |  | 4 |  |  |  |  |
| 29-Aug | 1,324 |  | 1 |  |  |  |  |
| 30-Aug | 20 |  | 1 |  |  |  |  |
| 31-Aug | 20 |  | 1 |  |  |  |  |
| 01-Sep | 20 |  | 1 |  |  |  |  |


| Date | Predicted Fishery Impacts |  |  | Observed Fishery Impacts |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Predicted fraser pink catch | Predicted landed Fraser sockeye catch | Predicted Fraser <br> sockeye FIMs ${ }^{4}$ | Observed fraser pink catch | Observed landed Fraser sockeye catch | Observed Fraser sockeye $\mathrm{FIMs}^{4}$ | Observed total Fraser sockeye mortality ${ }^{1}$ |
| Total | 1,814,388 | 5,525 | 1,031 | 254,059 | 3,843 | 650 | 4,344 |
| ${ }^{19-A u g}$ |  |  |  |  |  |  |  |
| 20-Aug | 288,719 | 5,525 |  | 51,198 | 3,324 |  | 3,324 |
| 21-Aug |  |  |  |  |  |  |  |
| 22-Aug |  |  |  |  |  |  |  |
| 23-Aug | 47,670 |  | 236 | 35,351 | 360 | 71 | 431 |
| 24-Aug |  |  |  | 3,122 | 159 | 6 | 165 |
| 25-Aug | 42,956 |  | 198 | 63,195 |  | 273 | 166 |
| 26-Aug | 63,945 |  | 152 | 23,760 |  | 101 | 59 |
| 27-Aug | 82,950 |  | 136 | 20,696 |  | 86 | 86 |
| 28-Aug | 202,821 |  | 121 | 33,614 |  | 88 | 88 |
| 29-Aug | 345,373 |  | 106 | 6,338 |  | 7 | 7 |
| ${ }^{30-A u g}$ | 539,184 |  | 47 | 16,786 |  | 18 | 18 |
| 31-Aug | 182,423 |  | 19 |  |  |  |  |
| 01-Sep | 18,347 |  | 16 |  |  |  |  |


| Date | Predicted Fishery Impacts |  |  | Observed Fishery Impacts |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Predicted Fraser pink catch | Predicted landed Fraser sockeye catch | Predicted Fraser sockeye $\mathrm{FIMs}^{4}$ | Observed Fraser pink catch | Observed landed Fraser sockeye catch | Observed Fraser sockeye FIMs ${ }^{4}$ | Observed total Fraser sockeye mortality ${ }^{1}$ |
| TOTAL | 1,588,032 | 0 | 1,072 | 85,455 | 0 | 21 | 21 |
| ${ }^{23-A u g}$ | 48,076 |  | 192 | 1,880 |  | 0 | 0 |
| 24-Aug | 55,646 |  | 177 | 7,525 |  | 20 | 20 |
| 25-Aug | 43,24 |  | 162 | 1,891 |  | 0 | - |
| 26-Aug | 66,577 |  | 136 | 23,457 |  | 1 | , |
| 27-Aug | 84,275 |  | 121 | 165 |  | 0 | 0 |
| 28 -Aug | 197,293 |  | 107 | 8,521 |  | 0 | - |
| 29-Aug | 375,910 |  | 94 | 3,689 |  | 0 | 0 |
| 30-Aug | 518,380 |  | 48 | 67 |  | 0 |  |
| 31-Aug | 170,094 |  | 19 | 280 |  | 0 | 0 |
| 01-Sep | 17,653 |  | 16 | 4,735 |  | 0 | 0 |
| 02-Sep | 7,846 |  | 7 | 17,506 |  | 0 | 0 |
| ${ }^{03}-\mathrm{Sep}$ | 3,038 |  | 4 | 15,740 |  | 0 | - |

${ }^{1}$ Total sockeye mortality includes both landed catch and fishing induced mortality
${ }^{2}$ Catches are reported by landing date and may not align with day of fishery opening
Observations can vary from predictions due to changes in proposed vs. observed effort, variation in catchability, and uncertainty rearding estimates of vulnerable abundance thing induced mortaity rates vary by gear tvpe. Gillnet $=60 \%$ Puse seine $=25 \%$ Reefnet $=0.5 \%$


[^0]:    ${ }^{1}$ En route catches are incomplete: catches from present and future fisheries must be deducted from projections and added to the
    ${ }^{2}$ Projected abundances en route to Mission include Harrison and Late runs, an uncertain number of which are expected to delay
    ${ }^{3} 80 \%$ Probabability Interval: there exists an $80 \%$ chance that the true abundance lies within this interval

