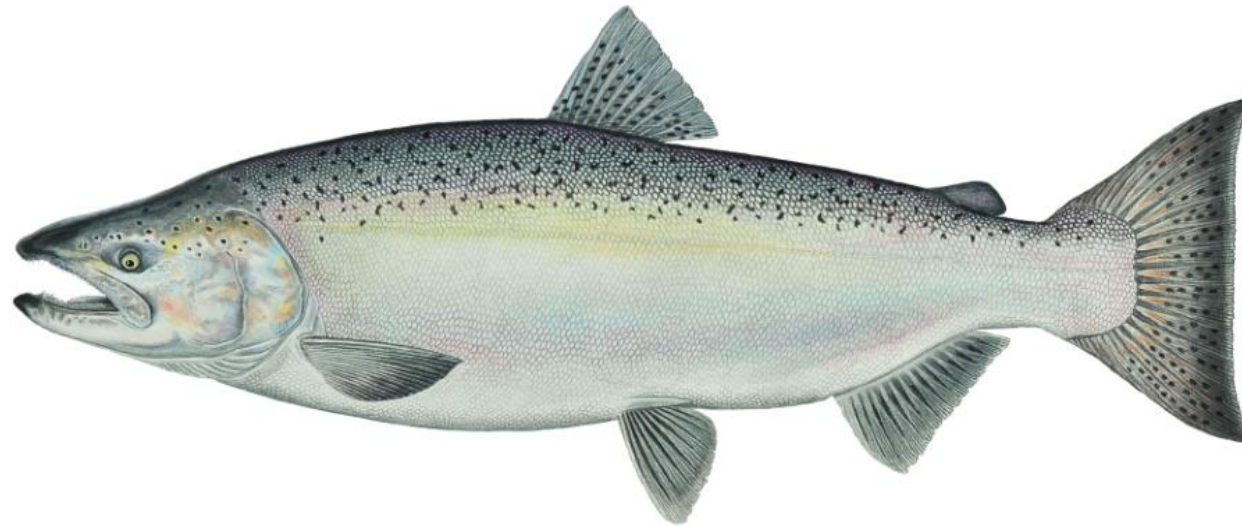




Southern BC Chinook: 2020 Season and 2021 Planning



February 2021



Outline

- 2020 Fraser Chinook Management and Preliminary Outcomes
- 2021 Planning
- Next Steps



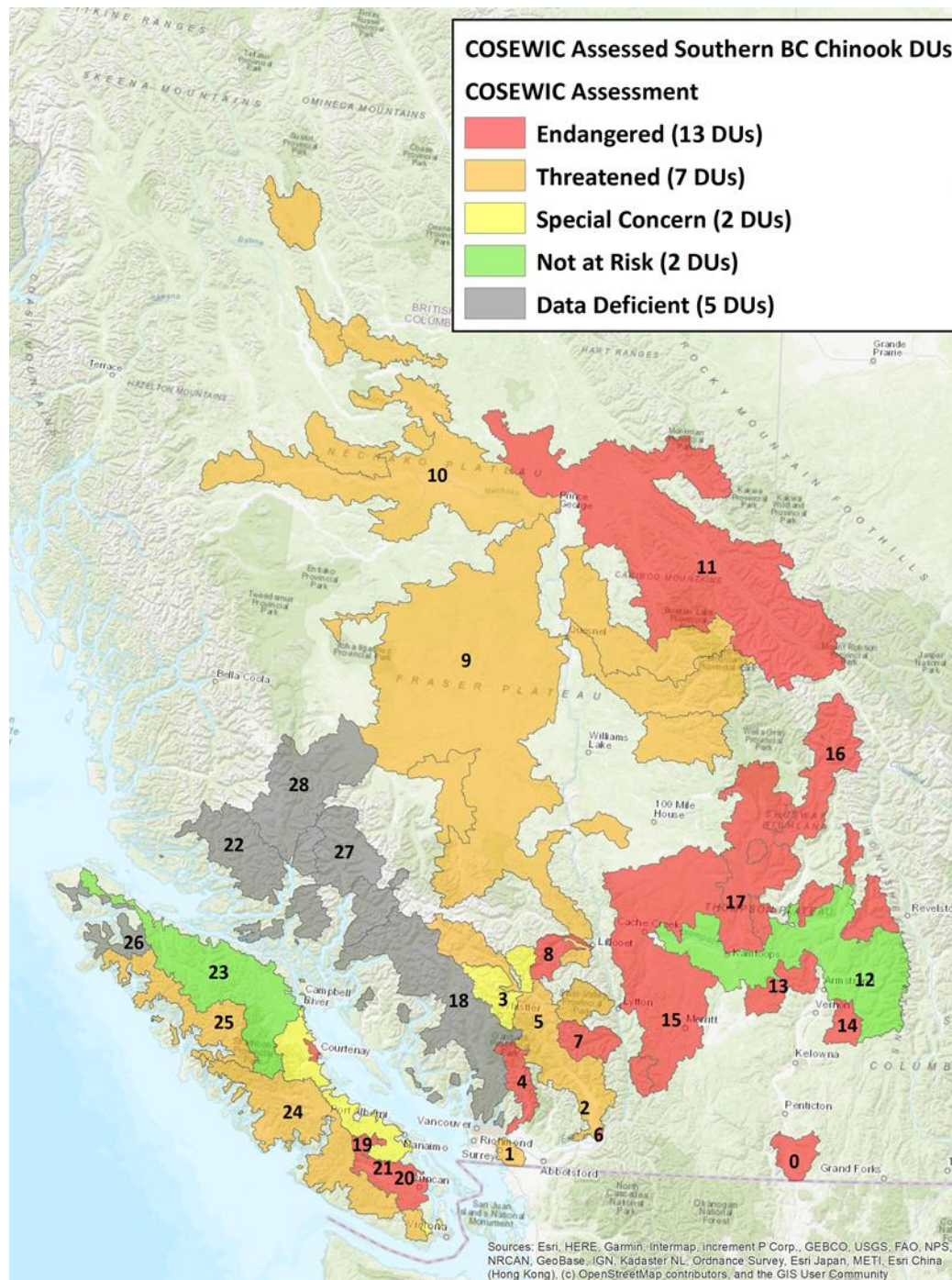
Chinook Status Assessment

- In November 2018, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) released the results for an assessment of 16 southern BC chinook designatable units (DUs).
- 3 DUs outside the Fraser river, 1 DU (East Vancouver Island Stream Spring; Nanaimo River) was assessed as endangered and 2 Southern Mainland DUs were data deficient
- COSEWIC assessments of the remaining southern BC Chinook populations completed November 2020; (Fraser updates shown in blue at right). Details: [Cosewic / Cosepac - Detailed version November 2020](#)

Mgmt Unit	# DUs	Designatable Unit Status
Spring 4 ₂	2	1 <i>endangered</i> , (1 <i>endangered</i>)
Spring 5 ₂	6	4 <i>endangered</i> ; 1 <i>threatened</i> ; 1 <i>special concern</i>
Summer 5 ₂	5	2 <i>endangered</i> ; 2 <i>threatened</i> ; (1 <i>endangered</i>)
Summer 4 ₁	2	1 <i>not at risk</i> ; (1 <i>endangered</i>)
Fall 4 ₁	1	1 <i>threatened</i>
Total	16	7 <i>endangered</i>; 4 <i>threatened</i>; 1 <i>special concern</i>; 1 <i>not at risk</i>; (3 <i>endangered</i>)



COSEWIC Status of Southern BC Chinook DUs



DU #	Name	Status
0	Okanagan Chinook	EN
1	Mainland Boundary Bay, Ocean, Fall	TH
2	Lower Fraser, Ocean, Fall	TH
3	Lower Fraser, Stream, Spring	SC
4	Lower Fraser, Stream, Summer (U.Pitt)	EN
5	Lower Fraser, Stream, Summer	TH
6	Lower Fraser, Ocean, Summer	EN
7	Mid Fraser, Stream, Spring	EN
8	Mid Fraser, Stream, Fall	EN
9	Mid Fraser, Stream, Spring (MFR+GStr)	TH
10	Mid Fraser, Stream, Summer	TH
11	Upper Fraser, Stream, Spring	EN
12	South Thompson, Ocean, Summer	NAR
13	South Thompson, Stream, Summer 1.3	EN
14	South Thompson, Stream, Summer 1.2	EN
15	Lower Thompson, Stream, Spring	EN
16	North Thompson, Stream, Spring	EN
17	North Thompson, Stream, Summer	EN
18	SC - Georgia Strait, Ocean, Fall	DD
19	East Vancouver Island, Stream, Spring	EN
20	East Vancouver Island, Ocean, Summer	EN
21	East Vancouver Island, Ocean, Fall	SC
22	SC – Southern Fjords, Ocean, Fall	DD
23	East Van. I., Ocean, Fall (EVI + SFj)	NAR
24	West Van. I., Ocean, Fall (South)	TH
25	West Van. I., Ocean, Fall (Nootka & Kyuc)	TH
26	West Van. I., Ocean, Fall (WVI + WQCI)	DD
27	Southern Mainland, Ocean, Summer	DD
28	Southern Mainland, Stream, Summer	DD



Fraser Chinook Management Objectives

Fraser Spring 4₂, Spring 5₂ and Summer 5₂

- Management objective for Spring 4₂, Spring 5₂ and Summer 5₂ Chinook to manage Canadian fisheries in highly precautionary manner to allow as many fish to pass through to spawning grounds as possible. Approach is expected to reduce overall Canadian fishery mortalities on these populations to very low levels approaching 5%.

Summer 4₁ chinook

- PST escapement goal for Lower Shuswap Chinook
- Conservation concern for Maria Slough Chinook (Lower Fraser).
- Run timing overlaps with Summer 5₂ and Fall 4₁ Chinook will require consideration of lower fishery mortalities

Fall 4₁ chinook

- Spawner abundance has not achieved the PST escapement goal in 8 of last 9 years (2012-2020). Harrison Chinook continues to experience low productivity.
- 2020 management measures also intended to further reduce exploitation rates



2020 Chinook Management

- Provision of priority access for First Nations FSC harvests in south coast and Fraser River.
 - South Coast FSC fisheries opportunities on mixed stocks were permitted in marine areas with the exception of the approaches to Fraser River (Subareas 29-6, 29-7, 29-9 and 29-10).
 - Very limited Fraser River FSC fisheries opportunities were permitted from April to July to limit impacts on at-risk Fraser Chinook, with opportunities to target healthy Summer 4₁ Chinook in August.
- Commercial troll fisheries delayed into August to avoid Fraser Chinook encounters.
 - Area F (Northern BC) – Chinook non-retention until August 15; (additional objective to pass additional Summer 4₁ Chinook to Fraser River)
 - Area G (WCVI) – Delayed start until August 1
- Recreational measures are summarized on following slides
 - In addition, small number of pilot opportunities provided in terminal areas away from main Fraser Chinook migratory corridors/rearing areas with additional FN consultation and catch monitoring/sampling to address potential concerns;
 - Additional details to be provided by Fishery Notice and maps on DFO website: <https://www.pac.dfo-mpo.gc.ca/fm-gp/salmon-saumon/fraser-chin-mgmt-gest-quin-eng.html>. (Maps also attached in background slides)



What were 2020 fishery mortalities?

- Preliminary catch data available. Note: catch in marine fisheries is a mix of Canadian and US Chinook populations. Fraser catch is a mix of Fraser stocks in most areas.
- Assessment of fishery mortalities for specific Chinook management units/indicator stocks will require information from run reconstruction, CWT and DNA data.
 - Exploitation Rate Analysis (fishery mortality) tables for CWT indicators from Chinook Technical Committee (PST) in late March – April: Spring 4₂ (Nicola), Summer 4₁ (Lower Shuswap), Fall 4₁ (Harrison)
 - Run reconstruction and fishery mortality indices for Fraser Chinook (includes Spring 5₂ and Summer 5₂) requires spawner abundance, catch, Fraser run reconstruction and genetic stock id (DNA for marine fisheries). (Prelim. results in April)
 - Analysis to assess impacts of 2020 fisheries will need to incorporate evaluation of impacts from Big Bar rockslide for Spring 5₂ and Summer 5₂ (e.g. how many salmon successfully passed rockslide?)



Northern BC AABM Catch Summary

	Pre-Season	In-Season
NC BC Troll AABM and Haida Gwaii Sport Abundance Index	1.08	-
NC BC Troll AABM and Haida Gwaii Sport Chinook TAC	133,000	-
NC BC Troll AABM Chinook TAC	92,600	30,096
Haida Gwaii Sport Chinook TAC	40,400	6,807 (preliminary)
Total NBC AABM	133,000	36,903

Notes:

1. The ongoing global COVID-19 pandemic, border closures and travel restrictions significantly reduced AABM tidal sport effort, as most lodges were not in operation for much of 2020. Catch estimates are subsequently significantly lower than anticipated pre-season, but will be updated should more data become available.

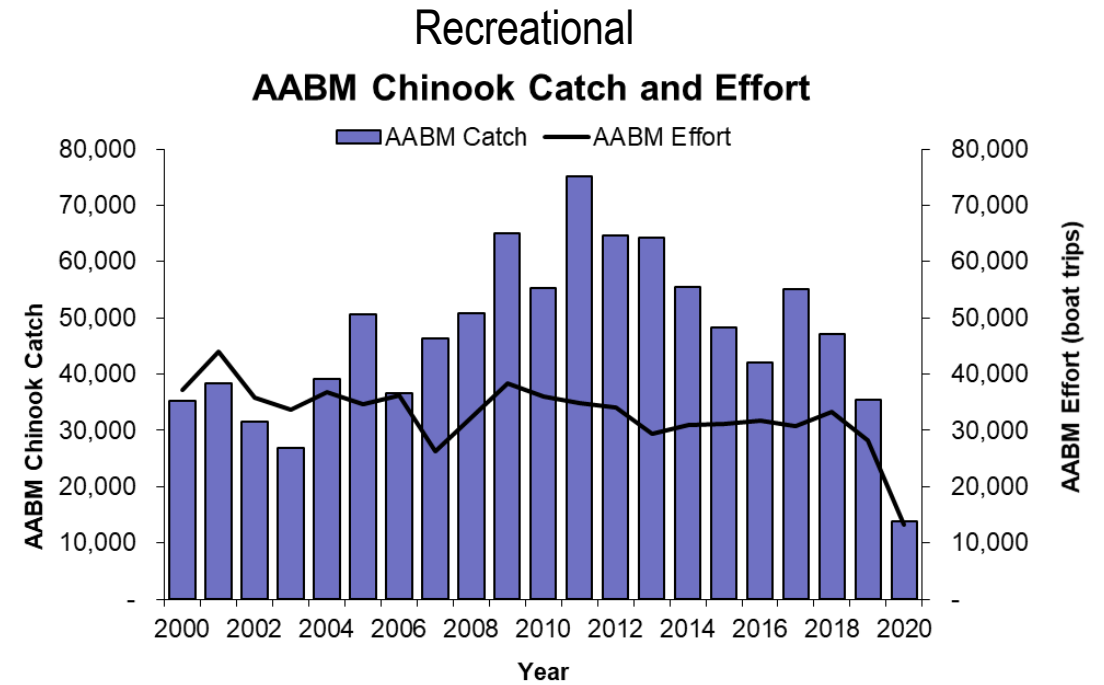
2. Northern BC commercial troll fishery Chinook retention was delayed to August 15th as part of Fraser Chinook management measures.



WCVI AABM Catch Summary

	Pre-Season	In-Season
WCVI AABM Abundance Index	0.75	0.75
WCVI AABM Chinook TAC	87,000	
AABM Recreational Harvest Projection	40,000	13,741*
First Nations Harvest Projection (FSC)	5,000	1,758
Maa-nulth First Nations Domestic Allocation (FSC)	3,424	1,951
Five Nations Allocation	7,724	4,170
Area G Troll Allocation	30,852	11,350
Total AABM	87,000	32,970

*Note that this is a preliminary catch estimate and does not include catch from June 2020.

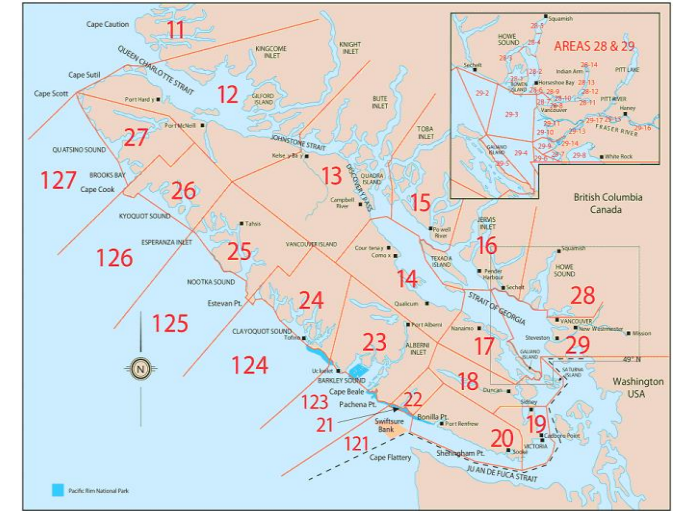


Reduction in fishing effort in 2020 likely due to COVID-19; similar management measures to 2019.



Summary of ISBM Catch – Southern BC

Licence Group	2020		2019	
	Retained	Released	Retained	Released
First Nations FSC & Treaty	45,924	1,329	36,171	401
First Nations Commercial	29,829	-	26,424	-
Five Nations - WCVI	6,174	-	3,058	-
Commercial	42,863	982	45,475	276
Recreational	87,450	154,216	133,223	202,296
Total	212,240	156,527	244,351	202,973



Notes (for 2020 Retained)

1. First Nations FSC: 8,607 (WCVI); 2,962 (Strait of Georgia); 787 (Johnstone Strait); 33,568 (Fraser watershed)
2. First Nations Commercial: 29,829 (Area 23); Five Nations – WCVI: 6,174 (Area 25)
3. Commercial: 42,863 (Area 23 and 25)
4. Recreational: 4,290 (Johnstone Strait-Areas 11/12); 32,943 (Strait of Georgia-Areas 13-19); 6,964 (Juan de Fuca - portion Areas 19 and 20); 37,410 (WCVI ISBM-Areas 21-27); 5,843 Fraser watershed
5. Further details on ISBM fisheries and stock status provided in the CDN post-season report.



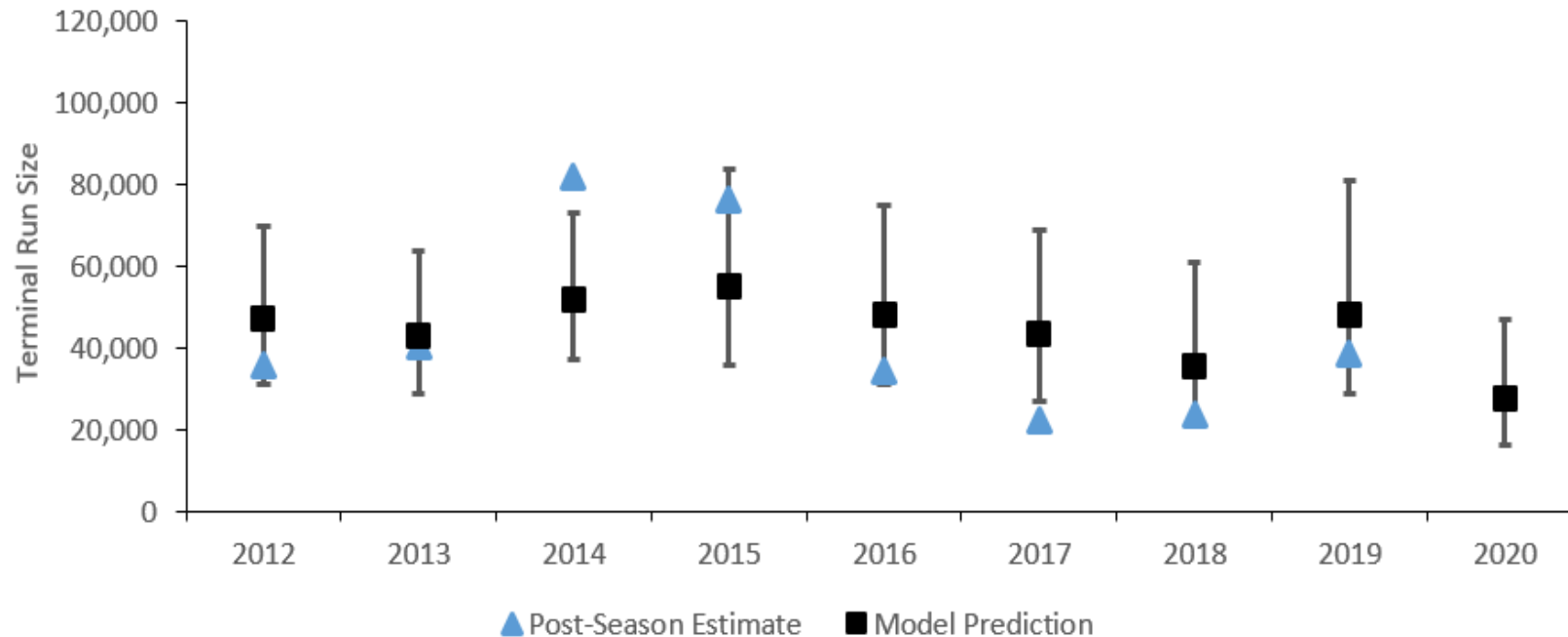


In-season return of Spring 5₂ and Summer 5₂ Chinook to Fraser

Run Size Model Outputs for 2020

Prediction using standard gill net Albion data:

median = **27,680** (range 16,000 - 47,000)



See FN0620 for more details.

The post-season estimate for 2020 will be available in spring of 2021.



Big Bar Landslide

- During the 2020 Fraser salmon migration, two types of monitoring methods were used above and below the Big Bar landslide site to track fish passage – hydroacoustic sonars and radio tagging.
 - Greater than 80% of Spring 5₂ and Summer 5₂ typically spawn upstream of Big Bar in the Upper Fraser.
 - Assessment and mitigation plans were implemented
 - 2020 Fish Counts can be found at: <https://www.pac.dfo-mpo.gc.ca/pacific-smon-pacifique/big-bar-landslide-eboulement/smon-count-denombrement-eng.html>
 - In 2020, increased threshold flow for Chinook passage at flows below 3800 m³/s compared with approx. 2400 m³/s in 2019 due to rock removal and channel modifications.



2020 Fraser Chinook Escapement Summary

Management Unit	Escapement Estimate*	Brood Year Escapement**	Comparisons
Spring 4 ₂	~8,000	9,000	Well below S_{MSY}
Spring 5 ₂	~16,000	23,000	Below S_{MSY}
Summer 5 ₂	~13,000	29,000	Below S_{MSY}
Summer 4 ₁	~148,000	93,000	Near S_{MSY}
Fall 4 ₁ (Harrison)	~45,000	41,000	Below escapement goal

- *Estimates are **preliminary** and subject to change
- ** Estimates are subject to change due to infilling and calibration methods

Productivity for all management units remains low



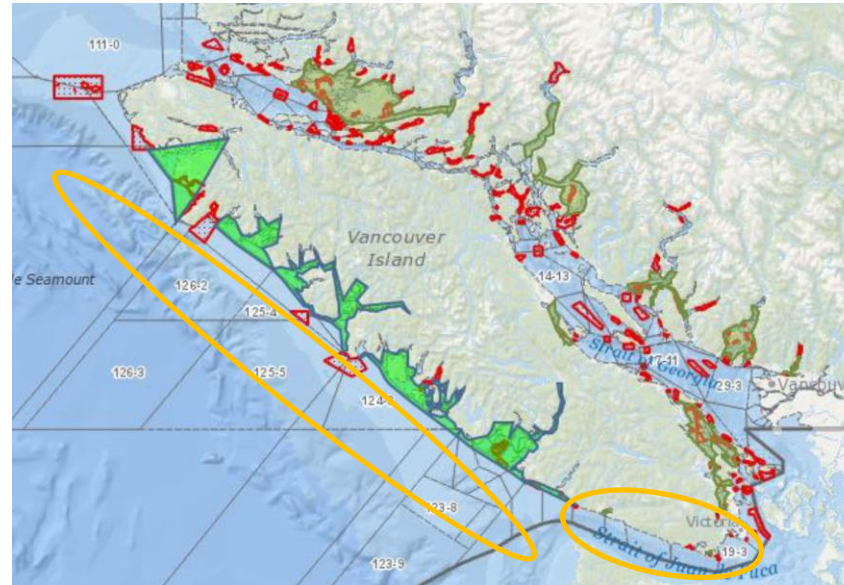
2021 Chinook Management Measures

- **2020 measures will be starting point when considering adjustments or alternative approaches during IFMP development process.**
- Management measures are anticipated in similar times / areas covering the migratory paths of Fraser River Chinook and likely required for many years given the status of Fraser Chinook
- Current 2020/21 Southern BC Salmon IFMP indicates:
 - DFO planning to consult on potential expanded use of mark selective fishery (MSF) regulations (i.e. retention of hatchery Chinook with healed scar in place an adipose fin) in the fall of 2020. MSF opportunities may be considered in additional areas in 2021 subject to the results of the review.
 - Internal work is underway to develop a framework describing technical feasibility (benefits, risks, implementation challenges, key gaps, mitigation) to support discussion on mass marking and mark selective fisheries; further consultations on this work have not yet been scheduled.
 - Mass Marking (fin clipping) - pilot project occurring with Burman, Sarita and Conuma stocks
 - Some pilot opportunities for expanded use of MSF regulations could be considered in short term subject to considerations outlined in evaluation framework; see next slides for considerations and timelines
- 2021/22 IFMP planning process for consideration of NEW proposals for June 1, 2021 – May 31, 2022.
 - Summary of priorities feedback to inform planning



Current IFMP considerations

- Further review planned on April- May opportunities covered by current IFMP (June 1, 2020 to May 31, 2021).
- Potential fishing plans:
 - FN FSC fisheries in South Coast / Fraser beginning April with measures similar to 2020.
 - 2020 SFAB proposal for Chinook retention opportunities in **beginning April 2021** period covered by current IFMP.
 - Area G proposal to fish inshore waters of WCVI in April – May 2021
- Planned approach: review proposals for consideration beginning April 2021 with updated evaluation framework developed last spring.
- Consult on evaluation results (see next slide for time lines) and identify adjustments to mitigate concerns (if possible) to inform decisions.



Map from April 2020 SFAB proposal.
Note: Offshore WCVI and Juan de Fuca
MSF proposals (approx. area shown by
orange ovals).



Chinook Evaluation Framework

The purpose of the evaluation framework was to document and compare 2020 fishing proposals that have been submitted for BC Chinook fisheries in order to:

- Evaluate benefit/costs of the submitted proposals relative to general fishery management objectives and associated risk of fishery.
- Identify and evaluate other related risk factors and issues and potential mitigations and/or mitigating factors.
- Evaluate the proposals relative to catch monitoring and assessment requirements; identifying key gaps and uncertainties and potential mitigation(s).
- improve transparency in DFO decision-making support discussion with First Nations and stakeholders
- improve documentation of fishing proposals and help build a shared understanding of management and assessment issues. Note: the results do not represent common agreement on either management objectives and/or management measures; particularly with respect to allocation of and access to the resource.



Evaluation Framework - Updates for 2021

Based on feedback from DFO managers and First Nations and stakeholders engaged in the initial process, updates have been made to the framework and approach:

- Clearly identifying management issues and management objectives in relation to Chinook fisheries generally, not just in relation to Fraser Chinook impacts;
- Emphasis on describing and evaluating Chinook mixed-stock fishing plans generally, not just in relation to Fraser Chinook impacts;
- Use of well defined criteria for characterizing impacts and risk assessment evaluations;
- Identification of more prescriptive measures to address potential monitoring and sampling gaps.
- General stream-lining to reduce duplication.

Draft evaluation framework elements:

- Starting components of regional mixed-stock Chinook fishery management plan (i.e. documenting management issues, general objectives, specific harvest measures). Further work is required to develop a longer term plan.
- An evaluation of changes proposed to Chinook fishing plans (by group) relative to 2019 and 2020 measures based on benefit-risk assessment.
- Compilation of background information that was used in the evaluation of proposed fishery changes.



Chinook Evaluation Framework Timelines

Activity	Target Date
DFO Updates to Evaluation Framework Completed	Early Feb 2021
Consultation on completed Evaluations -send out document with updated evaluations for consultation -webinar(s) to review evaluation document Meetings: IHPC (Feb. 4); FN JTWG + Forum (Feb 1-4); local FNs (TBC); SFAB MB (Feb. 5-6);	End of February - Comments on evaluations due
Review of Feedback FN Forum (Mar. 2-4); IHPC (Mar. 5).	1 st week of March
DFO Approvals	March 2021
Fishery Notices with approved management actions	Approx. April 1, 2021 or following decisions



IFMP Planning Timelines

IFMP	Activity	Expected Outcomes
Current IFMP June 1, 2020 – May 31, 2021	Consideration of possible additional Spring 2021 fishing opportunities that were proposed in 2020 using updated evaluation framework.	Fishing plans confirmed for April – June 2021 period (Note: may include fishing plans for June pending any decisions on changes in New IFMP)
New IFMP June 1, 2021 – May 31, 2022	Consider new proposals or revisions to new IFMP during IFMP process meetings from February to April -informed by priorities feedback	Fishing plans in new IFMP; June1, 2021 to May 31, 2022.



Chinook – 2021 IFMP Priorities Feedback

First Nations

- Engage affected Nations for all stages of conservation planning and implementation, both as co-planners and through meaningful consultation.
- Where data is limited or absent, management measures must be precautionary.
- Work together to develop proactive fishery management plans pre-season that help protect and re-build southern BC Chinook stocks.
- If management actions are planned to continue closure of Spring and Early Summer First Nations FSC fisheries to Fraser Chinook, all other fisheries that impact the stocks must be terminated immediately.
- All fisheries that directly harvest WCVI chinook be included in the 10% Exploitation Rate (ER) objective, including all pre-terminal fisheries that harvest WCVI Chinook.
- Implement measures to reduce the at sea discarding of legal sized Chinook in all recreational fisheries.



Chinook – 2021 IFMP Priorities Feedback

First Nations (cont.)

- Not supportive of Chinook Mark Selective Fishery for the recreational sector during April and May in the WCVI offshore (NTC)
- NTC support for Mark Selective Fisheries in terminal areas to exploit WCVI hatchery production and assist in managing hatchery/wild interactions in terminal areas.
- Implement additional precautions for Chinook fisheries management measures in 2021/22.
- Recreational fisheries impacting sensitive Chinook stocks should remain closed until DFO is able to demonstrate that these stocks are likely to achieve the recovery goals set out in the forthcoming SARA recovery documents, while sustaining further impacts in addition to conservation and FSC needs.
- Continue to increase emergency enhancement capabilities through improvements to existing infrastructure and increasing capacity of existing facilities at the Big Bar slide.



Chinook – 2021 IFMP Priorities Feedback

Sport Fishing Advisory Board (SFAB)

- Timely implementation of MSF opportunities in appropriate waters, including offshore WCVI, where it meets the criteria established in the evaluation framework to maintain the social and economic benefits of the fishery.
- Opportunity to increase Chinook retention based on anticipated decrease in effort during COVID-19.
- Rescind the 2019 bag limit reductions and reinstate the previous annual possession limits of Chinook.
- Decisions and potential implementation guidelines made well in advance of the actual fishing season.
- Use the BC Chinook Planning Process as a platform for multi-sectoral discussion surrounding Chinook recovery planning without duplicating efforts from IHPC and SAP Review processes.
- Selective fishing tools such as size restrictions can be applied to allow larger mature female chinook stocks of concern to pass through fishery.
- Undertake the necessary analysis to understand what represents the optimal minimum size for Chinook salmon retention in the BC recreational fishery.
- First Nations FSC harvest of Chinook in the marine waters between Vancouver Island and the mainland should be allowed to continue on a year-round basis given small size.
- Create a comprehensive, integrated ecosystem-management based recovery plan.



Chinook – 2021 IFMP Priorities Feedback

- SFAB Proposal for Chinook Directed fishery on the Fraser targeting Summer 41 Chinook.
- Potential dates: August 15 to September 19
- Location: Waters of the Fraser River between confluence of the Chilliwack/Vedder upstream the Rosedale Agassiz bridge
- Gear: angling with maximum leader length of 80 cm
- In order to restrict leader length, a condition of licence must be added to Freshwater angling licence for Fraser River in Region 2 for the time period specified.
 - A change to BC Freshwater angling licence would be consulted on through the provincial regulatory process.
- Subject to implementation of condition of licence; IFMP discussion also required on criteria for considering whether to open a fishery in season including available impacts to stocks of concern (i.e. Fraser sockeye, Summer 5₂ Chinook), allocation priorities, or other considerations.



Chinook – 2021 IFMP Priorities Feedback

Marine Conservation Caucus

- Unsupportive of the proposal for mass marking and Mark Selective Fisheries until outstanding hatchery issues are resolved, comprehensive GSI monitoring of catch and releases is introduced, and scientifically defensible estimates of FRIM incorporated.
- Produce estimates of total mortalities of 4-2 and 5-2 Chinook in unsanctioned fisheries and incorporate them in estimates of 2020 total mortalities and 2021 planning; examine the fishery effect.
- Engage in contingency planning if 5% total mortality objective is not met.
- Define thresholds of Chinook abundance under which management measures (marine fishery restrictions/closures) will go into effect.
- Recommend establishing an abundance threshold below which no marine or non-terminal Chinook fishery can occur.



What is the status of the SBC Chinook Committee?

- The Southern BC Chinook Committee was established in 2019 at the direction of then Minister Wilkinson as part of management measures to address Fraser River Chinook conservation.
- Intent was to provide Regional forum for First Nations, stakeholders, ENGOs and Province of BC to consider and advance common interests in sustaining and recovering salmon.
- Southern BC Chinook Committee raised process issues in four key areas over last year:
 1. The scope of the work and the need to develop a clear Terms of Reference for the committee and technical process;
 2. Shift the focus from short term planning (e.g., fishery measures for 2020) to longer term planning;
 3. The need for the Department to clearly identify the purpose of the committee and technical process; and
 4. Work with First Nations, including Fraser Salmon Management Board, to identify appropriate structures to support this work and appropriate resources to support those
- Need to consider effective integration with sub-region scale rebuilding efforts for WCVI Chinook and proposed work for ECVI/Mainland Chinook (IMAWG – BCSRIF proposal) and Fraser Chinook (FSMC – BCSRIF proposal)
- Currently the Department is reviewing next steps to address these issues and follow-up with committee members.



Discussion Questions

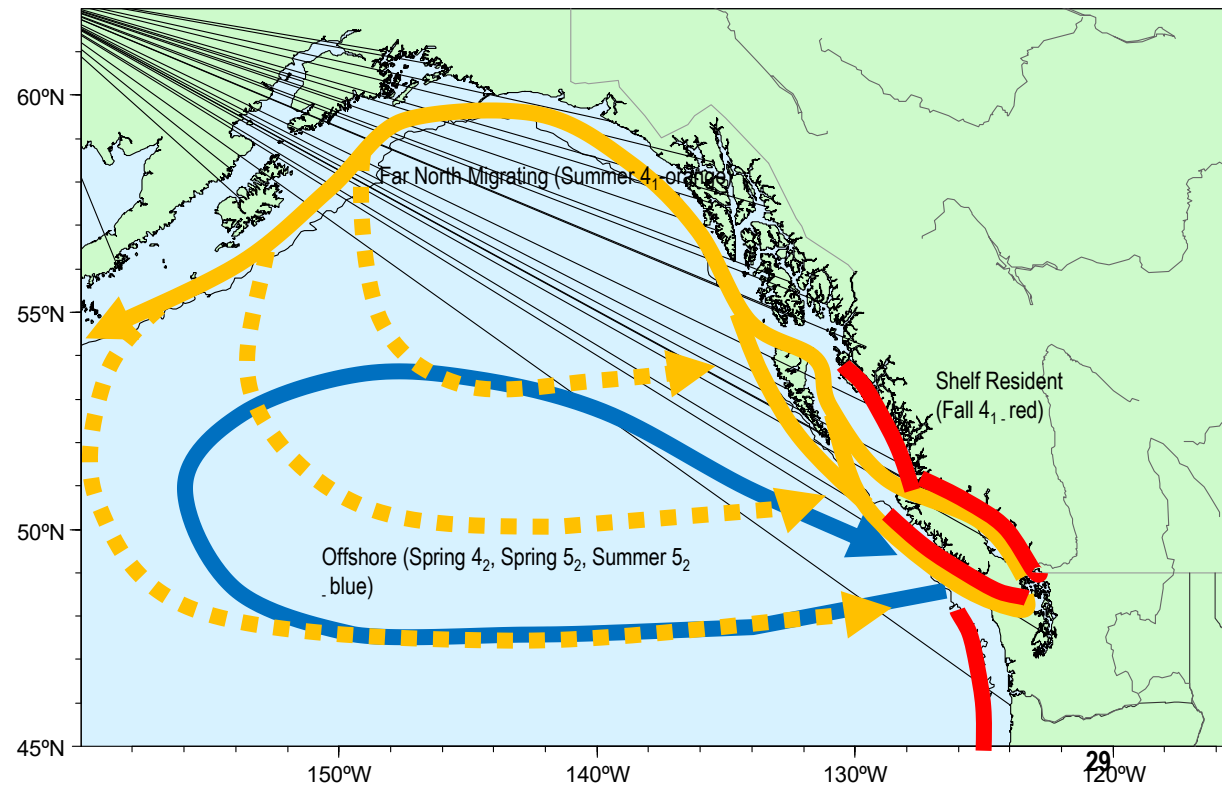
1. What adjustments to the 2020 management approach should be considered moving forward?
2. What additional contingencies should be in place for the Big Bar rockslide? COVID 19?
3. Are there local fishery opportunities that could provide additional opportunities for harvest while avoiding stocks of concern?
4. Are there unintended consequences from the 2020 approach that need to be addressed?
5. Are there monitoring improvements that could mitigate concerns?
6. Do you have specific questions that should be addressed by technical experts?



Background Information



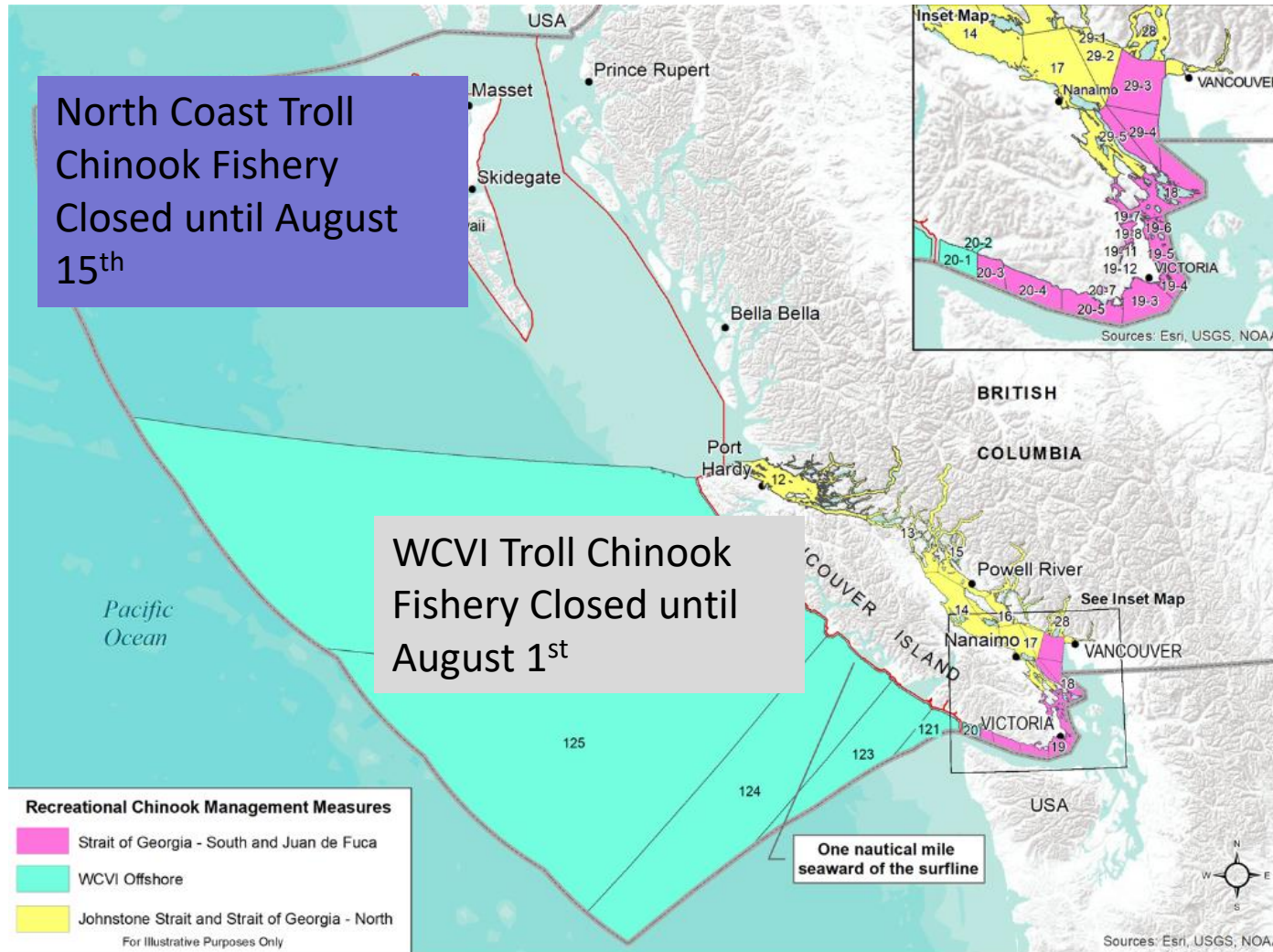
Fraser Chinook - Ocean Distribution



Different Fraser River origin Chinook populations exhibit a range of ocean distributions which influences their exposure to and impacts by ocean fisheries.

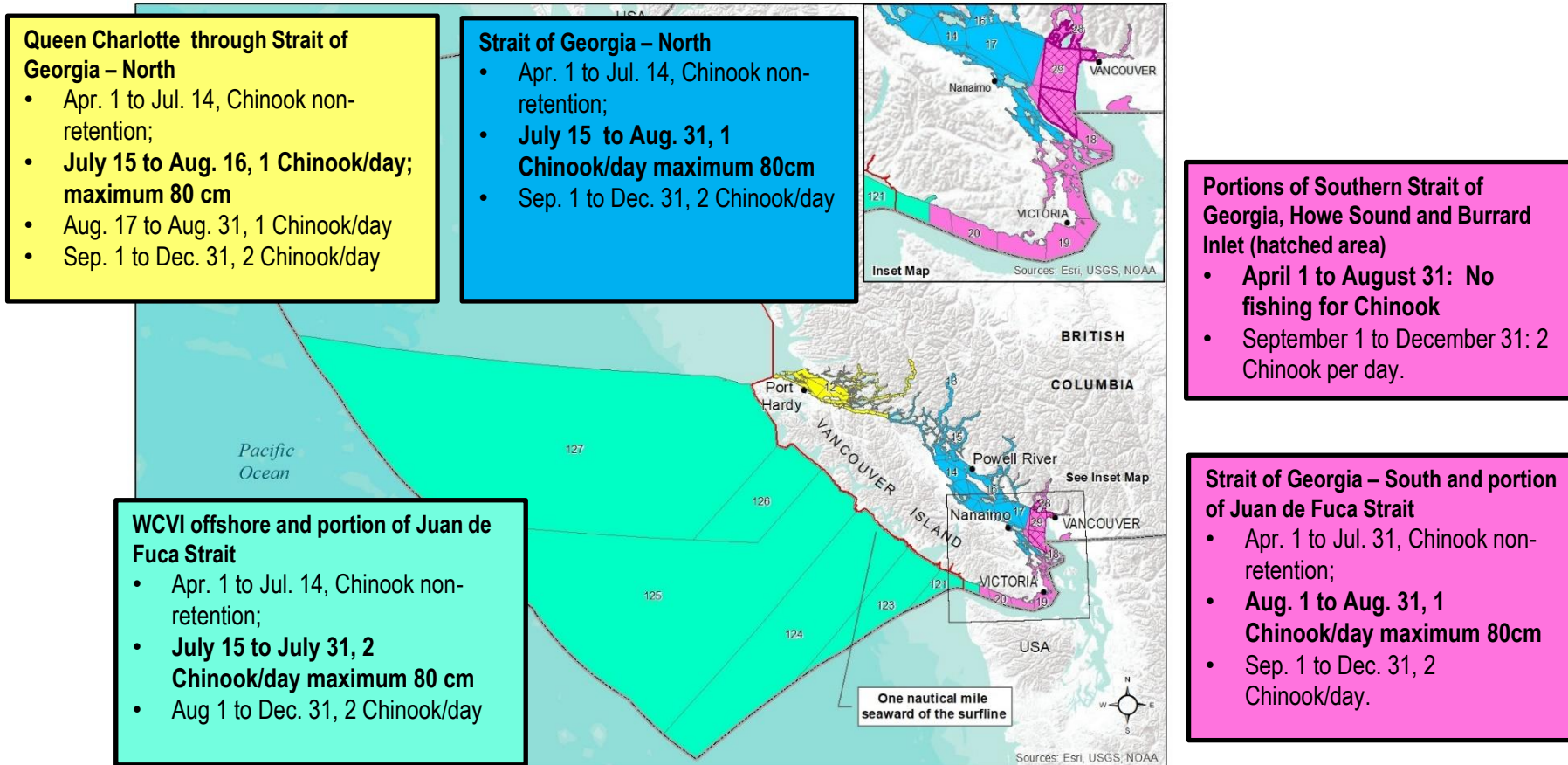


2020 Commercial management measures





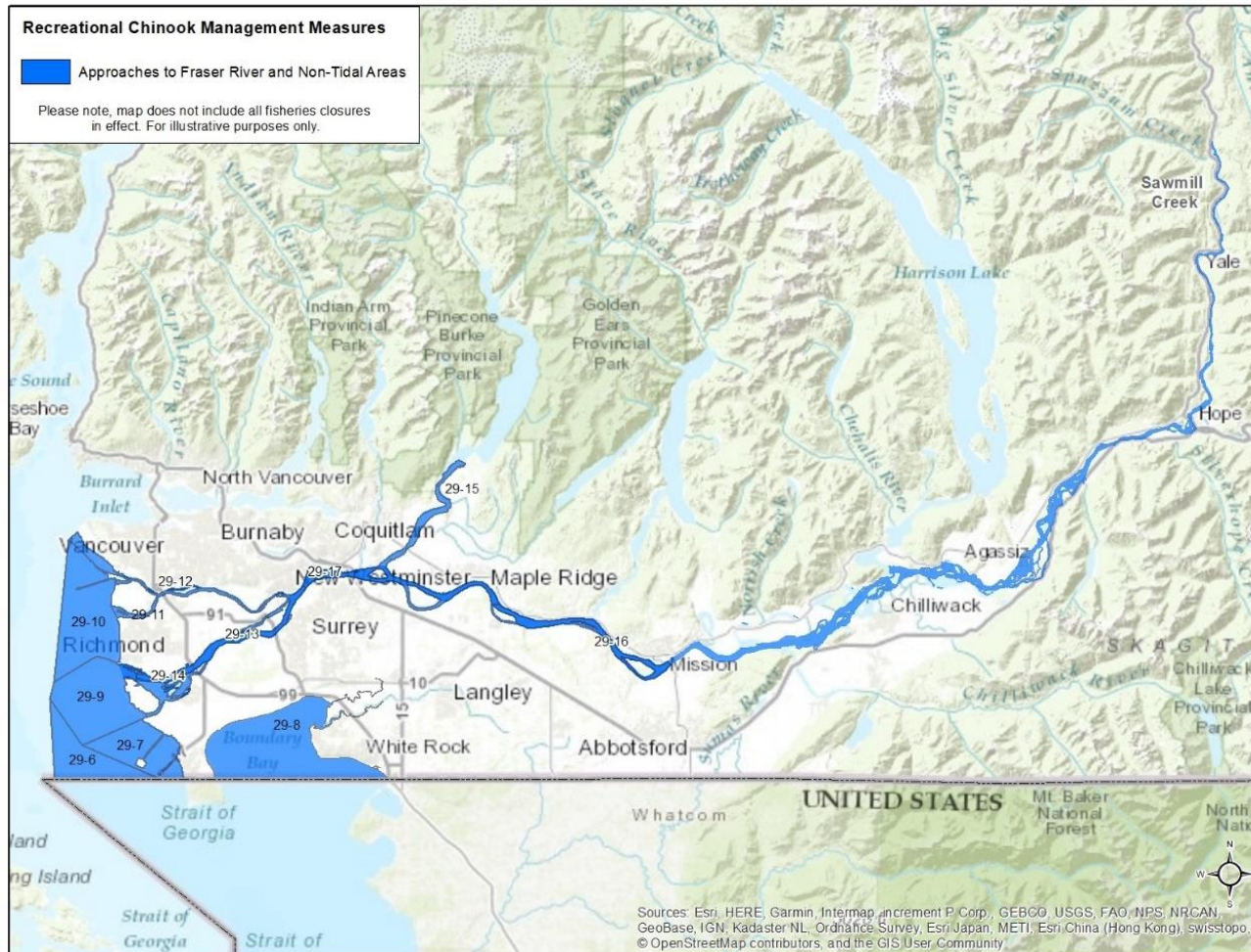
2020 Recreational management measures



2020 changes noted in bold font



2020 Recreational management measures – Fraser River



- Approaches to Fraser River - Subareas 29-6, 29-7, 29-9 to 29-17 and the non-tidal waters of the Fraser River from Mission Bridge to the confluence with Sawmill Creek:**
- January 1 to November 1: No fishing for salmon
 - (Fishing opportunities for specific salmon stocks may be considered)
- Freshwater Regions 3,5,7 & 8: Year round:**
- Closed to fishing for salmon
 - (Fishing opportunities for specific salmon stocks may be considered)



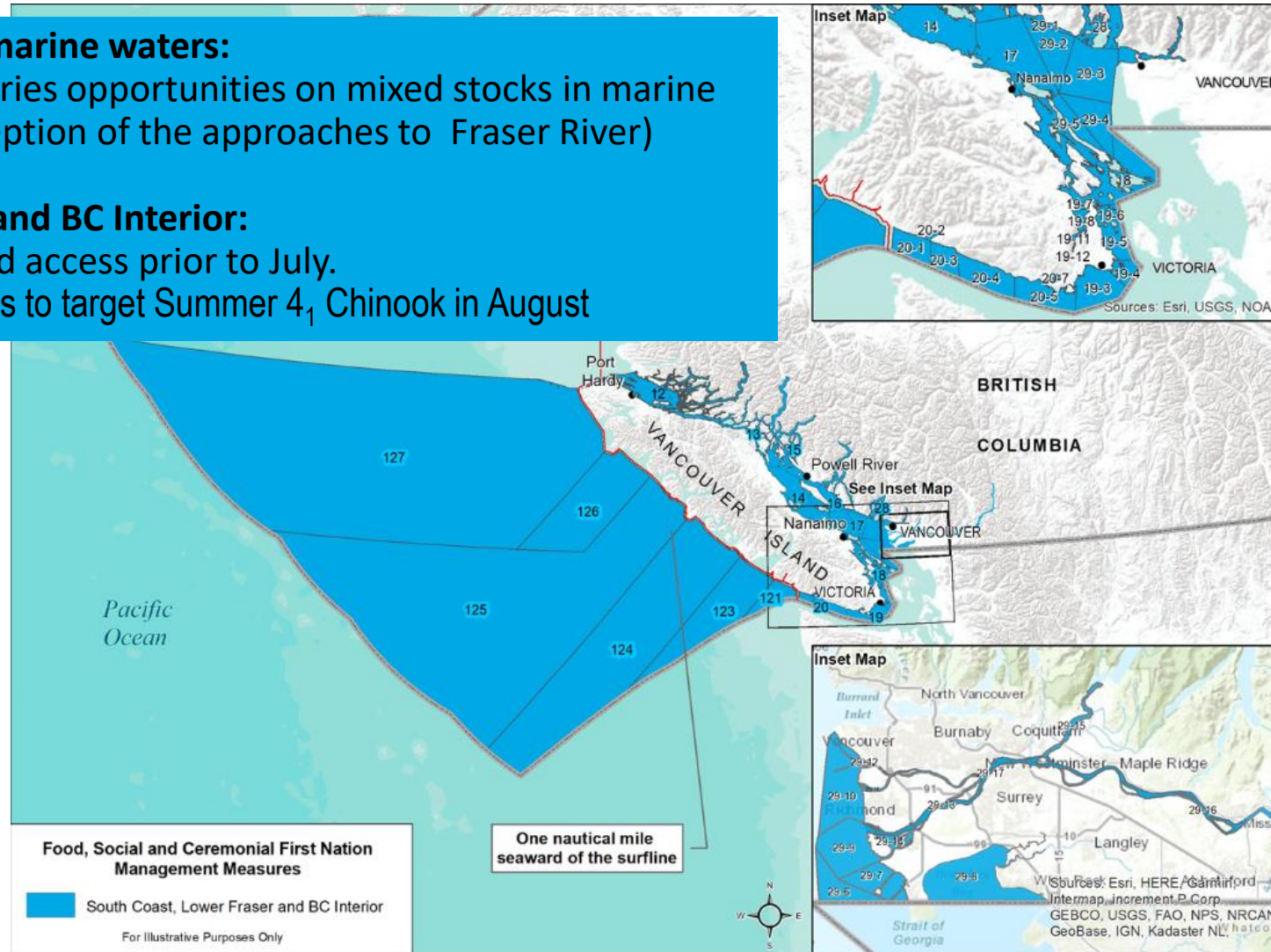
2020 First Nations Food, Social and Ceremonial

Southern BC marine waters:

- Some fisheries opportunities on mixed stocks in marine areas (exception of the approaches to Fraser River)

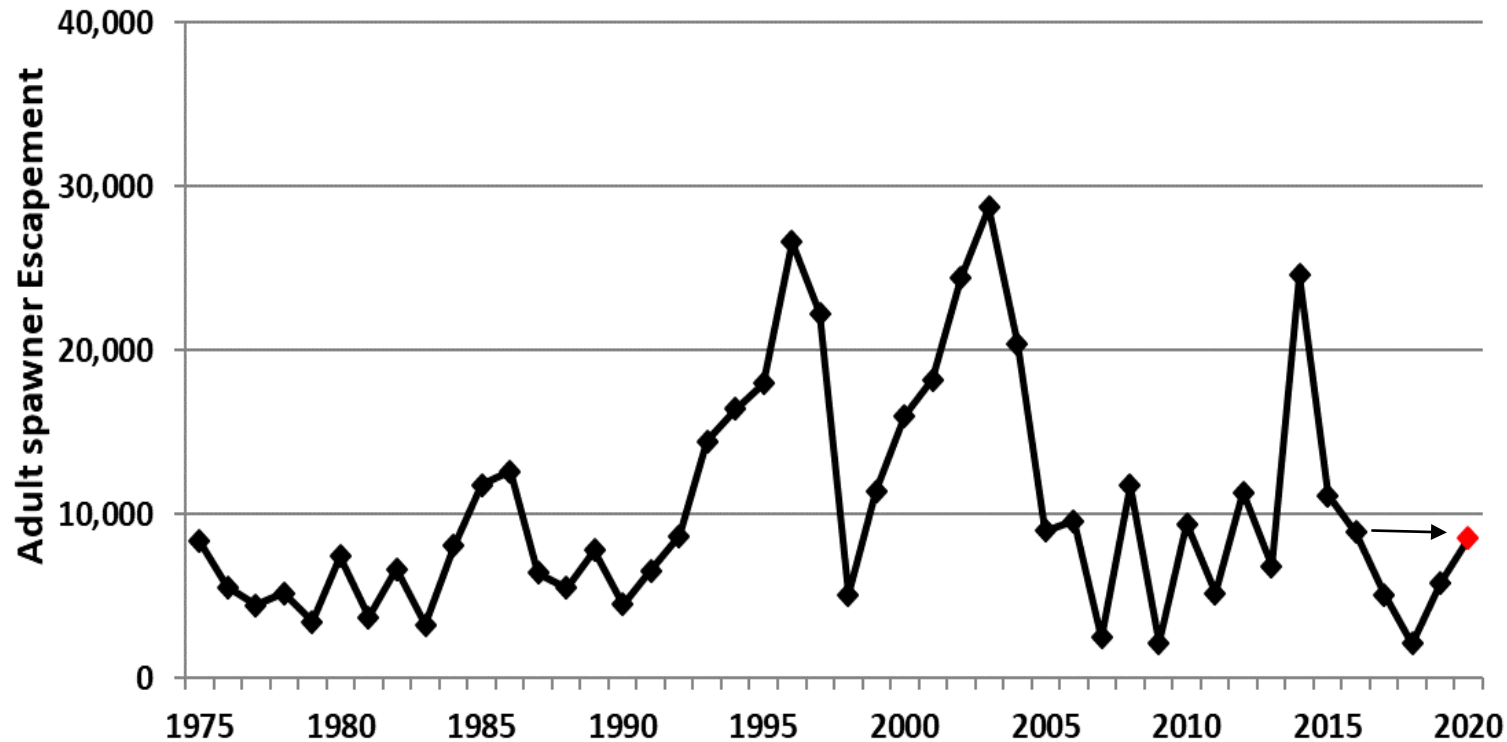
Lower Fraser and BC Interior:

- Very limited access prior to July.
- Opportunities to target Summer 4₁ Chinook in August





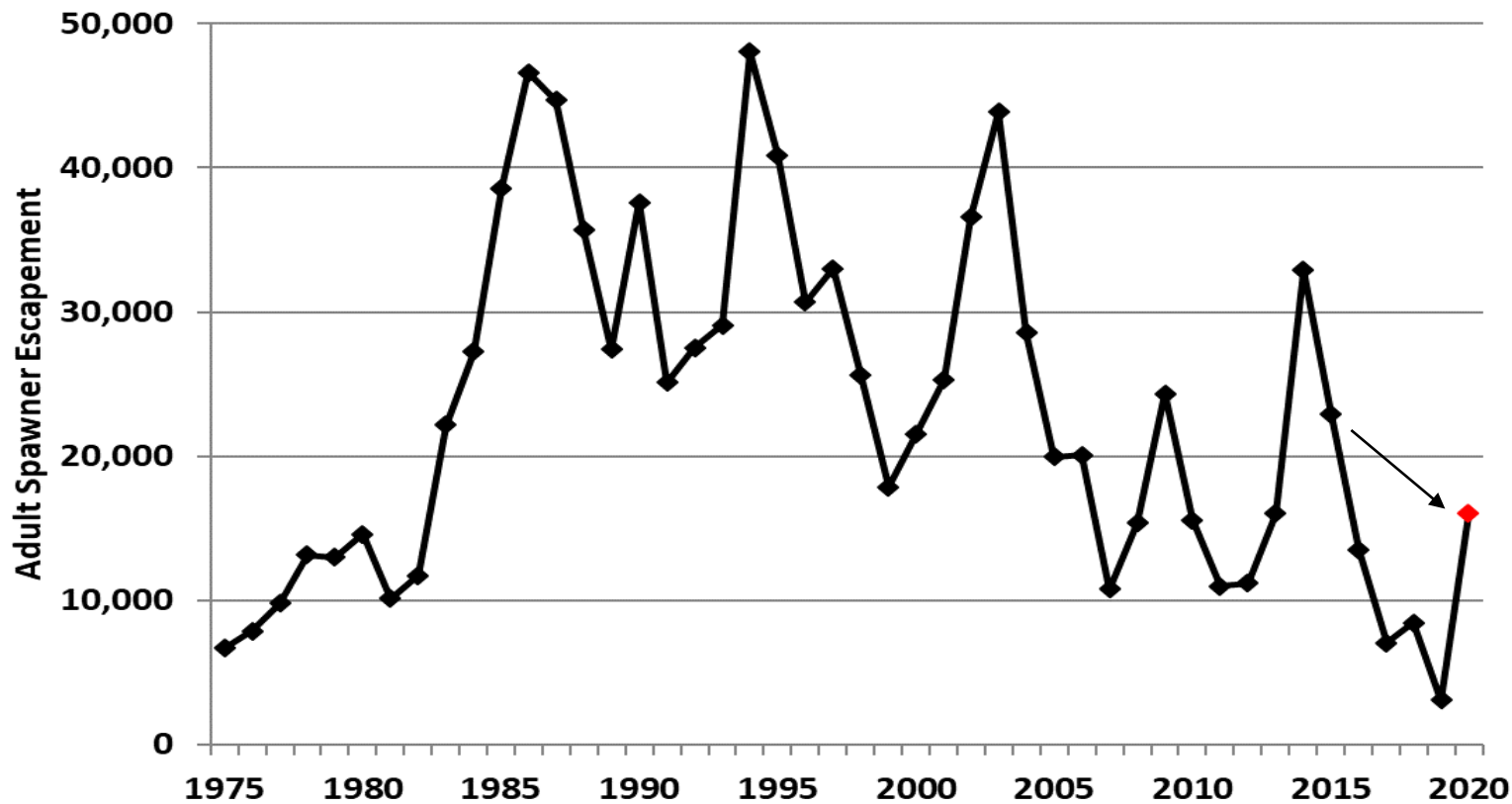
Spawners - Fraser Spring-run Age 1.2 (4₂) Chinook



- 2019 was below the recent (1999-2018) average
- The brood year escapement (2016) was near the recent average
- 2020 (red point) is a preliminary estimate only



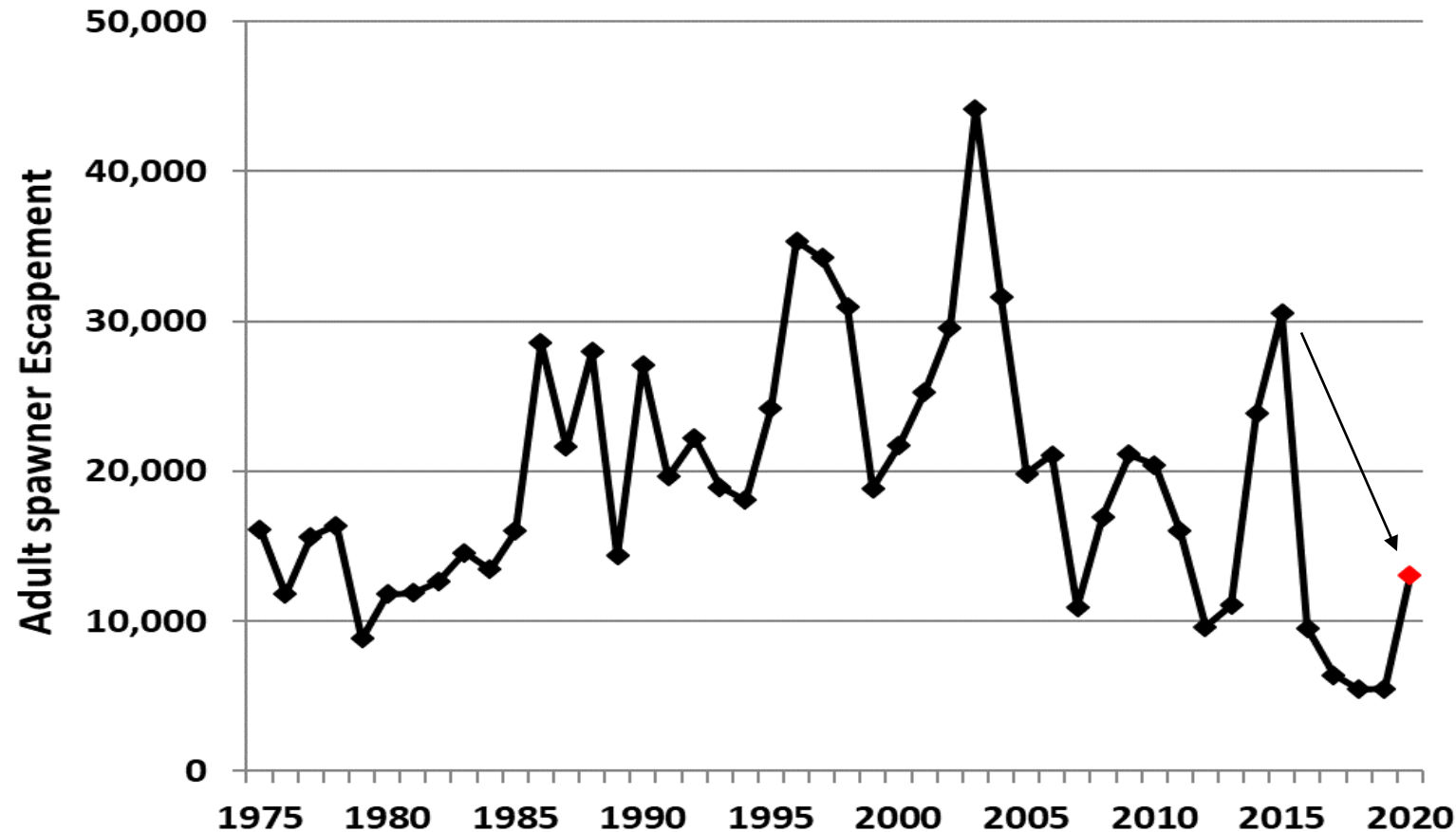
Spawners - Fraser Spring-run Age 1.3 (5₂) Chinook



- 2019 was well-below the recent average
- 2015 brood year escapement was near the recent average
- 2020 (red point) is a preliminary estimate only



Spawners - Fraser Summer-run Age 1.3 (5₂) Chinook

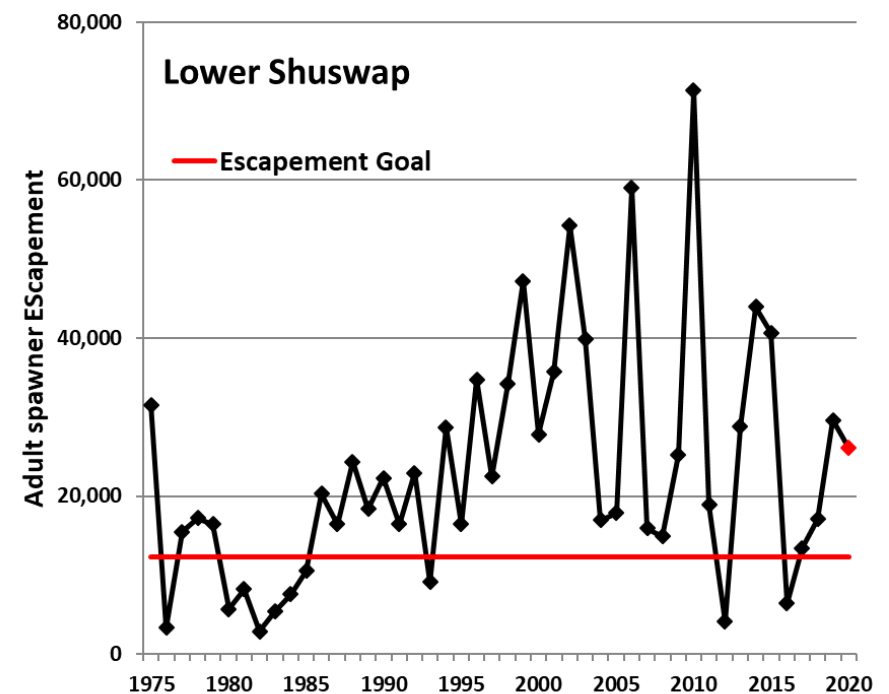
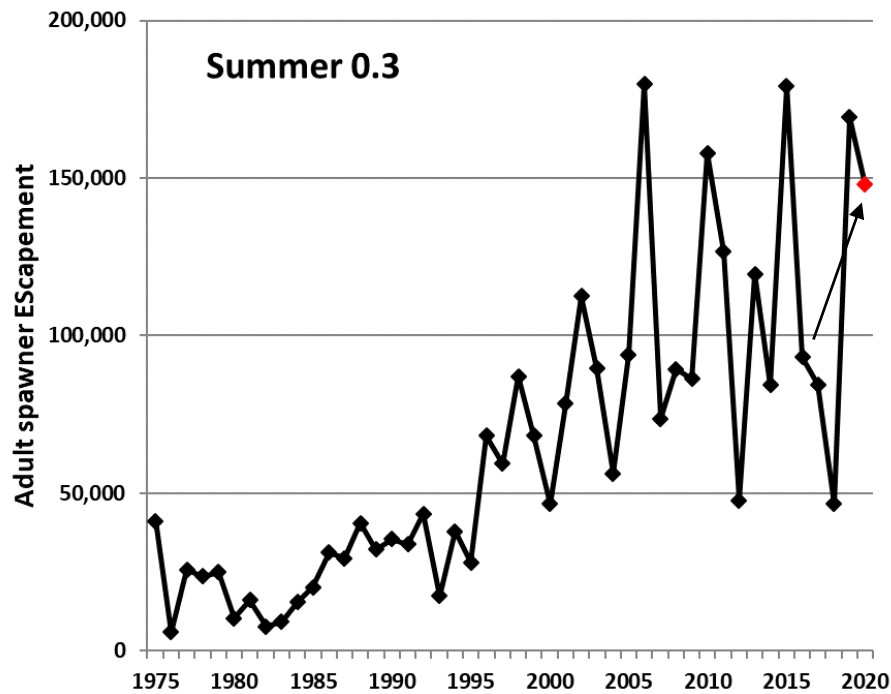


- 2019 was below the recent average
- 2015 brood year was above average
- 2020 (red point) is a preliminary estimate only



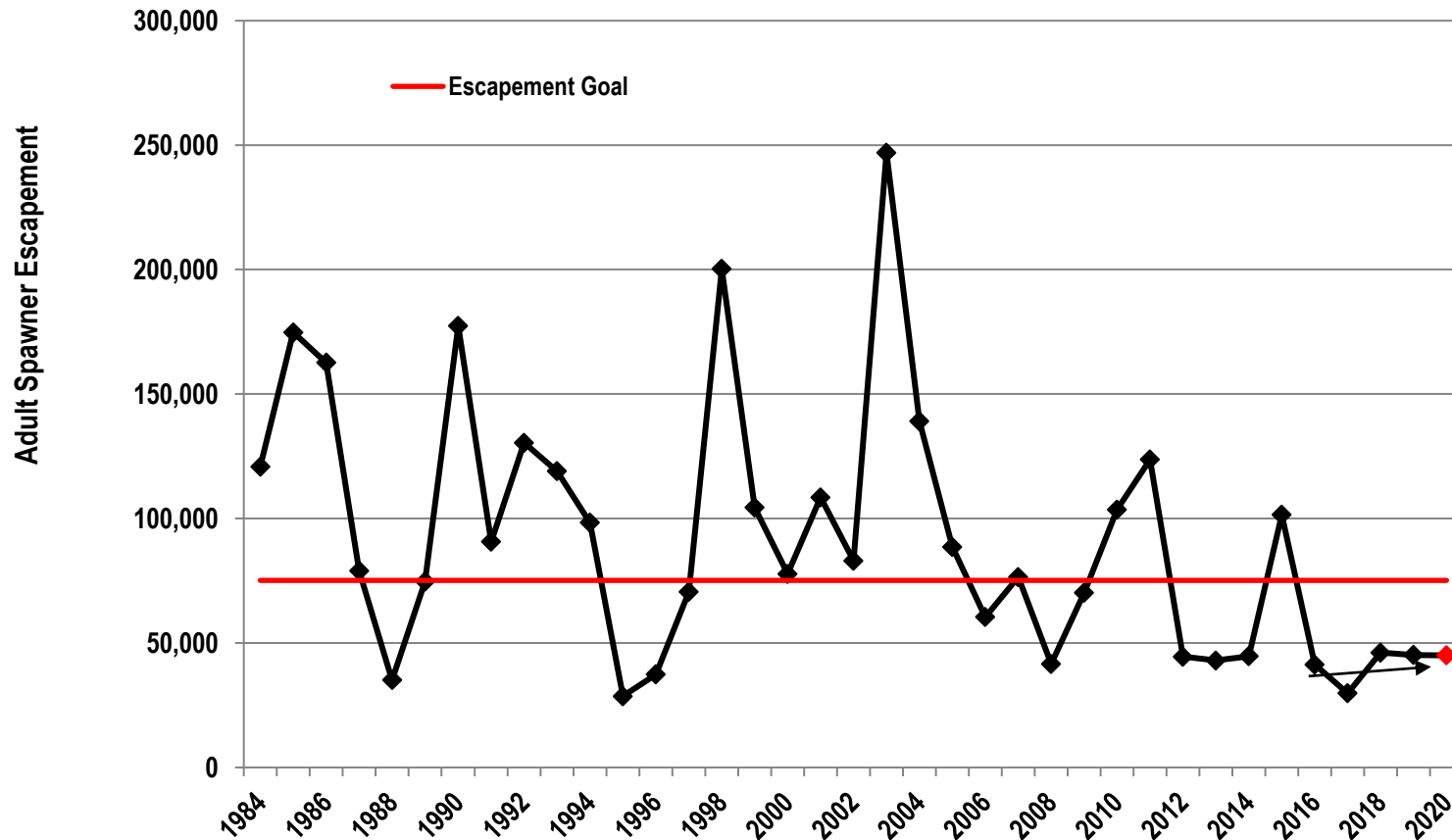
Spawners - Fraser Summer-run Age 0.3 (4_1) Chinook

- 2019 stock group was above recent average
- 2019 Lower Shuswap indicator stock was above escapement goal
- 2020 (red point) is a preliminary estimate only





Spawners - Fraser Harrison Fall (4₁) Chinook



- 2019 escapement estimate and the 2016 brood year escapement were below both the escapement goal and the recent average
- The escapement goal has only been met once in the last 9 years
- 2020 (red point) Harrison preliminary estimate is ~45,000