



# Looking Forward: 2022 Salmon Fisheries

Preliminary Pre-season Planning Considerations

Fraser and Approach Salmon Forum

January 20, 2022



# Outline

## A. IFMP Planning Considerations:

1. First Nations Food, Social and Ceremonial Fisheries
2. COSEWIC and SARA Listing Timelines
3. Chinook Management
4. Interior Fraser Steelhead
5. Fraser River Sockeye
6. Interior Fraser Coho
7. CSAF Demonstration Fisheries

## B. IFMP process timelines



## A. IFMP Planning Considerations

- Key planning considerations reflect areas where Department expects discussion on potential changes to management approaches and decision guidelines for 2022 fishing season
- A letter was sent to First Nations and stakeholders in December with further details on planning considerations.
- Consultations with First Nations and stakeholders will occur as part of process to develop the draft salmon IFMP and includes a 30 day public comment period prior to finalizing the 2022/23 salmon IFMPs.



## 1. First Nations Food, Social and Ceremonial Fisheries

- Departmental staff will consult with First Nations on fishing plans that achieve conservation objectives and provide FSC fishery harvest opportunities.
- Restrictions in commercial and recreational fisheries may be required to provide for First Nations harvest opportunities.
- Meetings planned with First Nations Forum to discuss Fraser salmon fishing plans as part of the IFMP process
- The Department signed the Fraser Salmon Collaborative Management Agreement and will be working via the Fraser Salmon Management Board (FSMB) to reach consensus and make joint recommendations on items in the annual work plan related to Fraser River salmon.



## 2. SARA Listing Processes - Salmon

- Listing processes are underway for 41 designatable units (*E*, *TH* and *SC*) Pacific Salmon and Trout

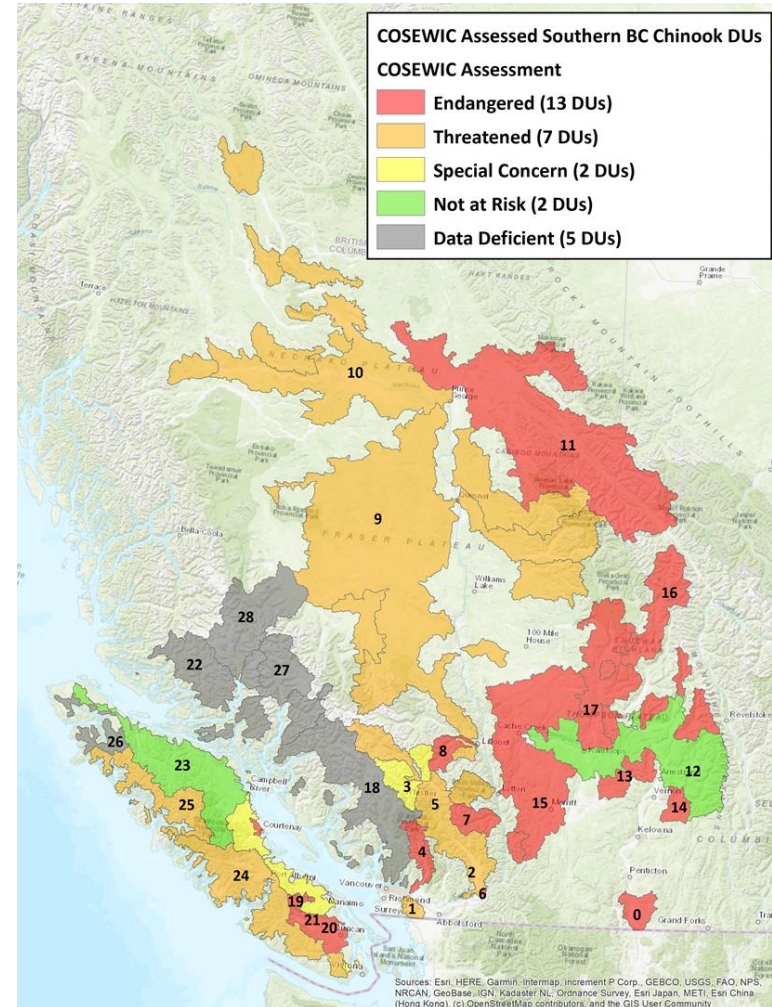
Species	# of DUs*	COSEWIC Assessment Date	COSEWIC Status	COSEWIC Annual Report Date
Sakinaw Sockeye	1	2016 (April)	E	Oct 2016
Interior Fraser Coho	1	2016 (November)	T	Oct 2017
Okanagan Chinook	1	2017 (April)	E	Oct 2017
Fraser Sockeye (Group I)	24	2017 (November)	8 E, 2 T, 5 SC, 9 NAR	Oct 2018
Southern BC Chinook (Group I)	16	2018 (November)	8 E, 4 T, 1 SC, 1 NAR, 2 DD	Oct 2019
Southern BC Chinook (Group II)	12	2020 (November)	4 E, 3 T, 1 SC, 1 NAR, 3 DD	Oct 2021
Steelhead Trout (Thompson & Chilcotin) Regular re-assessment**	2	2020 (November)	2 E	Oct 2021
Fraser Sockeye (Group II)	7	2021 (November)	3 X, 2 E, 2 SC	Anticipated Oct 2022

X – Extinct, E – Endangered, T – Threatened, SC – Special Concern, NAR – Not at Risk, DD – Data Deficient,



# 3. Southern Chinook Status Assessment

- The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assessed southern BC Chinook in two batches in November 2018 and November 2020.
- 29 Chinook Southern BC Chinook DUs assessed by COSEWIC, including 16 Fraser R. Chinook DUs nearly all of these DUs were assessed to be at risk (10 endangered; 4 threatened; 1 special concern; 1 not at risk).
- 2021 Management objective for Spring 4<sub>2</sub>, Spring 5<sub>2</sub> and Summer 5<sub>2</sub> Chinook to manage Canadian fisheries in highly precautionary manner to allow as many fish to pass through to spawning grounds as possible.
- Restrictions for Fraser Chinook covering wide times/areas of southern BC and parts of northern BC also benefit other co-migrating Chinook; additional stock specific measures are identified in IFMPs.





## 3. 2021 Chinook Measures

- 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 into July to limit impacts on at-risk Fraser Chinook, with opportunities to target healthy Summer 4<sub>1</sub> Chinook in August.
- Commercial troll fisheries delayed into August to avoid Fraser Chinook encounters:
  - Area F (Northern BC) – Chinook non-retention until August 12 (directed Coho fishery also closed)
  - Area G (WCVI) – Delayed start until August 1
- Recreational measures:
  - A small number of terminal and non-Fraser Chinook retention MSF opportunities were approved;
  - Additional details are provided by Fishery Notice and maps on DFO web-site and in the appendix:  
<https://www.pac.dfo-mpo.gc.ca/fm-gp/salmon-saumon/fraser-chin-mgmt-gest-quin-eng.html>



# 3. Fraser Chinook Management and Data Review

Fishery evaluation data for Chinook available in Winter/Spring of following year includes:

1. Spawner abundance
2. Big Bar impacts
3. Terminal return / Run size
4. Fishing impacts on Fraser stocks of concern:
  - a) Coded-wire tag (CWT) recoveries
  - b) Exploitation rate analysis (ERA) results
  - c) Estimated fishing mortalities via genetic stock identification (GSI) analysis and run reconstruction; focus on Fraser Chinook but potential future expansion to other southern Chinook populations



## 3. 2022 Chinook Management Measures

- Management measures are anticipated to be required for many years given the status of Southern BC / Fraser Chinook.
- Planning should anticipated continuation of measures in similar times/areas similar to recent years; and,
- Consideration of potential adjustments to current fishery management measures will be discussed and reviewed during Salmon Integrated Fisheries Management Planning process (IFMP).
- As part of PSSI, DFO developing a discussion paper to help inform future decision making around the use of mass marking (MM) and mark selective fisheries (MSF); details on opportunities for engagement on this work will be provided in early 2022.
- Current plans for MM and MSF pilots are identified in the current IFMP (in effect June 1, 2021 to May 31, 2022).



## 4. IFR Steelhead Status

- Thompson and Chilcotin Steelhead were assessed as *Endangered* by COSEWIC in 2018. Neither Designated Unit (DU) was listed under the resulting Species at Risk Act (SARA) Emergency Listing Process that concluded in July 2019.
- Identified threats to these stocks include changes to the marine environment, fishing mortality, degradation of freshwater and marine habitats, predation and competition.
- COSEWIC recently reassessed these two populations as *Endangered* and published in the October 2021 COSEWIC Annual Report. This triggers a required for a new SARA Listing Process under 'regular' (not emergency) listing process.



## 4. Interior Fraser River Steelhead Status

- In-season projections of spawning escapements for Thompson and Chilcotin Steelhead that returned in 2021 (spawning in spring of 2022) are 69 and 32, respectively.
  - These estimates are produced by BC FLNRORD based on encounters of Steelhead at the DFO Albion Chinook/Chum Test Fishery on the Fraser River. The Albion test fishery encountered 2 Steelhead between late August and early November.
- Final Steelhead spawning escapement estimates will be available in late Spring/early Summer of 2022.

Population	Spawning Locations	Recommended Recovery Target From 2018 RPA Science Advisory Report	Escapement (number of spawners)							
			Pre - 1995	1995 to 2004	2005 to 2014	2017 2016 RY	2018 2017 RY	2019 2018 RY	2020 2019 RY	2021 2020 RY
Thompson River	Deadman, Nicola, Bonaparte Rivers	938 spawners	1880	1840	1110	260	150	216	257	203
Chilcotin River	Chilko, Taseko, Little Chilcotin Rivers	562 to 744 spawners	1150	850	400	187	77	120	38*	19

\* 2020 Chilcotin escapement estimate is biased low due to COVID-based changes to assessment programs.



## 4. Joint Steelhead Conservation Action Plan

- In conjunction with the announcement of the SARA Listing decision in July 2019, the Fisheries Minister also announced the development of a joint DFO – BC Steelhead Action Plan for Thompson and Chilcotin Steelhead that will:
  - reduce mortality and increase survival of Thompson and Chilcotin Steelhead returning to rivers to spawn;
  - improve freshwater conditions through habitat protection and restoration; and,
  - increase science and monitoring activities.
- In August 2021, the Province of BC released an Action Plan (which encompasses the 2019 BC-DFO Action Plan) to manage IFS and an Activities Report which reports on the activities achieved since 2019 through to early 2021. This document will be used as a basis for further collaboration with partners and stakeholders.



## 4. 2021 IFR Steelhead Management Measures

### Commercial Fisheries (Fraser River and marine including Nitinat)

- 42 day moving window closure for seine (including shallow seine and purse seine)
- 27 day moving window closure for troll
- These measures applied to fisheries on the Steelhead migratory route on both the west coast and the east coast of Vancouver Island
- Fisheries targeting terminal stocks in areas outside of the Steelhead migratory route were not affected by these measures
- Note: In June 2021 Minister announced PSSI commercial salmon fishery closures: JST mixed-stock Chum gillnet, Fraser Chum gillnet, and Nitinat Chum gillnet and seine.

### Recreational Fisheries

- No closures to marine recreational fisheries (wild Steelhead release)
- 42 day moving window closure for salmon fisheries in the Fraser River and tributaries downstream of Thompson and Chilcotin Steelhead spawning and holding areas
- Fisheries occurring in Fraser River tributaries outside of the IFR Steelhead migratory route were not affected by these measures



## 4. 2021 IFR Steelhead Management Measures

### Food, Social and Ceremonial Fisheries (Fraser River and marine)

- No closures to marine FSC fisheries (wild Steelhead release)
- 27 day moving window closure for selective gear in the Fraser River and tributaries downstream of Thompson and Chilcotin Steelhead spawning and holding areas
- **Provisions added to set gillnet fisheries to reduce incidental mortality of IFR Steelhead**
- Fisheries occurring in Fraser River tributaries outside of the IFR Steelhead migratory route will not be affected by these measures

Details of time and area closures and excluded terminal fisheries are contained in Appendix 9 and the PSSI commercial fishery closures can be found in Appendix 11 of the 2021/22 Southern BC Salmon IFMP.



## 4. 2022 IFR Steelhead Planning

- Given the continued expectation of low IFR Steelhead abundance, measures to protect IFR Steelhead are expected to continue for some time.
- We do not anticipate implementing significant changes to the current IFR Steelhead management approach for salmon fisheries given the current information available.
- Additional consultations planned on longer term commercial fishery closures for 2022 and beyond.
- Further discussion required on fishery sampling to improve baseline information on Steelhead while maintaining a risk averse approach towards potential Steelhead mortalities.
- DFO will be working with First Nations and stakeholders to ensure that all our programs, including hatchery and habitat management, are aligned to support IFR Steelhead recovery.



## 4. 2021 Chum Fisheries Recap

- Returns of Chum salmon to the Fraser River, systems adjacent to the Strait of Georgia, and Nitinat were extremely poor in 2021. There were no commercial Chum fisheries in Johnstone Strait, the Fraser River and terminal Vancouver Island systems.
- FN FSC opportunities for chum salmon were provided for First Nations in the marine area (not affected by IFS window closure) and the Fraser River after the closure dates, with mandatory Steelhead release. The return to the Fraser River was estimated to be less than 500,000, resulting in reduced FN FSC opportunities for Chum salmon.
- Marine Recreational fisheries were open with Steelhead release moving to Chum non-retention in late October.
- Fraser River Chum recreational fisheries moved from retention to non-retention (Steelhead release required) when indications were for a run size lower than the escapement goal, and then to no fishing for Chum when the run dropped below 500,000.
- 2022 planning will need to consider management measures / harvest decision guidelines for all fisheries in event of low Chum returns in marine approaches and the Fraser River.



## 5. Fraser River Sockeye Management

- Quantitative forecasts will be available by February 2022.
- 2022 is a dominant Adams (Late run) return year.
- The 2018 brood year Sockeye return was moderate (10.73M) compared to cycle-line averages. It is expected that the 2022 forecast will be below the cycle average.
- Given continued poor productivity, planning will need to consider the potential for a range of returns, as well as, specific management measures for protecting and rebuilding stocks of concern including:
  - duration of the window closure or other measures to protect weak Sockeye stocks returning within the aggregates;
  - escapement plan for each aggregate;
  - additional management measures for stocks of concern; and,
  - FSC fishery planning for returns at low TAC or below escapement targets



# Fraser Sockeye Returns

Return Year	Forecast Probability Level						Actual Returns
	<10%	10%	25%	50%	75%	90%	
1998	NA	4,391,000	6,040,000	6,822,000	11,218,000	18,801,000	10,870,000
1999	NA	3,067,000	4,267,000	4,843,000	8,248,000	14,587,000	3,640,000
2000	NA	1,487,000	2,449,000	4,304,000	7,752,000	NA	5,200,000
2001	NA	3,869,000	6,797,000	12,864,000	24,660,000	NA	7,190,000
2002	NA	4,859,000	7,694,400	12,915,900	22,308,500	NA	15,130,000
2003	NA	1,908,000	2,742,000	3,141,000	5,502,000	9,744,000	4,890,000
2004	NA	1,858,000	2,615,000	2,980,000	5,139,000	9,107,000	4,180,000
2005	NA	5,149,000	8,734,000	16,160,000	30,085,000	53,191,000	7,020,000
2006	NA	5,683,000	9,530,000	17,357,000	31,902,000	56,546,000	12,980,000
2007	NA	2,242,500	3,602,000	6,247,000	11,257,000	19,706,000	1,510,000
2008	NA	1,258,000	1,854,000	2,899,000	4,480,000	7,057,000	1,740,000
2009	NA	3,556,000	6,039,000	10,578,000	19,451,000	37,617,000	1,590,000
2010	NA	5,360,000	8,351,000	13,989,000	23,541,000	40,924,000	28,250,000
2011	NA	1,700,000	2,693,000	4,627,000	9,074,000	15,086,000	5,110,000
2012	NA	743,000	1,203,000	2,119,000	3,763,000	6,634,000	2,050,000
2013	NA	1,554,000	2,655,000	4,765,000	8,595,000	15,608,000	4,130,000
2014	NA	7,237,000	12,788,000	22,854,000	41,121,000	72,014,000	20,000,000
2015	NA	2,364,000	3,824,000	6,778,000	12,635,000	23,580,000	2,120,000
2016	NA	814,000	1,296,000	2,271,000	4,227,000	8,181,000	853,000
2017	NA	1,315,000 <sup>R</sup>	2,338,000	4,432,000	8,873,000	17,633,000	1,641,000
2018	NA	5,265,000	8,423,000	13,981,000	22,937,000	36,893,000	10,675,000
2019	NA	1,832,000	2,979,000	5,056,000	9,133,000	15,313,000	564,000
2020	NA	275,000	486,000	924,000	1,834,000	3,573,000	288,000

- In the last decade returns have been near or below p50 forecast with exception of 2010 (2021).
- In most recent years returns have been well below forecast (~p10-red cells)

← Record return (2010)

← Brood Year (2018)

\*2018-2020 are preliminary estimates



## 6. Interior Fraser River Coho

- Abundance based management framework in place for Interior Fraser River Coho.
  - 2020 – *LOW* status based on a combination of marine survival rates and spawner abundance for IFR Coho.
- **Low status:** No change to 20% ER cap for US and Canada in place since 2002. Note: each country's share of the 20% ER cap (10% each) may be managed to lower ERs based on domestic planning. Canada implemented 3-5% ER on interior Fraser River MU in 2019.
- Preliminary assessment of spawner abundance expected in early 2021.
- Additional work underway to inform development of status framework for Strait of Georgia and Lower Fraser Coho management units.
  - Number of projects proposed/underway to address current data limitations and inform management.



## 6. IFR Coho Status Zones

	Low	Moderate	Abundant
<b>Survival</b>	$S \leq 0.03$	Three consecutive years $0.03 < S \leq 0.06$	Three consecutive years $S > 0.06$
		and	and
<b>Escapement</b>	Monitored in CU's and sub pops but no thresholds	Three consecutive years: Half of sub pops in each CU > 1000  <b>or</b> Aggregate MU esc. objective (e.g., 27,000)	Three consecutive years: All IFR sub pops in each CU > 1000  <b>or</b> Aggregate MU esc. objective (e.g., revised 40,000)
<b>ER cap (US/Can)</b>	<b>0.20</b> (0.10/0.10)	<b>0.30</b> (0.12/0.18)	<b>0.45</b> (0.15/0.30)

**Despite improved escapements, we have not met improved survival criteria so expect planning based on LOW status for 2022.**



## 7. CSAF Demonstration Fisheries

- Submissions of any new demonstration fishery proposals (or substantial changes to existing proposals) should be submitted by proponents to
  - [DFO.PacificSalmonRMT-EGRSaumonduDpacifique.MPO@dfo-mpo.gc.ca](mailto:DFO.PacificSalmonRMT-EGRSaumonduDpacifique.MPO@dfo-mpo.gc.ca) and local Fisheries Managers no later than **January 27th, 2022**.
- As in previous years, this is to ensure sufficient time for the Department to evaluate the proposals and provide an opportunity for feedback and discussion through the draft IFMP consultation process.
- Demonstration fishery proposals that are not submitted by this deadline will not be considered for the 2022 season.



# 2022/23 IFMP Timelines

Activity	Proposed Timelines
Release of DFO IFMP Planning Letter and timelines for 2022/23 season	December 3, 2021
Salmon Post Season Review Meetings All First Nations and stakeholders invited to attend.	Northern – December 2-3, 2021 Southern - December 15, 2021
2022 Salmon Outlook All First Nations and stakeholders invited to attend.	December 16, 2021
Deadline for new CSAF proposals	January 27, 2022
Meetings to review and discuss potential changes to IFMPs and opportunity for focussed discussion on key IFMP issues	Fraser Forum – January 18-20 2022 Northern IHPC – February 2, 2022 Southern IHPC – February 8, 2022
Draft IFMPs released for public review & comment	February 24, 2022
Meetings to review draft IFMP	Fraser Forum – March 1-3, 2022 Northern IHPC – March 9, 2022 Southern IHPC – March 10, 2022
2022 Revised Salmon Outlook	April 5, 2022
Deadline to submit comments on draft IFMP	April 15, 2022
Final Meetings for discussion on IFMP feedback	Fraser Forum – Apr 12-14, 2022 Full IHPC – May 4-5, 2022
Target for public release of salmon IFMP	June 30, 2022



# BACKGROUND SLIDES:



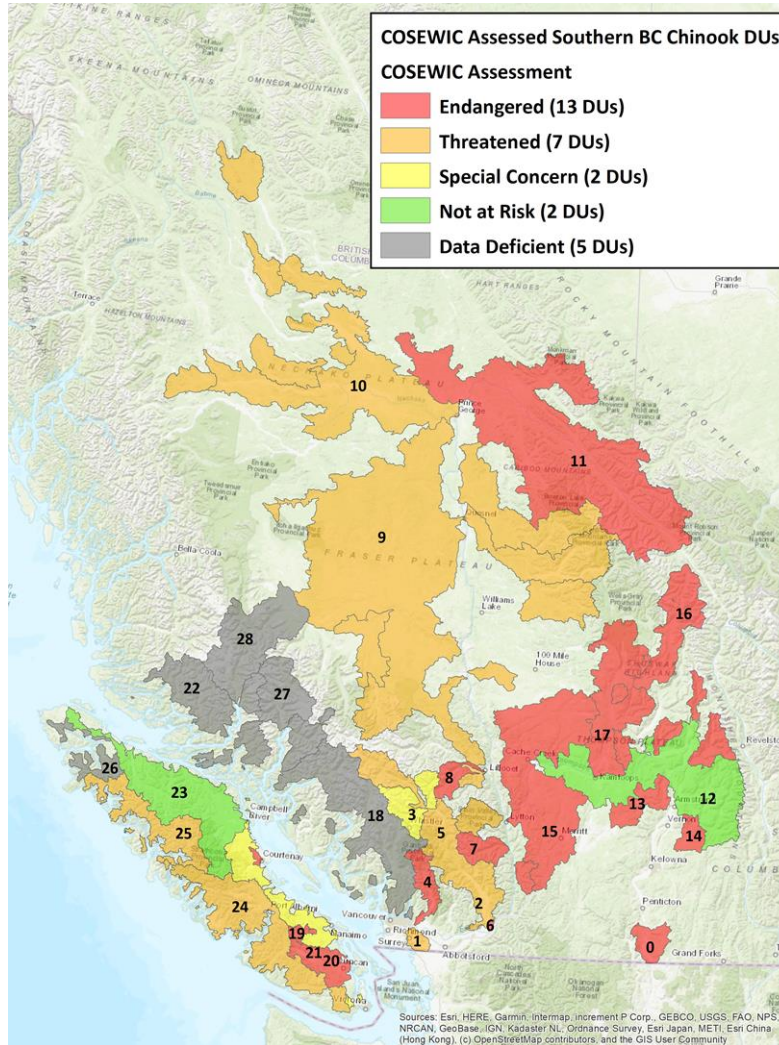
### 3. Fraser Chinook 2019 and 2020 Results – Fishery Mortalities

Management Unit (indicator)	2014-2018 Avg. CDN Fishery Mortalities (CWT)	2019 CDN Fishery Mortalities (CWT)	2019 CDN Fishery Mortality Index (Recon + GSI)*	2020 CDN Fishery Mortalities (CWT)	2020 CDN Fishery Mortality Index (Recon + GSI)*
Spring 4 <sub>2</sub> (Nicola)	18.2%	3.5%	6.0%	23.1%	4.5%
Spring 5 <sub>2</sub>	n/a	n/a	6.6%	n/a	2.6%
Summer 5 <sub>2</sub>	n/a	n/a	14.9%	n/a	12.8%
Summer 4 <sub>1</sub> (L. Shuswap)	27.6%	13.5%	32%	13.8%	24%
Fall 4 <sub>1</sub> (Harrison)	22.5%	22.2%	18.0%	14.9%	19%

\* Table of detailed Recon+ GSI results is in the appendix and a memo will be available for post-season meetings in December



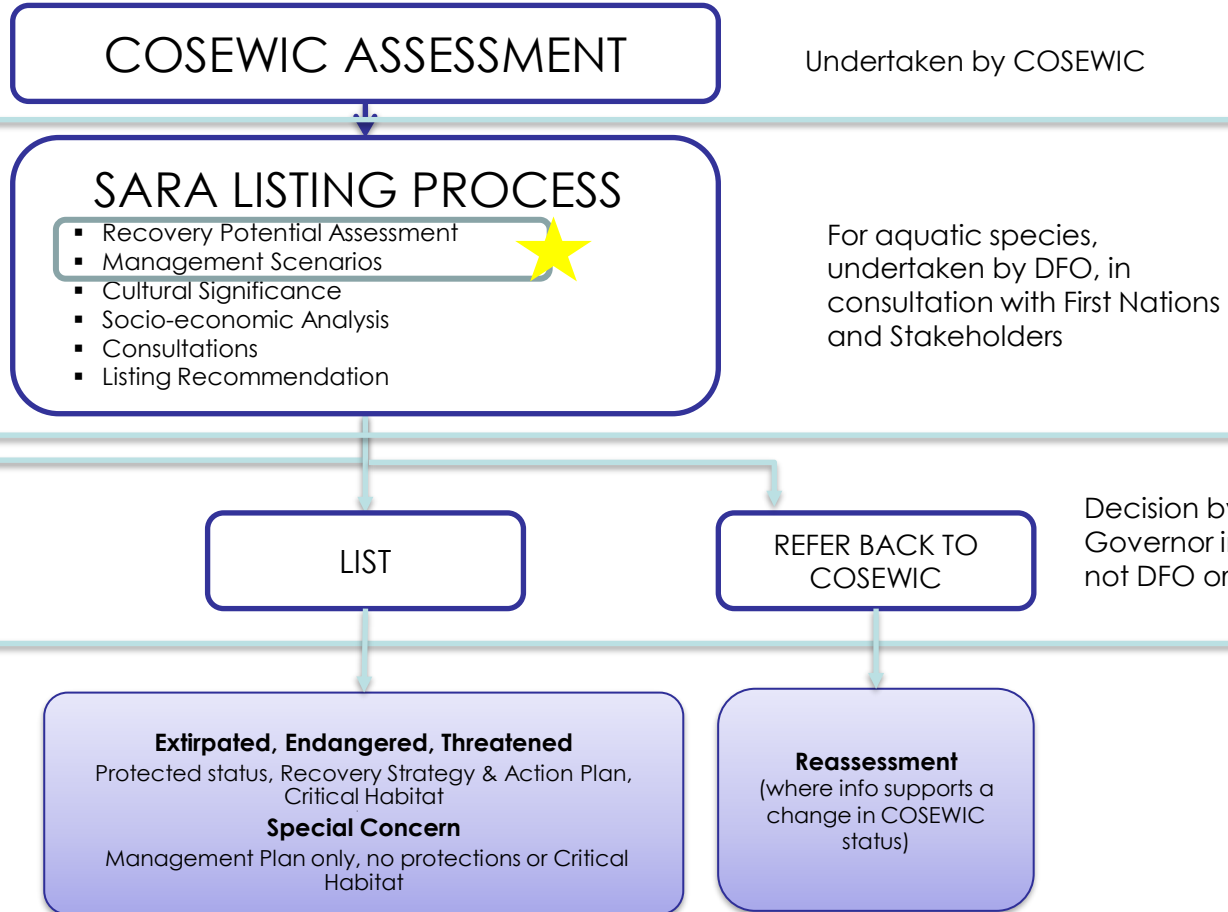
# COSEWIC Status of Southern BC Chinook DUs



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



# SARA Listing Process



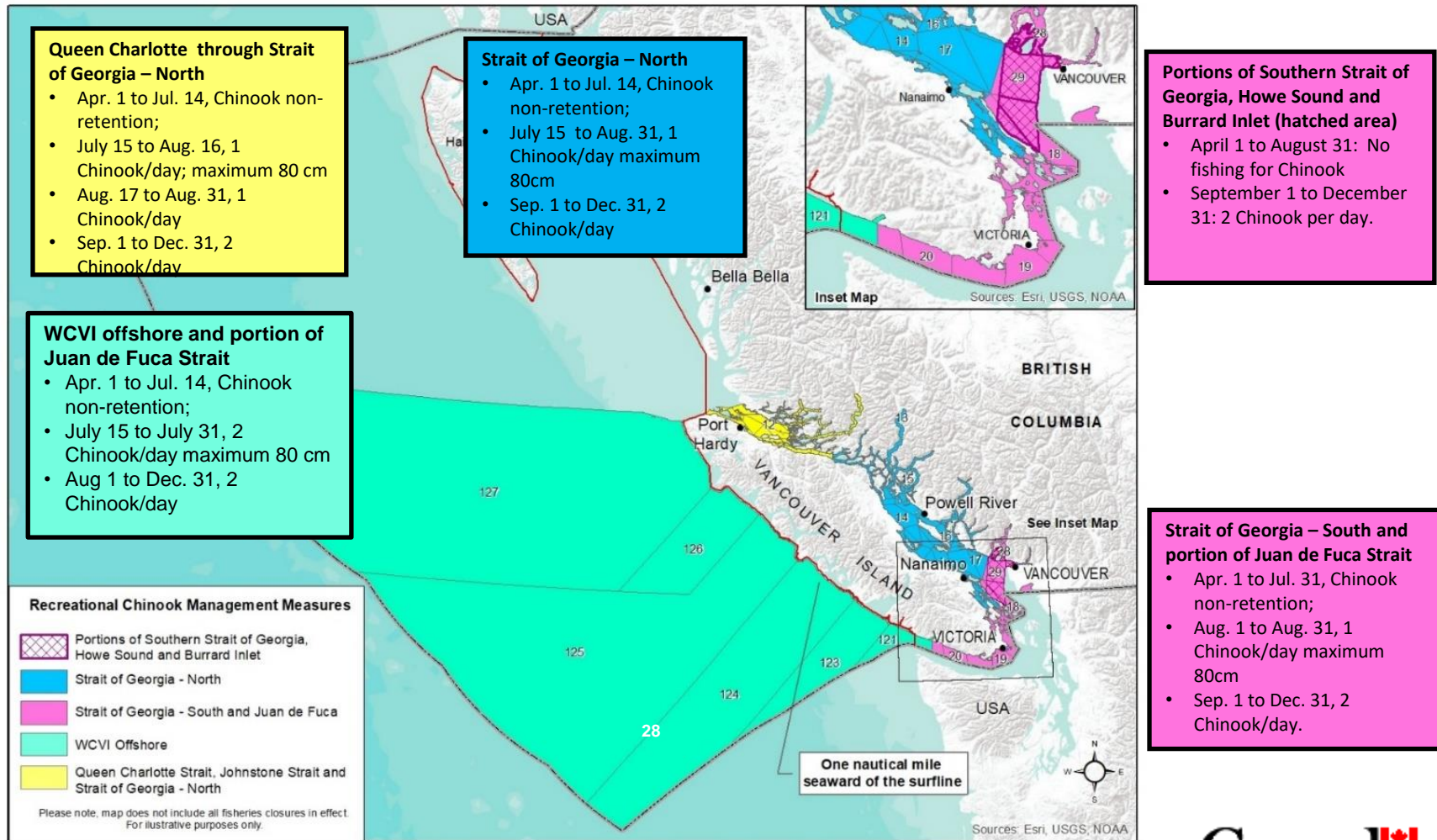


# SARA Context – Default Listing Position

- DFO will advise the List be amended for a species as assessed by COSEWIC, unless there is a Compelling Rationale not to do so.
- When providing Do Not List Advice, DFO must:
  - Provide Compelling Rationale
  - Create and implement work plan if DFO will undertake incremental activities
  - Report on work plan progress after 5 years.
- Compelling Rationale must address:
  - Alternative recovery approach and expected outcomes in absence of listing
  - Net benefits to Canadians of DNL decision.
- Compelling Rationale is developed in consideration of multiple sources of information including:
  - COSEWIC Assessment, Recovery Potential Assessment, consultation results, approved management scenarios and their impacts, analysis of costs and benefits.
- <http://www.dfo-mpo.gc.ca/species-especes/publications/sara-lep/policy-politique/index-eng.html>



# 2021 Recreational Chinook Management Measures



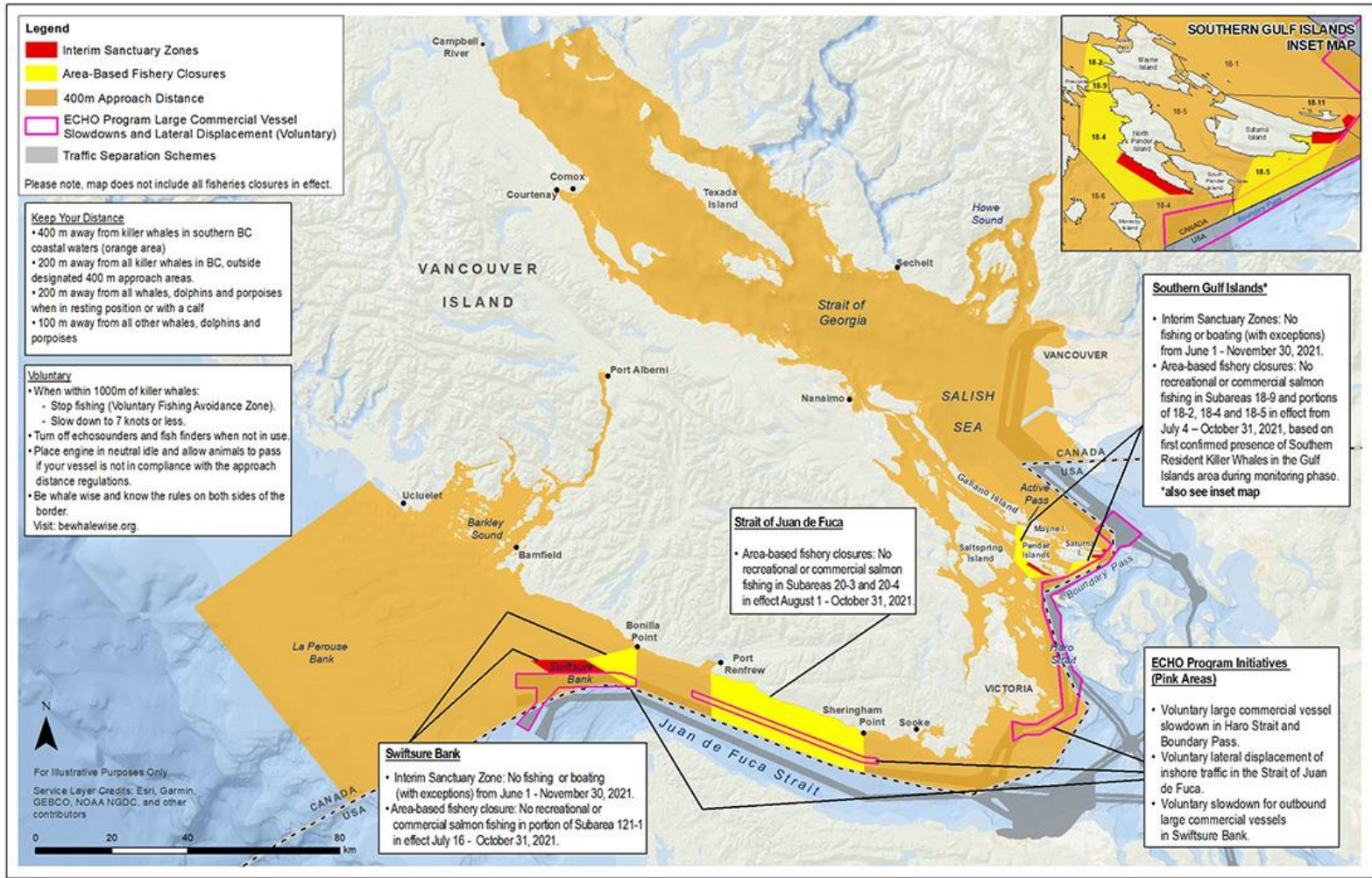


# Southern Resident Killer Whale

- Southern Resident Killer Whales are endangered – **only 73** remaining.
- **Human caused factors** are negatively affecting Southern Resident Killer Whales, and their habitat and prey.
- For the **protection and recovery of Southern Resident Killer Whales**, the Government of Canada is **collaborating** with Indigenous groups, stakeholders and other governments, including the Province of BC and the US.
- Overall goal is to ensure the **long-term viability** of resident killer whale populations by achieving and maintaining demographic conditions that **preserve their reproductive potential, genetic variation and cultural continuity**.
- Enhanced **management measures** have been put in place since 2018 to **address the primary threats to their recovery**, including reduced prey availability and physical and acoustic disturbance.



# 2021 Southern Resident Killer Whale Management Measures





## Southern Resident Killer Whale – 2022 Planning

- The Government of Canada will be reviewing the suite of 2021 management measures and discussing potential adjustments to measures with Indigenous groups, the Southern Resident Killer Whale Indigenous and Multi-Stakeholder Advisory Group and Technical Working Groups, and key stakeholders.
- Potential fishery management measures for 2022 will be designed to support food availability and reduce physical and acoustic disturbance in key Southern Resident Killer Whale foraging areas.
- Canada intends to ensure that any updates to actions for the 2022 season can be implemented by spring 2022 to coincide with the return of Southern Resident Killer Whales in typically greater numbers to the Salish Sea.