2024 MANAGEMNT INTERIOR FRASER COHO

FORUM 3 - KAMLOOPS

TUESDAY APRIL 9, 2024

Agenda

- Pacific Salmon Treaty Status Review
- Coho Mortality Tables
- Summary of 2014 management and impacts
- Future Fisheries Planning
- Rebuilding Plan

Pacific Salmon Treaty Status Review

- Under the Pacific Salmon Treaty (PST) Coho are managed through 12 management units (MUs).
  - Three in Canada: Strait of Georgia Coho, Lower Fraser Coho, Interior Fraser Coho (IFC).
  - Nine in the US.
- IFC is the only Canadian MU with sufficient data to assign a status.
  - Projects funded through the Southern Endowment Fund to assess the other Canadian MUs are currently underway.
- The CoTC uses the Fishery Regulation Assessment Model (FRAM) to identify and review stock status by calculating pre- and post-season fishery related mortalities.
  - Annual catches and impacts are calculated based on a base period that summarizes CWT information.

Pacific Salmon Treaty Status Review

- IFC has been in a *Low* status for many years.
- To move into the *Moderate* status, two conditions must be met:
  - Three consecutive years of between 3%-6% survival.
    - This condition has not been met.
  - Three consecutive years of half of subpopulations in each CU > 1,000; or Moderate Aggregate MU escapement objective met.
    - This condition has been met since 2020

Return Year	CWT Survival	Moderate PST Survival Goal Met in 3 Years?
2015	0.7%	No
2016	1.3%	No
2017	1.0%	No
2018	1.4%	No
2019	1.6%	No
2020	1.9%	No
2021	3.2%	No
2022	1.7%	No

*the 2023 survival estimate will be available in May

2022 Coho Mortality Tables

- An ER report is produced annually by the CoTC and presented to the Southern Panel for review.
- FRAM results are summarized for all MUs with sufficient data. In Canada, that includes only Interior Fraser Coho.
- The report summarizes data from 2 years previous.
  - Data from Coded Wire Tag (CWT) recoveries are available in US fisheries two years after.
  - i.e., the 2022 report was developed for the February 2024 PST meetings.
- Report includes three tables:
  - Table 1 – Summary pre- and post-season ER, escapement, and abundance.
  - Table 2 – ER by country compared to pre-season plan.
  - Table 3 – Summary of ER distribution by fishery for each country.

2022 Coho Mortality Tables

- Pre-season modelled ERs are the result of US and Canadian fishery planning processes.
- ER represents the sum of US and Canadian ER on each Management Unit
  - For IFC 10% for Canada and 10% for US.
- Post-season data is generated from FRAM

Table 1. From 2022 Coho Technical Committee Annual Report.

	Pre-Season total ER			Post-Season total ER			Escapement		Abundance (Ocean Age-3)	
Management Unit	Status	Cap	Model	Status	Cap	Model	Pre	Post	Pre	Post
Lower Fraser			16.0%			10.3%				
Interior Fraser	L	20.0%	14.4%	L	20.0%	12.4%	71,943	70,201	84,020	80,129
Georgia Strait			10.9%			8.8%				
Skagit	A	60.0%	43.2%	A	60.0%	25.6%	45,869	92,298	80,810	124,042
Stillaguamish	A	50.0%	36.1%	A	50.0%	9.9%	16,017	53,820	25,053	59,711
Snohomish	M	40.0%	33.7%	M	40.0%	8.1%	42,871	85,683	64,621	93,201
Hood Canal	M	45.0%	44.3%	M	45.0%	54.1%	11,350	9,189	20,368	20,007
US Strait JDF	L	20.0%	10.9%	M	40.0%	7.7%	6,519	16,975	7,319	18,396
Quillayute	A	49.7%	37.4%	A	61.3%	21.7%	7,842	12,744	12,525	16,266
Hoh	A	57.6%	53.6%	A	82.9%	30.4%	2,187	8,136	4,712	11,686
Queets	A	68.3%	36.3%	A	67.4%	32.0%	11,673	12,117	18,324	17,811
Grays Harbor	A	70.7%	50.2%	A	55.4%	28.8%	60,210	56,534	120,833	79,356

2022 Coho Mortality Tables

IFC Summary of table 2 From 2022 Coho Technical Committee Annual Report.

	Pre-Season				Post-Season			
Country	**Status**	**Cap**	**Modeled**	**Unused**	**Status**	**Cap**	**Modeled**	**Unused**
US	Low	10%	9.5%	0.5%	Low	10%	6.4%	3.6%
Canada	Low	10.5%	4.6%	5.8%	Low	10%	5.8%	7.8%

Pre-season, US unused ER is added to Canadian cap

Post-season, US unused ER is added to Canadian unused

- Domestically, Canadian fisheries are managed to limit mortality to between 3-5% rather than the 10% outlined in the PST.
- In 2022, both Canada and the US post-season ER was below the 10% cap.

2014 Management and Impacts

- In 2014, the Department consulted on an approach to allow additional impacts to IFC during Fraser Sockeye dominate year.
  - Permit additional flexibility during Sockeye fisheries.
  - Three options were developed:
    - Status Quo
    - Managing IFC up to the 10% ER cap in a *Low* status.
    - Managing IFC above the 10% ER cap in *Low* status.
- In 2014, the Department implemented an increase in the allowable exploitation rate permitted on Interior Fraser Coho from 3% to up to 16% for the 2014 fishery only.
  - This approach was intended to provided additional flexibility to manage abundant returns of Fraser River Sockeye and permitted additional fisheries where by-catch or incidental release mortalities of Coho occur.

2014 Management and Impacts

Summary of table 3 from the 2014 annual report and Canadian breakdown calculations.

Canadian				US		
Commercial (including EO)	**Recreational**	**Food Social and Ceremonial**	**Test fishery**	**Southern US**	**Alaska**	**Total**
14.9%	10.5%	1.4%	0.1%	8.0%	0.3%	35.3%

- 2014 escapement was estimated at 15,200 Coho.
- 2014 cohort abundance was estimated at 22,300 Coho.
- Although ER were high due to a low return, actual catch was estimated at ~7,000 fish.
- Majority of impacts were in the South Coast marine recreational fisheries (~9.1%) and Area E Sockeye-directed commercial fisheries (~8.2%).

Future Fisheries Planning

- In response to feedback received in the 2023 post season, the Department sought feedback on whether to permit increased FSC harvest of Interior Fraser River Coho above current 3-5% domestic ER target, while still falling under 10% harvest cap for low status described in Pacific Salmon Treaty.
  - To date, the only proposal that has been received is from Five Nations for a change in sales fishery
  - Several Nations in the Interior also may consider harvest of IFR Coho where assessment indicates there is sufficient abundance in local streams
- Existing tools do not allow for a detailed assessment of potential impacts from additional exploitation for domestic Coho stocks
  - Subsequently, any future fisheries changes will need to be precautionary in nature, and planned considering all Coho stocks

Future Fisheries Planning

- Five Nations proposal includes:
  - Allowing the sale of unmarked Coho bycatch during Chinook directed fisheries in the offshore WCVI prior to Sept 15
- Currently, the sale of unmarked Coho is permitted only after Sept 15
  - Retention of wild Coho for FSC is closed year-round in the WCVI Offshore Area
    - "All efforts and attempts shall be made to return all Wild Coho to the water alive and unharmed. After all efforts and attempts to return Wild Coho to the water alive and unharmed have been made, Wild Coho that are dead may be retained. All live Coho missing an adipose fin (with a healed over scar) may be retained while all those with an adipose fin shall be released"
- Existing Five Nations Fishery Management Plan has been extended for 90 days interim period pending completion of IRAFR agreement.
- Fraser First Nations have voiced a strong opposition to any fishing plans that increase ER of IFR Coho

Future Fisheries Planning

- FM has submitted a request for DFO Science to develop an improved suite of tools to aid in planning Coho fisheries
  - These tools would include projecting impacts of domestic fisheries would have on all Coho stocks (not limited to IFR Coho)
  - Incorporation of information from new assessment programs both for SoG and Lower Fraser Coho stocks

- Coho Planning tool would be developed through the CSAS process
  - Include participation from DFO Science, Resource Management, and collaboration with First Nations and other technical staff
- Objectives include:
  - Better inform fishery proposal evaluations pre-season
  - Explore fisheries scenarios if/when IFC MU reaches moderate status
  - Plan domestic fisheries effectively for Coho
  - Improve post-season accounting

- This will be several years in the making.
  - Additional information on the fishery planning tool is coming in the near future!

Appendix Slides

IFC Short Term Escapement Goal

Return Year	Short Term Sub Pop Goal*		Short Term Escapement Proxy Goal	Natural Origin Escapement	Goal Met in Three Consecutive Years
2015	No		26,224	11,651	No
2016	Yes		32,041	64,163	No
2017	No		36,977	23,651	No
2018	Yes	or	35,701	33,044	No
2019	Yes		34,625	41,393	No
2020	Yes		34,207	68,130	Yes
2021	Yes		34,127	78,270	Yes
2022	Yes		30,426	70,311	Yes

*three consecutive years of greater than 1,000 in half the sub populations within a CU in each of the 5 CUs.

IFC Return Data

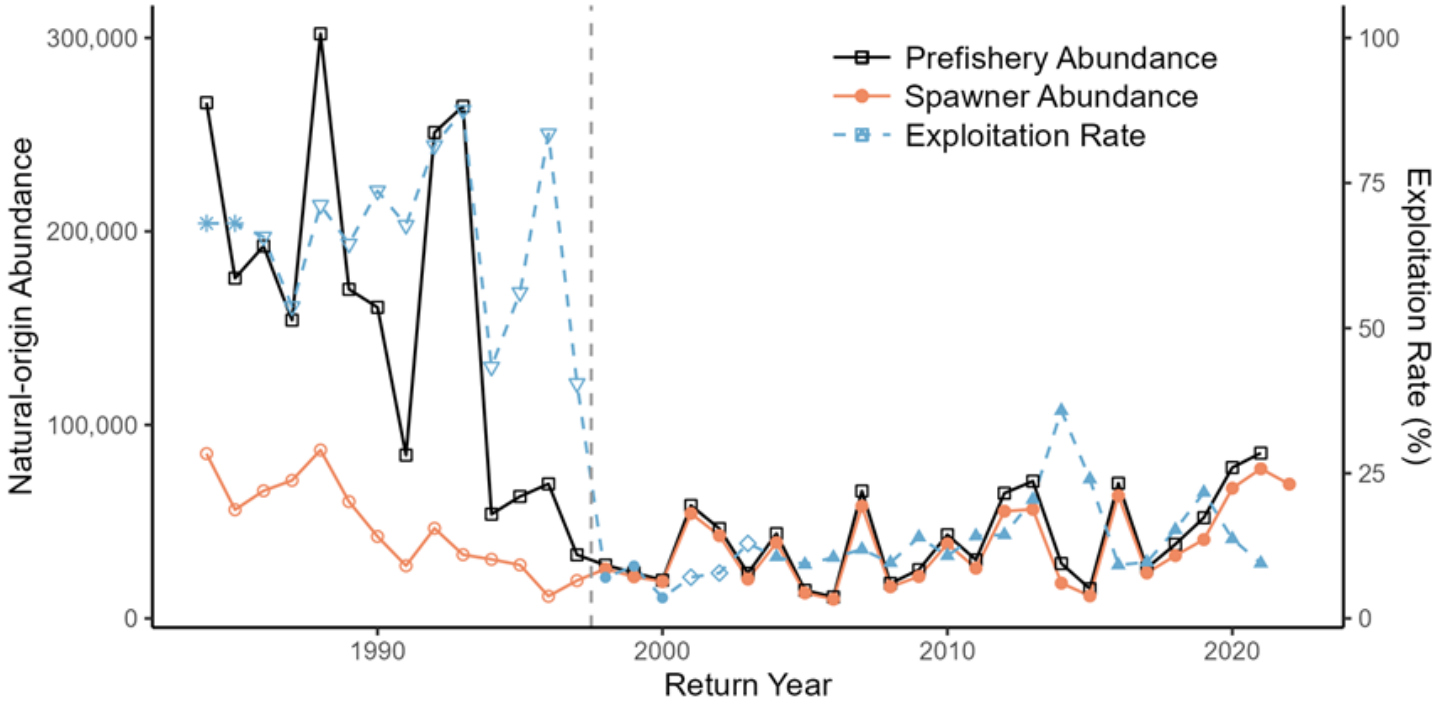

Figure 1. Interior Fraser Coho natural-origin spawner abundance (red line series, 1984-2022) and prefishery abundance (black line series, 1984-2021) uses the left axis and exploitation rate (blue dashed line series, 1984-2021) uses the right axis. Escapement methodology quality changed starting in 1998 (dashed vertical line), which resulted in an increase in the number of systems being surveyed and a more rigorous methodology. Prior 1998, spawner abundance may be considered more relative (open circles, 1984-1997) than absolute as many system's estimates are infilled or use unknown survey quality, while after 1997 it should be considered as more absolute abundance (filled circles, 1998-2022). Recent exploitation rate estimates have been made using the Fisheries Regulatory Assessment Model (FRAM 2004-2021, filled triangles), while historic estimates have varied between the Canadian Spreadsheet Model (CSM 2001-2003, open diamonds), Canadian genetic samples and US coded-wire-tag samples (GSI + CWT direct 1998-2000, filled circles), CWT direct for both countries (CWT direct 1986-1997), and two years of infilled estimates (average of 1986-1987, 1984-1985, asterisks). Note that 2022 does not have a harvest estimate available at the time the figure was made; the harvest estimate is not 0. Prefishery abundance (open squares) quality and consistency is dependent on both spawner abundance and exploitation rate methodology per year.