

JOINT TECHNICAL WORKING GROUP UPDATE

April 9th, 2024

Kelsey Campbell

OUTLINE

Purpose – provide a high-level overview of material presented, discussed, and outcomes from the JTWG meeting April 8th, 2024

- Mark-selective fishery review – Nicole Frederickson
- Interior Fraser Coho data analysis – Michael Arbeider and Maddie Thomson
- Fraser River Chum presentation review – All
- Fraser River Chinook Run Reconstruction file review – Maddie Thomson
- Chinook FMI JTC memo – Aidan Fisher and Brittany Jenwein
- JTWG Tier I discussion

MARK -SELECTIVE FISHERY REVIEW

An overview of some of the mark-selective fishery data highlighting Fraser Chinook impacts and implications.

- **IMAWG update on SC marine rec & MSF fisheries.** Detailed backgrounder including evaluation/results of individual pilots and key issues to consider.
- Purpose: to create opportunities with conservation benefits to unmarked (wild) CH.
 - Considerations: mark rates, indicator stocks, release mortality, associated costs.
 - Review of MSF information in Areas 12,13,15, 16, 20, 17-19.

Key discussion points

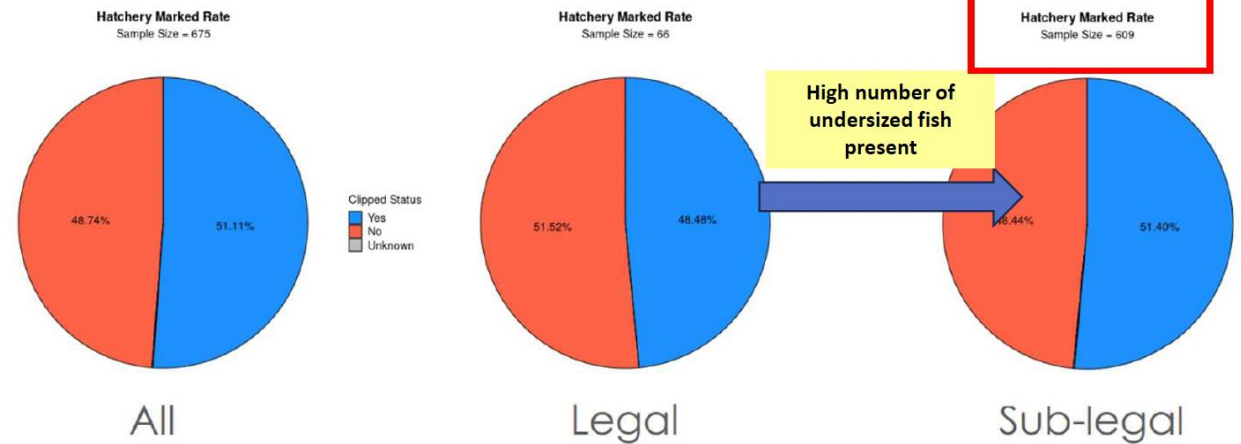
- Request for DFO to share expanded sampling results and expansion method.
- Concern that required sampling for defensible evaluation of MSF impacts on Fraser stocks of concern not feasible.
- SoG non-retention fisheries may have significantly more impacts.
- Question re new Area 28 (Howe Sound) sampling (vs improving for existing areas).

MSF CONTINUED

- Indications of:
 - Low mark rates
 - High encounters of sub-legals
 - Low sample rates
 - Assumptions have changed

2023 REFERENCE FISHERY

Areas 17-19 - Saanich Inlet/Gulf Islands Reference Fishery Chinook Mark Rate



INTERIOR FRASER COHO DATA ANALYSIS

Review of available data related to Interior Fraser Coho and how the data influences management.

Coho Update: DFO overview of PST Chapter 5, FRAM model and recent ER calculations, including requested details for 2014 (expanded access to allow sockeye fisheries; added rec access, consistent with SAP).

Key discussion points:

- Current tools do not allow for a detailed assessment of potential impacts of additional exploitation of domestic stocks. Therefore, must be precautionary and consider all coho stocks.
- Request for FN involvement in setting ToR for DFO's proposed coho work on new tools and CSAS review.
- Only 5 Nations have a formal proposal so far. LFFA also plans one.
- Questions about evaluation process and suggestion for FSMB and JTC role.
- ER caps are for wild fish only (selective terminal fisheries would not count to those).
- IFR coho caps and window closure provide protections for other stocks — important to understand implications of lifting of current restrictions.

CHINOOK RUN RECONSTRUCTION

Fraser Chinook Run Reconstruction Review: DFO reviewed the RR file structure, how to use the files and requested specific questions to cover in the planned June “deep dive” session.

Key discussion points:

- Interest in review of assumptions, limitations and uncertainty in the model.
- Suggestion to use a single stock example to illustrate the model – start on spawning grounds and travel back to river mouth.
- Other questions: infilling, shifting migration timing (& implications of wrong assumptions there), US model, how the RR is used in management and to seed other models/outputs (FMI index).
- Further questions to co-chairs. Proposed that JTC and JTWG coordinate on next steps.

FRASER RIVER CHUM PRESENTATION REVIEW

Review the Fraser Chum deck that will be presented by Jeff Radford at the Forum.

2024 Management: Chum & Steelhead. Key change for 2024 — rec starts with non-retention pending in season run size. DFO shared requested docs on steelhead window rationale.

Key discussion points:

- Details on recreational retention-opening criteria unclear.
- Concerns about protecting spawning chum in low water, and resolving who's responsible for protecting spawning salmon from fishing, jet boats and vehicles in low water.
- Planning underway by DFO's drought response team, need for more proactive/early/coordinated planning, FN involvement.

CHINOOK FMI JTC MEMO

Presentation the JTC memo that summarizes information from the FMI analysis with recommendations to the FSMB.

Review of results, uncertainties, and recommendations.

Key discussion points:

- FSMB working on protocols to facilitate sharing of such memos in future.
- Questions about new FSAR process; link to participate in Spring sprint week. Brittany to summarize several questions about FSAR process for DFO colleagues to address.

NEXT MEETING

Additional JTWG meeting will cover:

- Deep dive into the CH Run Reconstruction
- MSF Genetic Stock ID result review
- Meeting to be held in June – date TBD (tentatively June 24th)
- Likely virtual only.

Thanks to all supporting JTWG members for participating and sharing your work!

FORUM TIER I DISCUSSION PROMPTER – DAY I

- Sockeye
 - Window closure duration
 - Escapement options
 - Fisheries planning (sharing of limited impacts)
 - Environmental conditions
 - Emergency enhancement efforts and 2nd year of Big Bar brood impacts for 2024 returns
- Interior Fraser Coho
 - Exploration of increasing ER

2024 SOCKEYE FORECAST

Run timing group Stocks	Forecast Model	Probability that Return will be at/or Below Specified Run Size				
		10%	25%	50%	75%	90%
Early Stuart	<i>Ricker (Ei)</i>	80	100	200*	300	400
Early Summer Total		58,000	93,000	159,000	281,000	465,000
<i>Total excluding misc. stocks</i>		37,000	66,000	121,000	226,000	379,000
Bowron	RickerCyc	400	700	1,000*	2,000	4,000
Upper Barriere (Fennell)	PowerBasic4Sibling5	1,000	3,000	5,000	12,000	23,000
Gates	<i>Ricker (Pi)</i>	9,000	15,000	27,000	47,000	76,000
Nadina	Ricker(ErDneak)4					
	<i>Sibling5</i>	18,000	33,000	65,000	127,000	216,000
Pitt	LarkinBasicCyc	7,000	10,000	16,000	24,000	36,000
Scotch	<i>Larkin</i>	1,000	3,000	5,000	10,000	18,000
Seymour	<i>Ricker (Pi)</i>	700	1,000	2,000	4,000	7,000
Misc (EShu)	<i>R/S</i>	100	100	700*	1,000	2,000
Misc (Taseko)	<i>R/S</i>	10	20	70*	90	100
Misc (Chilliwack)	<i>Ricker4Sibling5</i>	20,000	26,000	34,000	48,000	71,000
Misc (Nahatlatch)	<i>R/S</i>	500	900	3,000	6,000	12,000
Summer Total		101,000	192,000	379,000	774,000	1,554,000
<i>Total excluding misc. stocks</i>		101,000	192,000	379,000	772,000	1,551,000
Chilko	RickerCyc4Sibling5	51,000	96,000	176,000	317,000	564,000
Late Stuart	<i>R1C</i>	2,000	5,000	12,000	33,000	80,000
Quesnel	<i>R2C</i>	300	900	3,000	9,000	26,000
Stellako	R2C4Sibling5	25,000	39,000	65,000	107,000	169,000
Harrison	<i>TSA3Sibling4</i>	17,000	41,000	106,000	277,000	663,000
Raft	PowerBasicCyc	6,000	10,000	17,000	29,000	51,000
Misc (N. Thomp. Tribs)	<i>R/S</i>	50	80	200*	500	700
Misc (N. Thomp. River)	<i>R/S</i>	50	80	200*	500	700
Misc (Widgeon)	<i>R/S</i>	20	60	80*	1,100	1,600
Late Total		8,000	15,000	29,000	66,000	154,000
<i>Total excluding misc. stocks</i>		8,000	15,000	29,000	63,000	150,000
Cultus	PowerLux(Pi)	40	70	100*	300	600
Late Shuswap	<i>Ricker(Pi)4Sibling5</i>	100	500	2,000	10,000	42,000
Portage	<i>Ricker (Pi)</i>	30	80	200*	600	1,000
Weaver	RickerCyc	400	700	2,000	5,000	19,000
Birkenhead	<i>Ricker (Ei)</i>	7,000	13,000	24,000	46,000	87,000
Misc Harrison/Lillooet	<i>R/S</i>	50	100	200*	3,000	4,000
TOTAL SOCKEYE SALMON		167,000	299,000	567,000	1,121,000	2,173,000
<i>Total Sockeye excluding misc. stocks</i>		147,000	272,000	529,000	1,061,000	2,081,000

2024 ESCAPEMENT OPTIONS

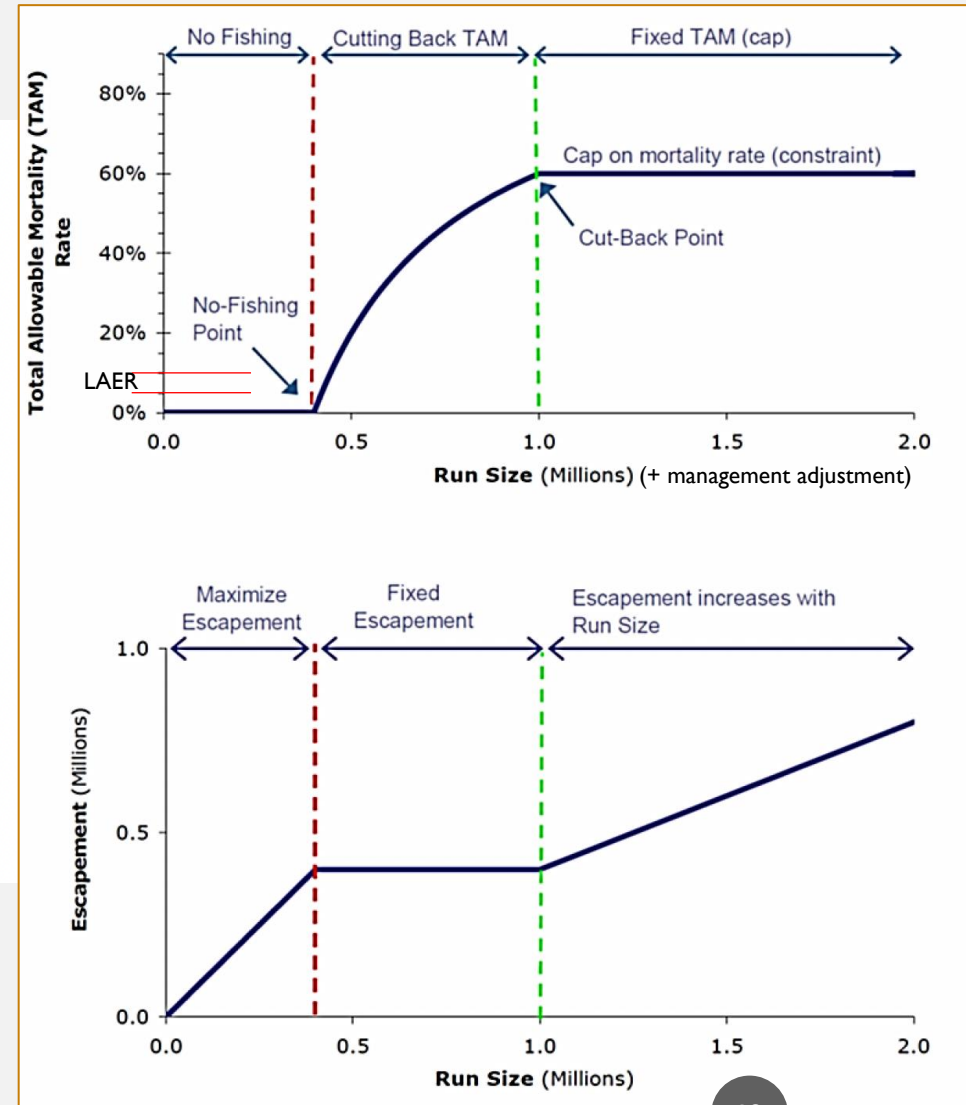
Option 1- Brood Year (2020) Escapement Plan

Management Unit	Harvest Rule Parameters				Pre-season pMA @p50
	Low Abundance ER (LAER)	TAM Cap	Lower Fishery Reference Point	Upper Fishery Reference Point	
Early Stuart	10%	50%	108,000	216,000	1.17
Early Summer (w/o	10%	50%	100,000	200,000	0.59
Summer (w/o misc)	10%	50%	640,000	1,280,000	0.09
Late (w/o misc)	10%	50%	300,000	600,000	0.54

Option 2- Reduced LAER Escapement Plan

Management Unit	Harvest Rule Parameters				Pre-season pMA @p50
	Low Abundance ER (LAER)	TAM Cap	Lower Fishery Reference Point	Upper Fishery Reference Point	
Early Stuart	5%	20%	108,000	135,000	1.17
Early Summer (w/o	5%	50%	100,000	200,000	0.59
Summer (w/o misc)	10%	50%	640,000	1,280,000	0.09
Late (w/o misc)	10%	50%	300,000	600,000	0.54

Note: Blue cells emphasize changes between Option 1 and Option 2.



OPTION I – COMPARISON

Run timing group	Total Escapement Weighted		Comparisons @p10		Comparisons @p25		Comparisons @p50		Comparisons @p75		
	Stocks	Cycle Ave	Brood Years	Cycle Ave	Brood Year	Cycle Ave	Brood Year	Cycle Ave	Brood Year	Cycle Ave	Brood Year
Early Stuart		42,694	42	0%	478%	1%	957%	1%	1435%	2%	2153%
Early Summer		144,327	78,436	23%	42%	37%	68%	64%	117%	98%	180%
Bowron	16,248		312	1%	74%	2%	122%	4%	225%	7%	356%
Upper Barriere	7,609		899	10%	88%	20%	168%	40%	340%	77%	649%
Gates	10,541		7,109	49%	73%	82%	122%	147%	218%	224%	331%
Nadina	17,793		28,796	57%	35%	108%	67%	210%	130%	358%	221%
Pitt	32,946		3,968	13%	111%	20%	166%	31%	258%	42%	345%
Scotch	9,438		1,487	9%	58%	18%	112%	32%	204%	53%	337%
Seymour	33,602		959	1%	43%	2%	69%	3%	118%	5%	184%
Misc (EShu)	4,267		1,389	1%	4%	2%	6%	9%	27%	15%	45%
Misc (Taseko)	5,272		60	0%	17%	0%	17%	1%	67%	1%	67%
Misc (Chilliwack)	2,290		31,467	476%	35%	612%	45%	822%	60%	998%	73%
Misc (Nahatlatch)	4,321		1,991	7%	15%	12%	27%	37%	80%	64%	140%
Summer		667,166	179,461	12%	45%	23%	85%	45%	166%	89%	332%
Chilko	424,983		84,087	10%	50%	19%	96%	35%	175%	62%	315%
Late Stuart	46,043		7,687	3%	20%	8%	50%	22%	133%	60%	357%
Quesnel	17,655		4,949	2%	5%	4%	15%	14%	48%	43%	153%
Stellako	101,900		44,895	21%	47%	32%	73%	53%	121%	88%	199%
Harrison	63,665		32,507	17%	34%	42%	81%	108%	212%	282%	553%
Raft	5,987		4,561	89%	117%	140%	184%	236%	309%	405%	532%
Misc (N. Thomp. Tribs)	370		237	14%	21%	19%	29%	46%	72%	108%	169%
Misc (N. Thomp River)	5,916		224	1%	22%	1%	31%	3%	80%	7%	183%
Misc (Widgeon)	647		313	2%	3%	6%	13%	8%	16%	111%	230%
Late		445,337	12,270	1%	42%	2%	76%	4%	143%	8%	301%
Cultus	19,727		111	0%	9%	0%	18%	0%	27%	0%	63%
Late Shuswap	294,927		5,211	0%	1%	0%	2%	0%	10%	1%	46%
Portage	3,584		320	0%	3%	1%	6%	1%	16%	4%	41%
Weaver	27,986		1,480	0%	5%	1%	11%	2%	28%	5%	86%
Birkenhead	96,420		4,364	5%	115%	9%	203%	17%	376%	33%	718%
Misc. non-Shuswap	2,693		784	0%	1%	1%	4%	1%	5%	22%	77%

OPTION 2 COMPARISON

Run timing group	Total Escapement		Comparisons @p10		Comparisons @p25		Comparisons @p50		Comparisons @p75	
	Stocks	Weighted Cycle Ave Brood Years	Cycle Ave	Brood Year	Cycle Ave	Brood Year	Cycle Ave	Brood Year	Cycle Ave	Brood Year
Early Stuart	42,694	42	0%	478%	1%	957%	2%	1675%	2%	2392%
Early Summer	144,327	78,436	24%	45%	37%	68%	64%	117%	98%	180%
Bowron	16,248	312	1%	77%	2%	128%	5%	237%	7%	356%
Upper Barriere	7,609	899	11%	92%	21%	178%	42%	359%	77%	649%
Gates	10,541	7,109	52%	77%	87%	129%	156%	231%	224%	331%
Nadina	17,793	28,796	60%	37%	114%	71%	222%	137%	358%	221%
Pitt	32,946	3,968	14%	117%	21%	176%	33%	273%	42%	345%
Scotch	9,438	1,487	10%	61%	19%	119%	34%	215%	53%	337%
Seymour	33,602	959	1%	46%	2%	73%	4%	124%	5%	184%
Misc (EShu)	4,267	1,389	1%	4%	2%	6%	9%	29%	15%	45%
Misc (Taseko)	5,272	60	0%	n/a	0%	n/a	1%	n/a	1%	n/a
Misc (Chilliwack)	2,290	31,467	502%	37%	647%	47%	868%	63%	998%	73%
Misc (Nahatlatch)	4,321	1,991	7%	15%	13%	28%	39%	84%	64%	140%
Summer	667,166	179,461	12%	45%	23%	85%	45%	166%	89%	332%
Chilko	424,983	84,087	10%	50%	19%	96%	35%	175%	62%	315%
Late Stuart	46,043	7,687	3%	20%	8%	50%	22%	133%	60%	357%
Quesnel	17,655	4,949	2%	5%	4%	15%	14%	48%	43%	153%
Stellako	101,900	44,895	21%	47%	32%	73%	53%	121%	88%	199%
Harrison	63,665	32,507	17%	34%	42%	81%	108%	212%	282%	553%
Raft	5,987	4,561	89%	117%	140%	184%	236%	309%	405%	532%
Misc (N. Thomp. Tribs)	370	237	14%	21%	19%	29%	46%	72%	108%	169%
Misc (N. Thomp River)	5,916	224	1%	22%	1%	31%	3%	80%	7%	183%
Misc (Widgeon)	647	313	3%	6%	8%	16%	11%	22%	144%	297%
Late	445,337	12,270	1%	45%	2%	80%	4%	152%	8%	301%
Cultus	19,727	111	0%	9%	0%	18%	0%	27%	0%	63%
Late Shuswap	294,927	5,211	0%	1%	0%	2%	0%	10%	1%	46%
Portage	3,584	320	0%	3%	1%	6%	1%	16%	4%	41%
Weaver	27,986	1,480	0%	6%	1%	12%	2%	28%	5%	86%
Birkenhead	96,420	4,364	6%	122%	10%	214%	17%	376%	33%	718%
Misc. non-Shuswap	2,693	784	0%	1%	1%	5%	5%	17%	22%	77%

WINDOW CLOSURE

Proposed extended window closures to protect 60-70% of early-timed Early Summers including Bowron, Taseko, and Nadina that were impacted by Big Bar in both 2019 and 2020.

Areas	Start Date	End Date ~3 Weeks	End Date ~4 Weeks	End Date ~5 weeks
Areas 11 to 17, 19 to 21, 121 and 123 to 127	June 19	July 15	July 22	July 29
Areas 18 and 29	June 28	July 20	July 27	Aug 3
Steveston to Mission	June 28	July 20	July 27	Aug 3
Mission to Sawmill	June 30	July 22	July 29	Aug 5
Sawmill to Deadman	July 3	Jul 25	Aug 1	Aug 8
Deadman-Hixon	July 9	Jul 31	Aug 7	Aug 14
Hixon to Prince George	July 11	Aug 2	Aug 9	Aug 16
Prince George to Stuart River	July 13	Aug 11	Aug 11	Aug 18

INTERIOR FRASER COHO PST STATUS

- Still managed under the same framework that identifies the status based on marine survival rates and spawner abundance.
- Remains in Low status:
 - 20% ER cap (up to 10% CAN, 10% US)
 - Canada again implemented management potentially consistent with an ER of 3-5% in 2023

	Low	Moderate	Abundant
Survival (CWT Indicator Programs)	$S \leq 0.03$	Three consecutive years $0.03 < S \leq 0.06$	Three consecutive years $S > 0.06$
		and	and
Escapement	Monitored in CU's and subpops but no thresholds	Three consecutive years: · Half of subpops in each CU > 1000; or · Moderate Aggregate MU esc. objective	Three consecutive years: · All IFR subpops in each CU > 1000; or · Abundant Aggregate MU esc. objective
ER cap (US/Can)	0.20 (0.10/0.10)	0.30 (0.12/0.18)	0.45 (0.15/0.30)

INTERIOR FRASER COHO PST STATUS

Return Year	Short Term Sub Pop Goal*		Short Term Escapement Proxy Goal	Natural Origin Escapement	Goal Met in Three Consecutive Years
2015	No	or	26,224	11,817	No
2016	Yes		32,041	63,876	No
2017	No		36,977	23,837	No
2018	Yes		35,701	33,138	No
2019	Yes		34,625	41,255	No
2020	Yes		34,207	68,612	Yes
2021	Yes		34,127	78,920	Yes
2022	Yes		TBD	**70,300	Yes

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

**2022 Natural-origin escapement still under review

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	1.8%	No
2021	3.2%	No
2022	*1.7%	No

*2022 survival still under review

INTERIOR FRASER COHO 2024 MANAGEMENT CONSIDERATIONS

- “Interest from various groups to explore increasing this ER while remaining under the 10%”
- Very high-lever look in IFMP:
 - Window closure will still be in place for non-selective gear, however;
 - Seeking feedback on potential increased ER on FSC directed harvest or as bycatch.

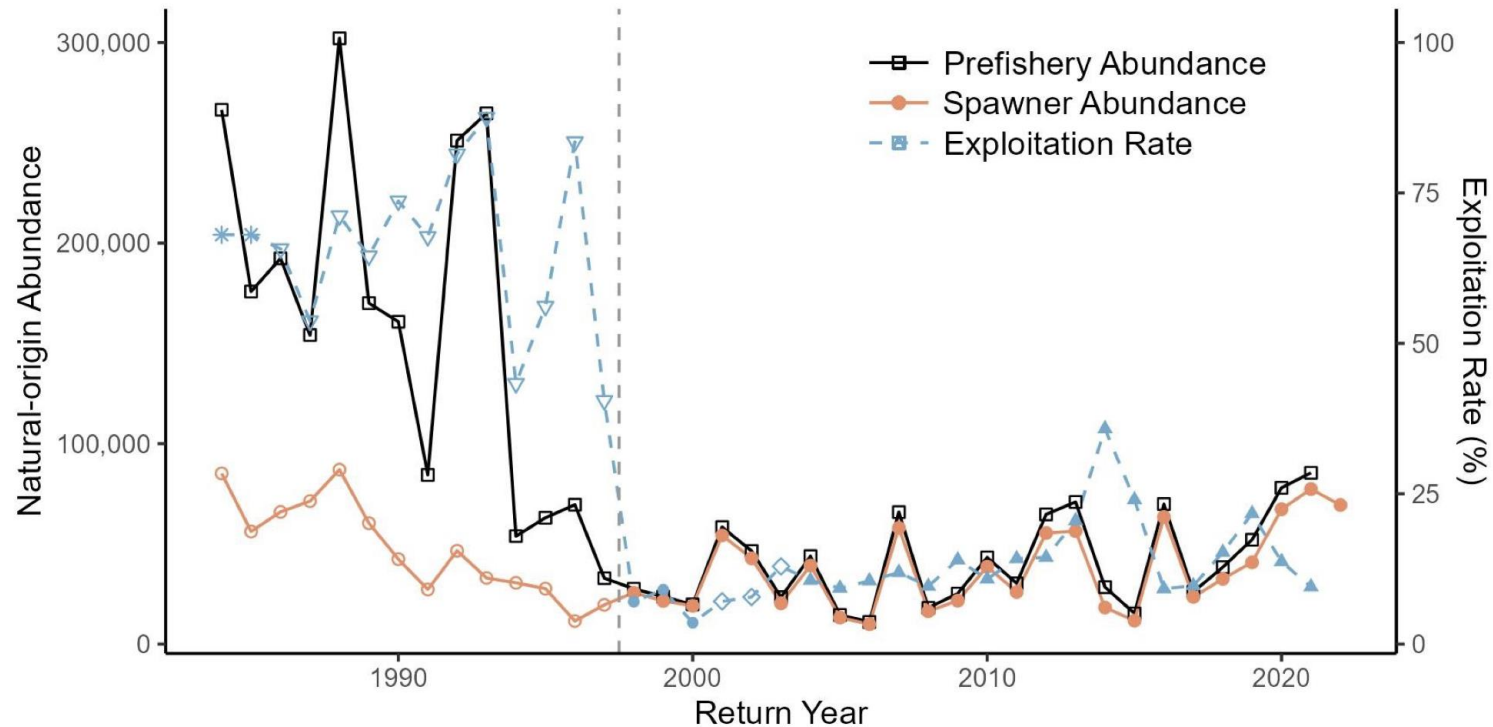
How does everyone feel about this?

If appropriate, where and how?

What is the feedback loop on consultation for this?

Decision process – FSMB?

Interior Fraser River Coho – Total Abundance



- Interior Fraser Coho natural-origin spawner abundance (orange line series, 1984-2022) and pre-fishery abundance (black line series, 1984-2021) uses the left axis and total Canadian and US 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.
- 2022 Natural-origin escapement still under review
- 2023 Pre-fishery Abundance forecast: 87,000 (80% interval 74,538-130,525)