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# Fraser Salmon Management Board

## Sockeye Escapement Plan Options

Presentation to the Fraser Forum  
April 9, 2024

# Outline

- Escapement Plan Options
- Escapement Plan Review by Run-Timing Group
- Window Closures
- Discussion Questions

# Final Draft IFMP Wording

For 2024, given the low forecasted returns and resulting limited harvest opportunities, the Department is seeking input on 2 proposed escapement options and their respective components (Table 13.5-7 a & b). **The Fraser Salmon Management Board (FSMB) supports inclusion of these 2 options with the understanding that other options can be explored via the IFMP development process.** Consistent with previous years the Department will consider all input provided, including alternative options, to inform the final escapement plan. The final escapement plan that will be included in the IFMP may differ from the options described in this draft IFMP based on input received.

# Escapement Plans | Option 1

- Option 1 is the Brood Year (2020) Escapement Plan

## 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

- Pros: added flexibility in bycatch mortality during potential earlier timed, non-sockeye harvest fisheries and test fisheries.
- Cons: may adversely affect stock recovery, particularly if return at lower end of the forecast and/or LAER limits approached.

# Escapement Plans | Option 2

- Option 2 is a Precautionary Escapement Plan with reduced LAERs for Early Stuarts and Early Summers and reduced TAM Cap for Early Stuarts.

## 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

- Pros – conservation approach with added protection for Early Stuarts and Early Summers while allowing some flexibility on Summer and Late mortality to occur in non-sockeye directed fisheries (e.g., summer Chinook).
- Cons – may constrain earlier timed non-sockeye fisheries, particularly if stocks return at the lower end of the forecast range.

# Escapement Plans | Early Stuart

Option	LAER	TAM Cap	Lower Fishery Ref. Point	Upper fishery Ref. Point
1	10%	50%	108,000	216,000
2	5%	20%	108,000	135,000

**Table 1:** Detailed allowable exploitation rates and projected spawners over the forecast range for the two escapement plan options for Early Stuart.

Early Stuart	forecast	p10	p25	p50	p75	p90
		<b>76</b>	<b>115</b>	<b>181</b>	<b>284</b>	<b>421</b>
Option 1	Max. Allowable ER	<b>10%</b>	<b>10%</b>	<b>10%</b>	<b>10%</b>	<b>10%</b>
	Allowable Harvest	<b>57</b>	<b>94</b>	<b>157</b>	<b>222</b>	<b>270</b>
	Projected S (after MA)	200	400	600	900	1,100
	Proj. S as % BY S	667%	1333%	2000%	3000%	3667%
	Proj. S as % cycle S	0%	1%	1%	2%	3%
Option 2	Max. Allowable ER	<b>5%</b>	<b>5%</b>	<b>5%</b>	<b>5%</b>	<b>5%</b>
	Allowable Harvest	<b>29</b>	<b>47</b>	<b>78</b>	<b>111</b>	<b>135</b>
	Projected S (after MA)	200	400	700	1,000	1,200
	Proj. S as % BY S	667%	1333%	2333%	3333%	4000%
	Proj. S as % cycle S	0%	1%	2%	2%	3%
	Incidental Harvest (LAER)					
	Directed Harvest					

\*Projected spawners (S) includes a highly uncertain hatchery component

# Escapement Plans | Early Summer

Option	LAER	TAM Cap	Lower Fishery Ref. Point	Upper fishery Ref. Point
1	10%	50%	100,000	200,000
2	5%	50%	100,000	200,000

**Table 1:** Detailed allowable exploitation rates and projected spawners over the forecast range for the two escapement plan options for Early Summers.

Early Summer	forecast (incl. misc)	57,795	92,596	158,950	281,036	464,523
Option 1	Max. Allowable ER	10%	10%	10%	22%	22%
	Allowable Harvest	5,800	9,300	15,900	61,800	102,200
	Projected S (after MA)	33,000	52,900	90,900	139,200	229,900
	Proj. S as % BY S	41%	66%	113%	173%	286%
	Proj. S as % cycle S	23%	37%	63%	96%	159%
Option 2	Max. Allowable ER	5%	5%	5%	22%	22%
	Allowable Harvest	2,900	4,600	7,900	61,800	102,200
	Projected S (after MA)	34,800	55,900	96,000	139,200	229,900
	Proj. S as % BY S	43%	70%	120%	173%	286%
	Proj. S as % cycle S	24%	39%	67%	96%	159%
	Incidental Harvest (LAER)					
	Directed Harvest					

# Escapement Plans | Summer

Option	LAER	TAM Cap	Lower Fishery Ref. Point	Upper fishery Ref. Point
1	10%	50%	640,000	1,280,000
2	10%	50%	640,000	1,280,000

**Table 1:** Detailed allowable exploitation rates and projected spawners over the forecast range for the two escapement plan options for Summers.

Summer	forecast (incl. misc)	p10	p25	p50	p75	p90
		<b>101,268</b>	<b>191,874</b>	<b>379,247</b>	<b>774,186</b>	<b>1,554,481</b>
Option 1	Max. Allowable ER	10%	10%	10%	10%	22%
	Allowable Harvest	10,127	19,187	37,925	77,419	334,381
	Projected S (after MA)	80,800	151,500	294,800	590,900	1,018,200
	Proj. S as % BY S	43%	81%	158%	316%	545%
	Proj. S as % cycle S	12%	23%	44%	89%	153%
Option 2	Max. Allowable ER	10%	10%	10%	10%	22%
	Allowable Harvest	10,127	19,187	37,925	77,419	334,381
	Projected S (after MA)	80,800	151,500	294,800	590,900	1,018,200
	Proj. S as % BY S	43%	81%	158%	316%	545%
	Proj. S as % cycle S	12%	23%	44%	89%	153%
	Incidental Harvest (LAER)					
	Directed Harvest					



# Escapement Plans | Lates

Option	LAER	Tam Cap	Lower Fishery Ref. Point	Upper fishery Ref. Point
1	10%	50%	300,000	600,000
2	10%	50%	300,000	600,000

**Table 1:** Detailed allowable exploitation rates and projected spawners over the forecast range for the two escapement plan options for Lates.

		p10	p25	p50	p75	p90
<b>Lates</b>	<b>forecast (incl. misc)</b>	<b>8,060</b>	<b>14,666</b>	<b>28,958</b>	<b>65,541</b>	<b>154,011</b>
Option 1	Max. Allowable ER	10%	10%	10%	10%	10%
	Allowable Harvest	806	1,467	2,896	6,554	15,401
	Projected S (after MA)	5,000	8,900	17,000	35,800	74,300
	Proj. S as % BY S	76%	136%	259%	545%	1132%
	Proj. S as % cycle S	1%	2%	4%	8%	17%
Option 2	Max. Allowable ER	10%	10%	10%	10%	10%
	Allowable Harvest	806	1,467	2,896	6,554	15,401
	Projected S (after MA)	5,000	8,900	17,000	35,800	74,300
	Proj. S as % BY S	76%	136%	259%	545%	1132%
	Proj. S as % cycle S	1%	2%	4%	8%	17%
	Incidental Harvest (LAER)					
	Directed Harvest					

# Discussion Questions



Specific feedback being sought on sockeye management approaches for 2024/25 includes:

1. Which Fraser Sockeye escapement plan option do you prefer (1 or 2)?

Option 1: Consistent with the brood year escapement plan

Option 2: Precautionary escapement plan with reduced bycatch limits on early timed stocks

Option 3: I have an alternate approach to suggest.

# Window closure management measures

- “Rolling window closures” are defined periods of time where a portion of the migration route is closed to fishing to protect fish
- Used in Fraser Sockeye management to protect a “weak stock” when migration timing overlaps with another stock, e.g. protect Early Stuart MU when harvestable surplus is available for Early Summer MU
- In recent history, marine water closures commenced in mid-June, while closures upstream of Prince George commenced in mid-July
  - 2019 closure extended from 3 to 4 weeks; 2023 closure extended from 4 to 5 weeks
  - Extended to protect weaker, early-timed stocks within the Early Summer MU (e.g., Bowron and Taseko)
- For 2024, proposed options include 3, 4, and 5 week windows to protect the Early Stuart MU, and early-timed stocks within the Early Summer MU

# Potential fishery impacts

- The longer the window closure, the more fish are permitted to migrate to the spawning grounds without fishing pressure
- Sockeye Window Closure applies to sockeye-directed fisheries, and can include mesh restrictions in Chinook gillnet fisheries
- This may mean foregone fishing opportunity on more abundant stocks and species, for example:
  - Delayed Sockeye-targeted openings despite there being harvestable surplus
  - Gear restrictions for early season limited participation Chinook fisheries

# Window closure management measures

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

- A 3 week closure protects ~90% of Early Stuart. A 5 week closure protects 95% of Early Stuart run. A 5 week closure also protects 60-70% of Early Summer, but this estimate is uncertain
- Note: Actual dates may be adjusted based on in-season estimates of run timing

# Fraser Sockeye and Pink test fisheries



Test fishing plans will be determined at the Fraser River Panel in April and June 2024. Given low forecast returns, low likelihood of directed fisheries limited test fisheries are proposed for 2024.

# Discussion Questions



1. The Early Sockeye window closure is designed to reduce incidental mortality on the first returning Management Units. Which length of window closure do you prefer?
2. In-river test fisheries and marine test fisheries are planned for 2024. Which marine test fishery program do you prefer?
  - a) Marine purse seines and gillnets
  - b) Marine purse seines only
  - c) No marine test fisheries
3. Given the low forecast return for Fraser Sockeye, what is an acceptable level of incidental mortality?