



2020 Fraser River Chinook Stock Assessment and Fishery Summary



Presented to:

Fraser and Approach Salmon
Forum

February 2, 2021

Photos by: Shane Kalyn

Outline

Background & Stock Assessment

2020 Fraser River Fisheries

- Recreational
- Commercial
- First Nations

Questions

Photo by: Shane Kalyn

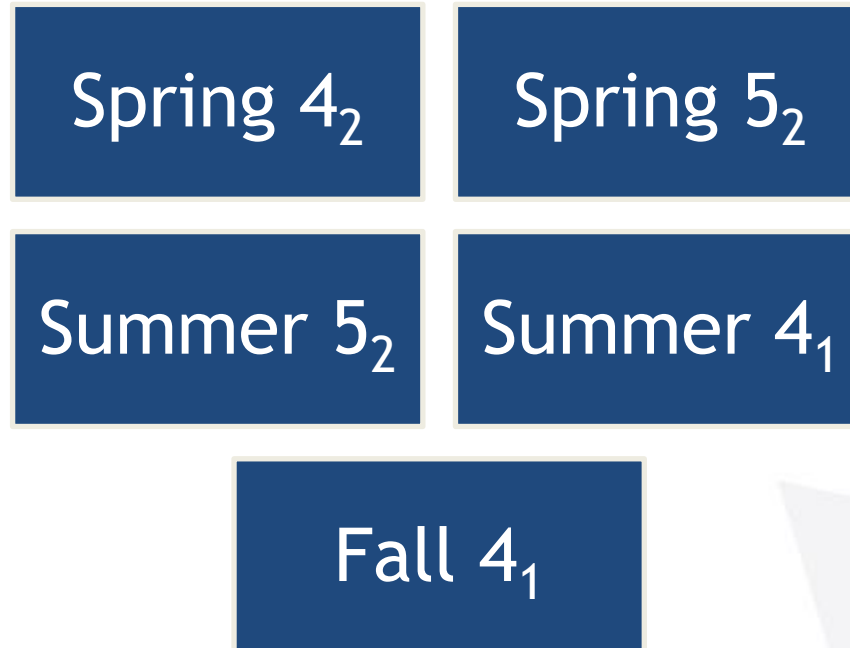


Background and Stock Assessment



Fraser River Chinook - Background

- Spawning occurs throughout the Fraser watershed
- Currently managed as five Management Units (MUs):



Please refer to handouts for detailed information

2020 Fraser Chinook Stock Assessment

In-season Assessment:

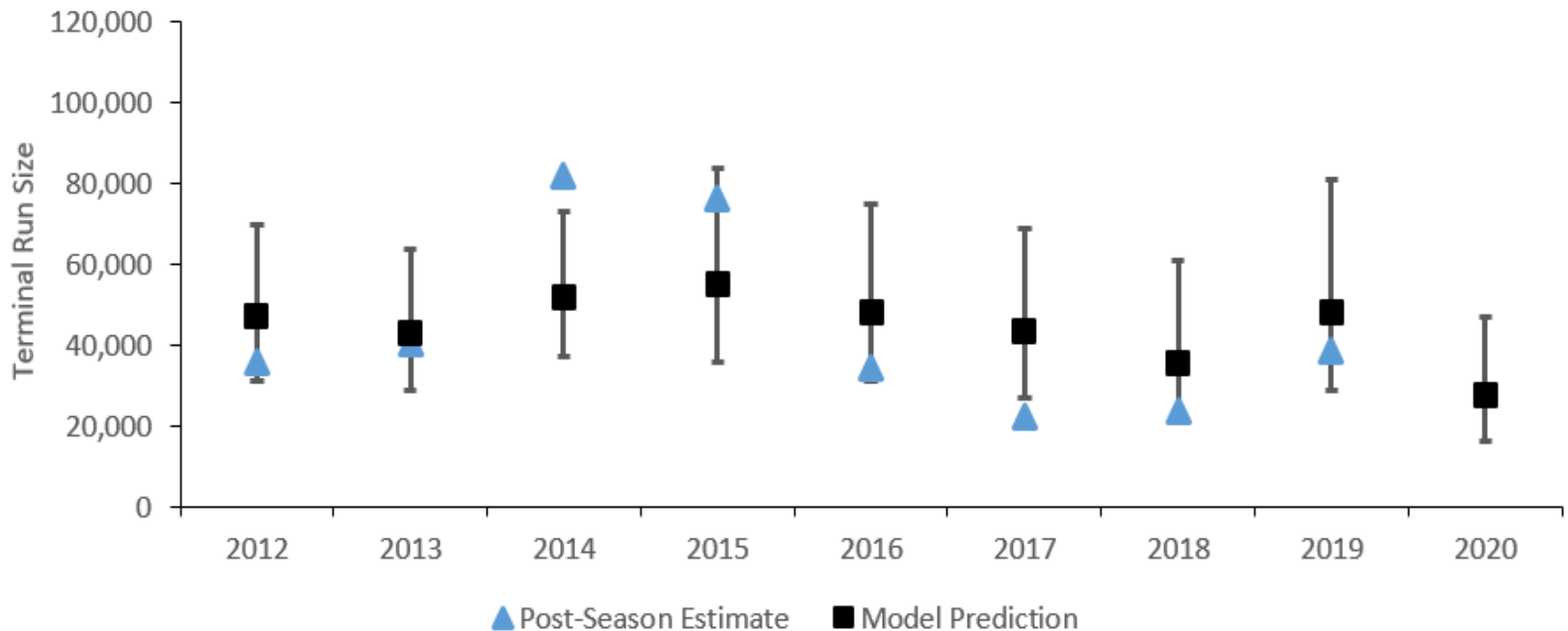
- Objective (at-risk Chinook): allow as many fish to pass through to the spawning grounds as possible
- Expected to reduce CDN fishery mortalities to very low levels approaching 5%
- Management measures superseded the previous zoned approach for Sp/Sum 5₂ Chinook; no more 'zone' designation
- In-season run size estimate for Sp/Sum 5₂ Chinook did not affect management



Photo by: Shane Kalyn

Spring 5₂ and Summer 5₂ Chinook 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.

2020 Fraser Chinook Stock Assessment

Post-season Assessment:

- Spawner abundance is estimated using a number of methods:
 - Mark-recapture studies - Nicola, Harrison, Lower Shuswap, Chilko
 - Electronic counters - Bonaparte and Deadman
 - Fence counts at Salmon River (Salmon Arm)
 - Remaining assessments are through visual surveys (aerial, foot or float)
- Enumeration of 2020 Chinook escapement is still ongoing; some preliminary estimates available
- The Big Bar landslide will complicate 2020 assessment

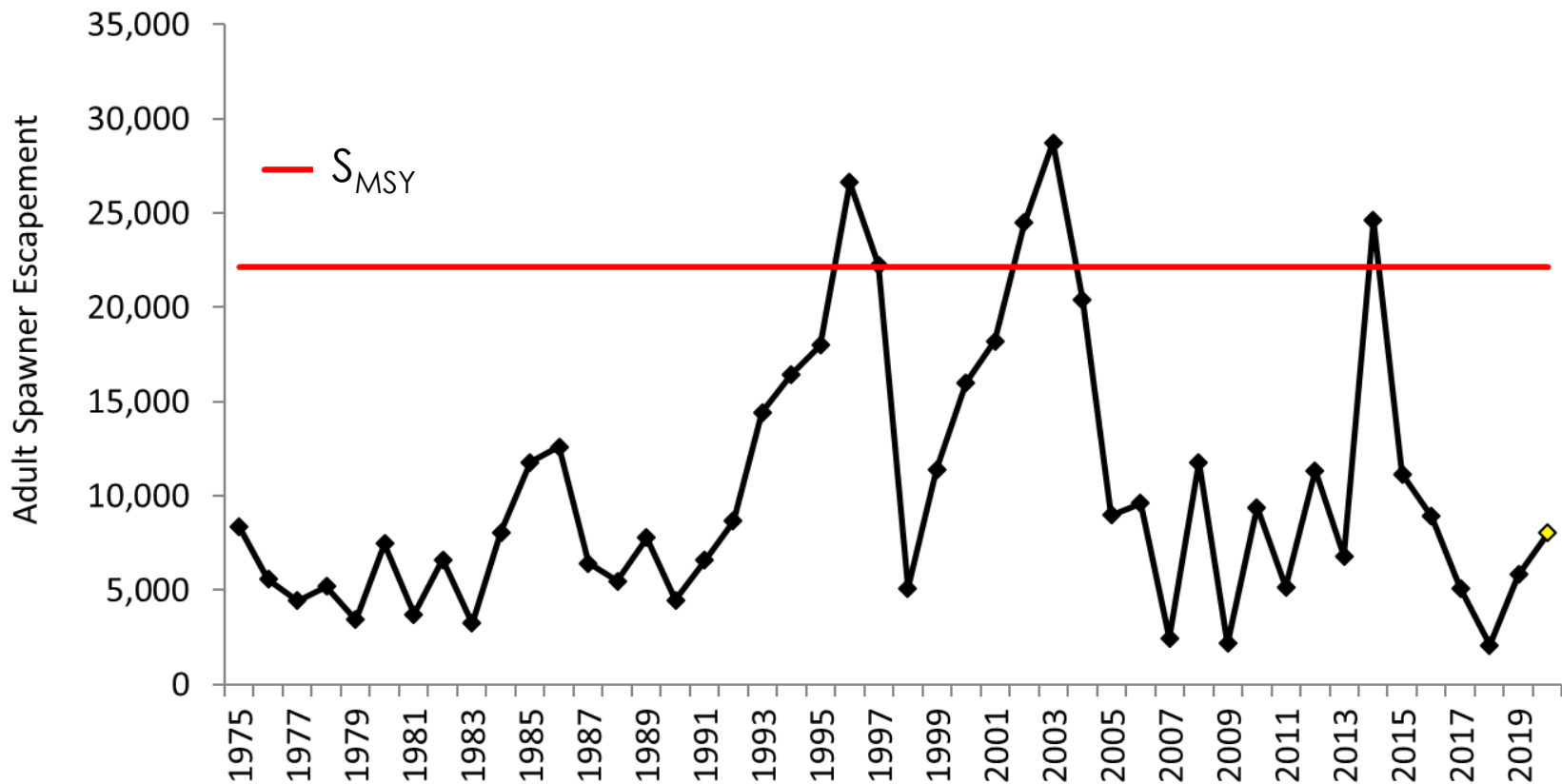
2020 Fraser Chinook Stock Assessment

Coming up:

- Time series of escapement for each Chinook MU
- Comparison against S_{MSY} or escapement goal
- S_{MSY} = the number of spawners needed to maintain Maximum Sustainable Yield (MSY)
- MSY = highest possible annual catch that can be sustained over time
- Summary slide for 2020 *preliminary* escapements

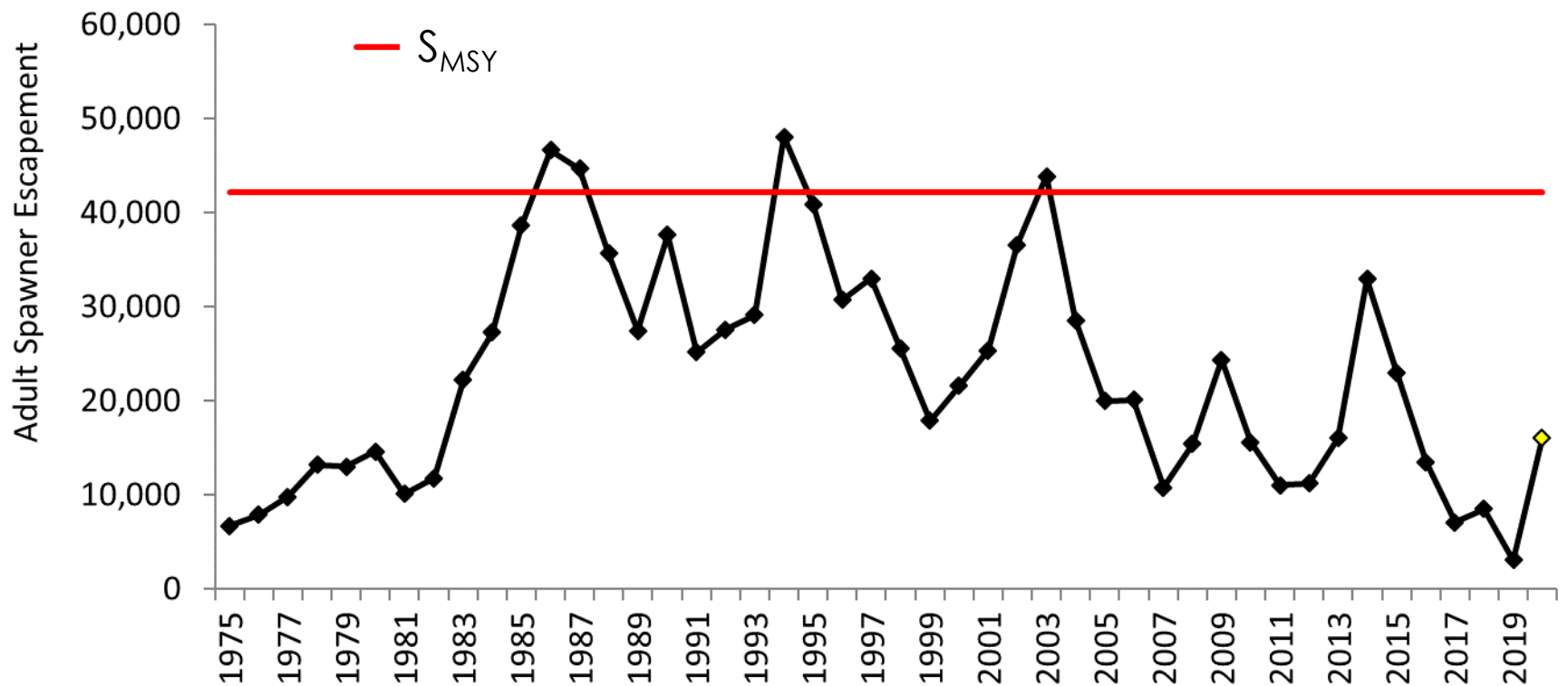
Escapement - Fraser Spring 4₂ Chinook

- Brood year escapement (2016) was below the recent average
- The *preliminary* estimate for 2020 is ~8,300



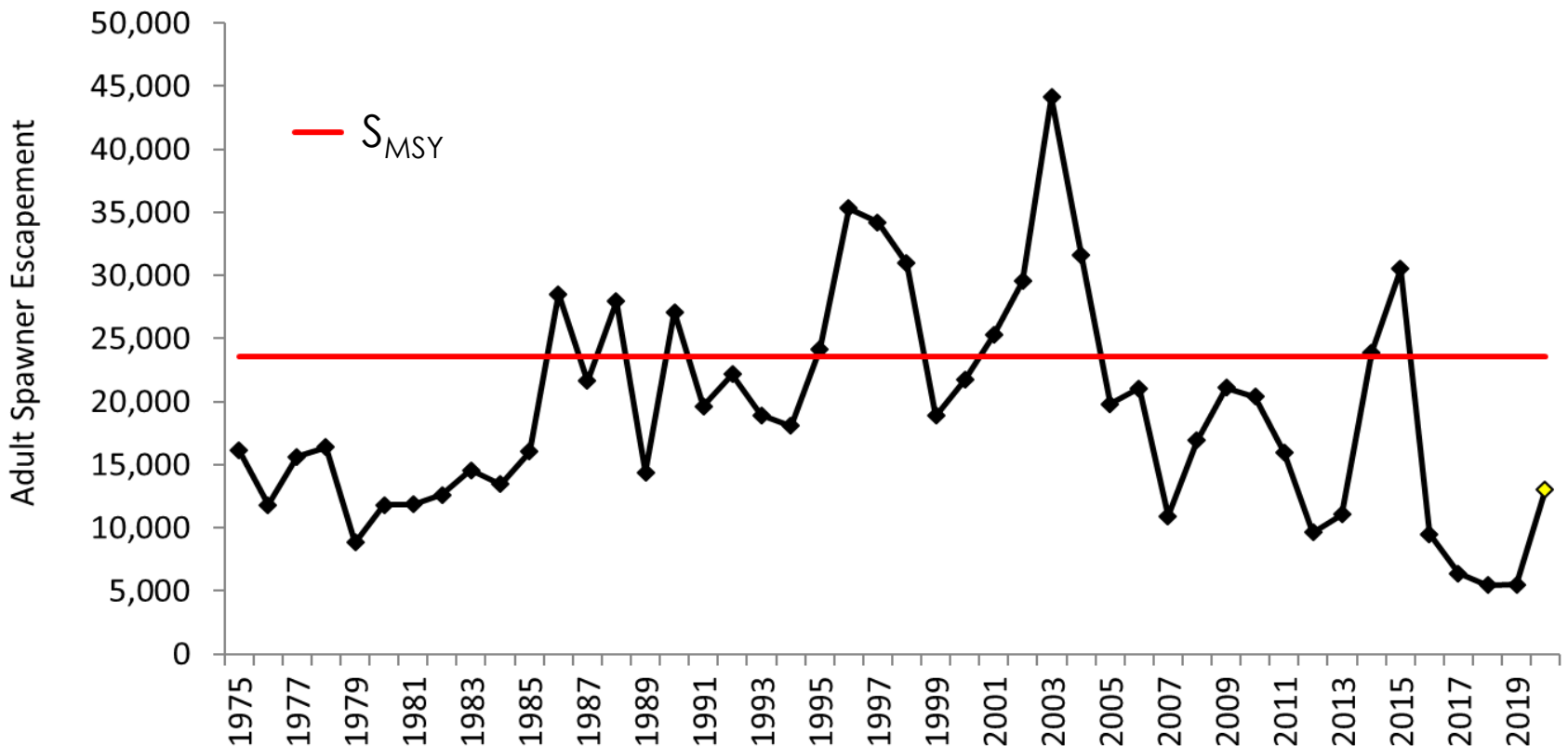
Escapement - Fraser Spring 5₂ Chinook

- Brood year escapement (2015) was near the recent average
- The *preliminary* estimate for 2020 is ~16,000



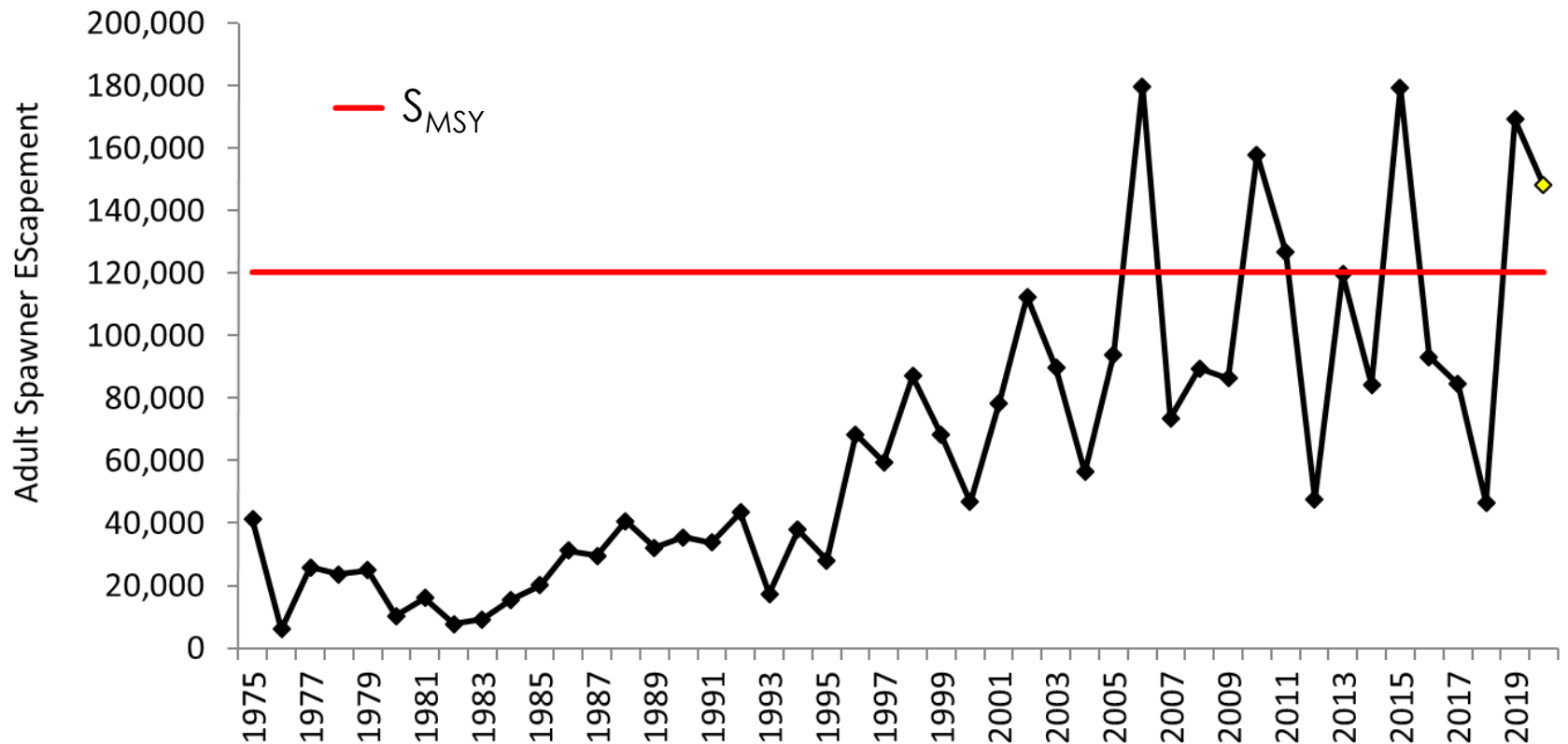
Escapement - Fraser Summer 5₂ Chinook

- 2015 brood year above average; driven by strong Nechako return
- The *preliminary* estimate for 2020 is ~13,000



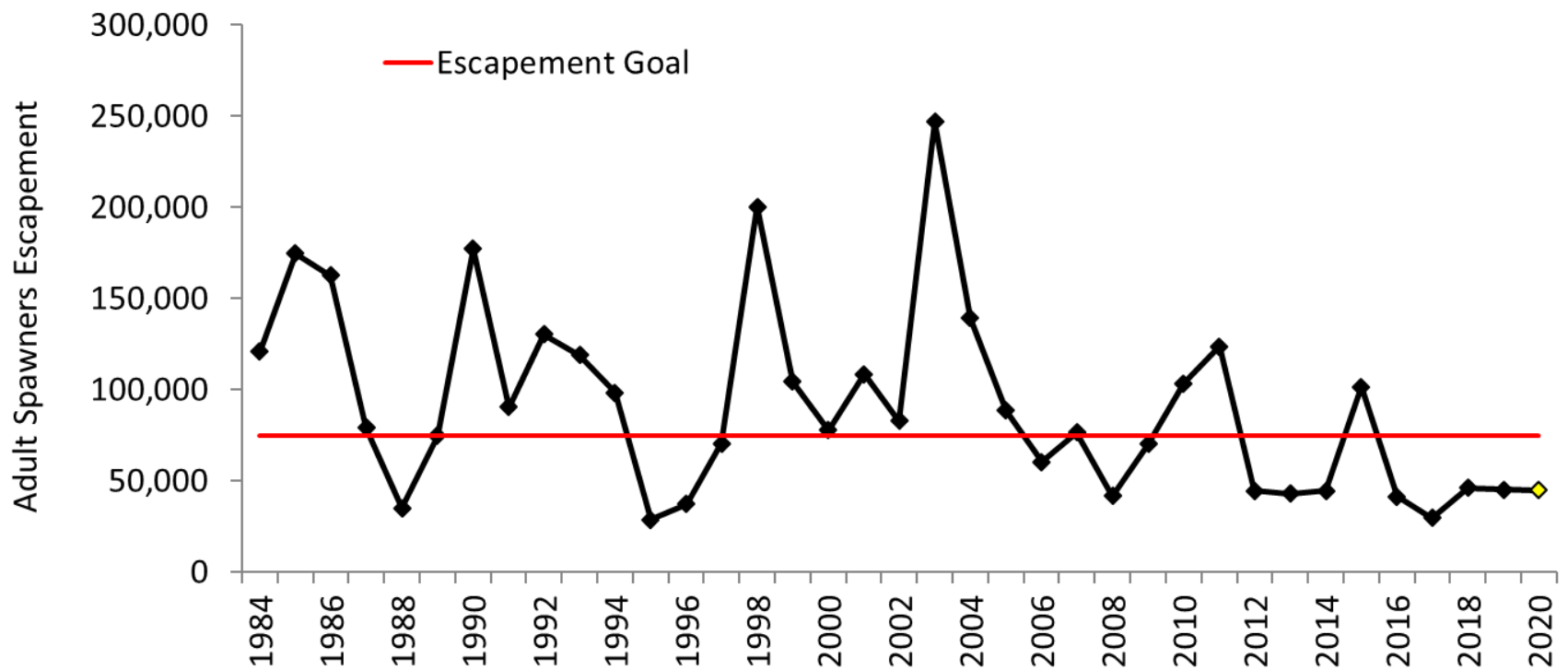
Escapement - Fraser Summer 4₁ Chinook

- Brood year escapement (2016) was near the recent average
- The *preliminary* estimate for 2020 is ~149,000



Escapement - Fraser Fall 4₁ Chinook

- Brood year escapement (2016) below escapement goal and recent average
- The escapement goal (75,100) has only been met once in the last 9 years
- The *preliminary* Harrison estimate for 2020 is ~43,000



2020 Fraser Chinook Escapement Summary

Management Unit	Escapement Estimate*	Brood Year Escapement**	Comparisons
Spring 4 ₂	~8,300	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	~149,000	93,000	Near S_{MSY}
Fall 4 ₁ (Harrison)	~43,000	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

2020 Fraser River Fishery Summary



Photo by: Shane Kalyn

2020 Albion Test Fishery Summary

Dates

Chinook-directed
single panel (8"):
Apr. 21 – Oct. 20

Chinook-directed
multi-panel (6-9"):
Apr. 22 – Aug. 30

Chum-directed
single panel (6.75"):
Sep. 1 – Nov. 23

Catch

Chinook: 1,737

Chum: 7,127

Coho: 585

Sockeye: 49

Pink: 0

Steelhead: 6

2020 Recreational Fishery Management

Annual Limits

10 Chinook

Size Limits

Chinook: Maximum size limit of 80 cm in marine waters

Fishing Closures

Chinook, Chum, Coho:
Area and time closures along migration route

See handout for summary of 2020 regulations in Fraser River recreational fisheries

2020 Fraser River Catch - Recreational

	Chinook	
	rel	kept
Lower Fraser	NA	NA
BC Interior	174	5,843
Totals	174	5,843

***Estimates are preliminary and subject to change**

Information on catch in marine waters can be found by searching "South Coast Assessment Bulletin Creel" at:

<http://science-libraries.canada.ca/eng/home/>

2020 Fraser River Fisheries - First Nations

Management Objectives

- Direct harvest toward Summer 4₁ Chinook & Fraser Chum
- Avoid at-risk stocks:
 - Chinook (Spring 4₂, Spring 5₂, Summer 5₂)
 - Sockeye
 - Interior Fraser Coho
 - Interior Fraser Steelhead

Management Actions

- Short communal gill net openings in August, min. 8” mesh
- Longer-duration openings to fish wheel, rod & reel and dip net
- Window closures

2020 Fraser River Catch - First Nations

	Chinook	
	rel	kept
FSC		
<i>Lower Fraser</i>	1,170	24,726
<i>BC Interior</i>	129	8,806
<i>FSC Total</i>	1,299	33,532
Economic Opportunity		
<i>Lower Fraser</i>	3	3
<i>BC Interior</i>	-	-
<i>Ec Opp Total</i>	3	3
ESSR		
<i>Lower Fraser</i>	-	3,616
<i>BC Interior</i>	-	-
<i>ESSR Total</i>	0	3,616
All Catch		
<i>Lower Fraser</i>	1,173	28,345
<i>BC Interior</i>	129	8,806
<i>All Catch Total</i>	1,302	37,151

- **Estimates are preliminary and subject to change**
- Economic Opportunity fisheries include Demonstration fisheries and Tsawwassen Harvest Agreement fisheries



Questions?

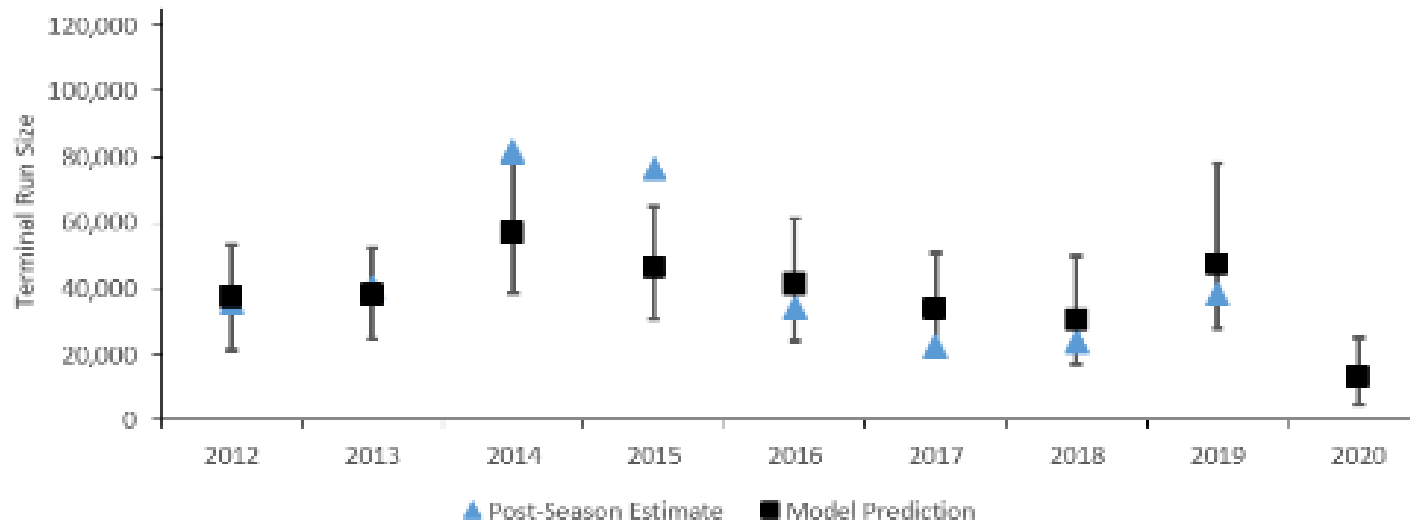


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Additional Slides

Spring 5_2 and Summer 5_2 Alternative Albion Model Outputs

Prediction using both multi-panel and standard net Albion data:
5,000 - 25,000 (median = 13,180)



See FN0620 for more details.

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