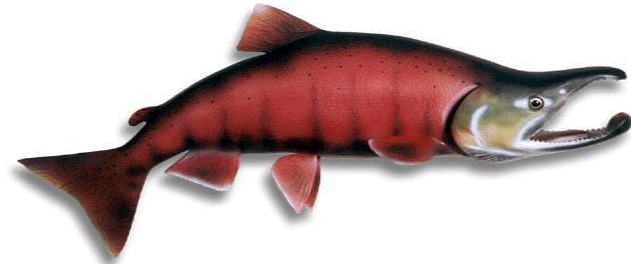
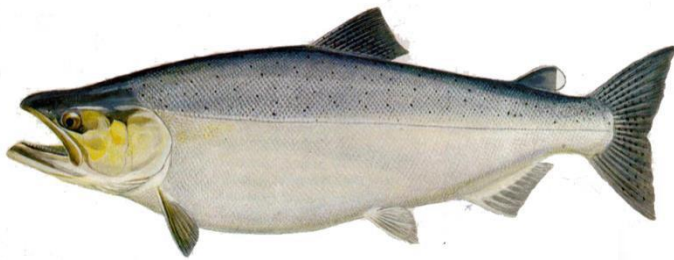




# 2017 Fraser River Stock Assessment and Fishery Summary

## Chinook, Coho and Chum





# Background and Stock Assessment



# Fraser River Chinook - Background

Diverse group of populations

- exhibit a wide range of life histories, geography, and run timing

Chinook enter the Fraser River from March thru October

Spawning occurs throughout the Fraser

- from just above the tidal limits in the Lower Fraser to the upper tributaries of the Stuart basin

Juveniles exhibit both stream and ocean life history types

Currently managed as five Management Units

- Spring 4<sub>2</sub> Chinook (2 Conservation Units)
- Spring 5<sub>2</sub> Chinook (9 Conservation Units)
- Summer 5<sub>2</sub> Chinook (5 Conservation Units)
- Summer 4<sub>1</sub> Chinook (4 Conservation Units)
- Fall 4<sub>1</sub> Chinook (3 Conservation Units)



# 2017 Fraser River Stock Assessment Chinook

## In-season Assessment

- Spring and Summer 5<sub>2</sub> Chinook are assessed in-season with an abundance model based on catch from the Albion Test Fishery
- began the year assuming Zone 1
- on June 16<sup>th</sup> the in-season model generated an estimate of 42,530 Chinook (FN0549)
- based on this estimate, all Zone 1 management actions remained in place (Zone 1 < 45K; Zone 2 = 45 to 85K; Zone 3 > 85K)



# 2017 Fraser River Stock Assessment Chinook

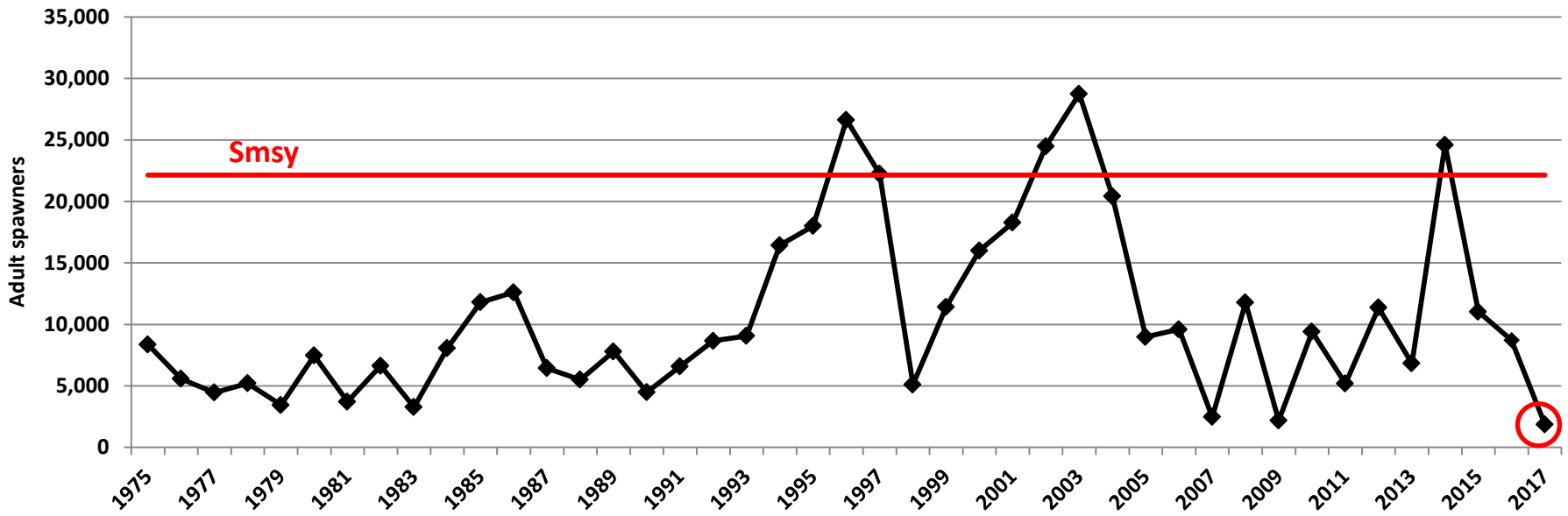
## Post-season Assessment

- 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)



## Escapement - Fraser Spring 4<sub>2</sub> Chinook

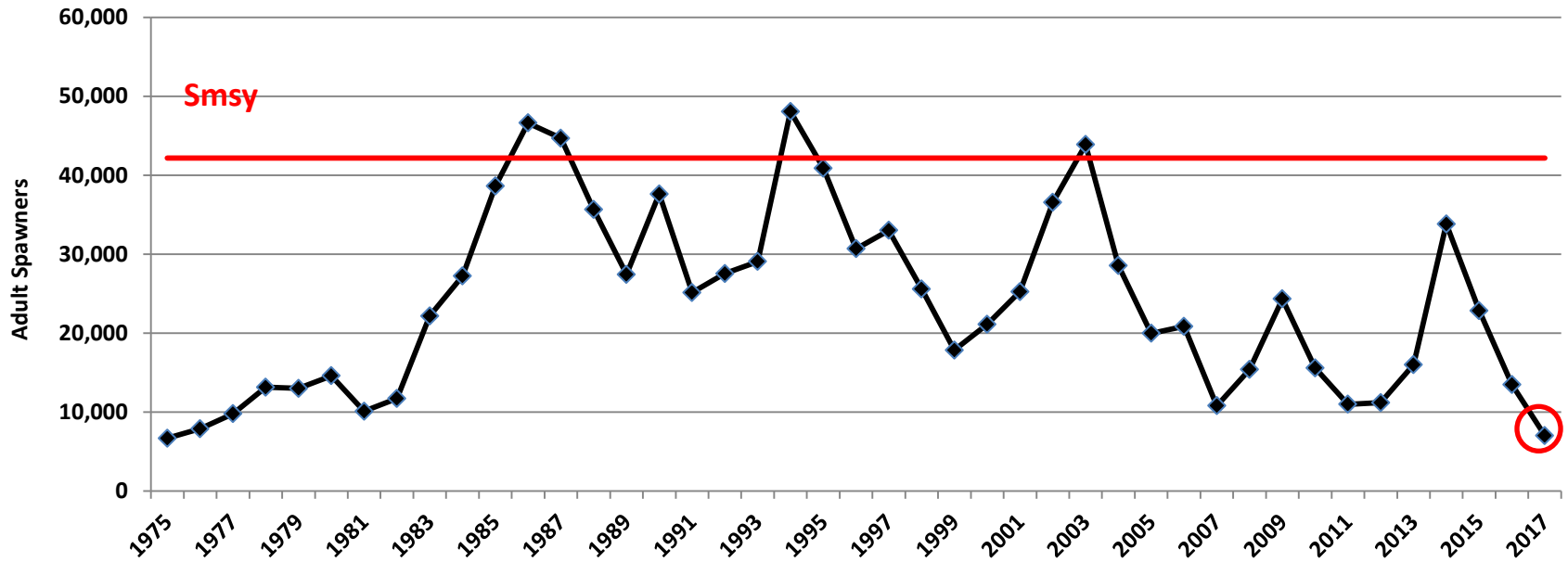
- 2017 preliminary estimate among the lowest on record
- Many systems could not be accessed due to extreme forest fires in 2017
- The current estimate will increase when numbers are infilled to account for the missing surveys





# Escapement - Fraser Spring 5<sub>2</sub> Chinook

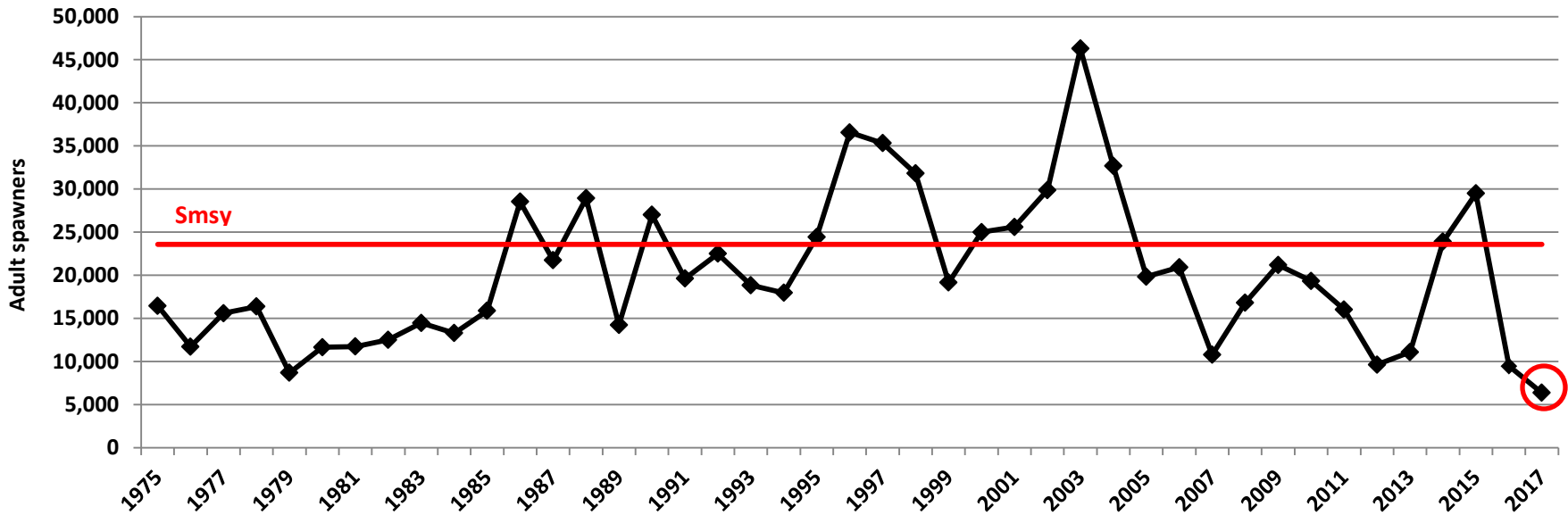
- 2017 escapement was extremely poor





## Escapement - Fraser Summer 5<sub>2</sub> Chinook

- 2017 continues to be well-below Smsy and the long-term average
- Bridge River estimate is not yet available - this will increase the final escapement estimate
- Currently working to develop Chilko as an indicator

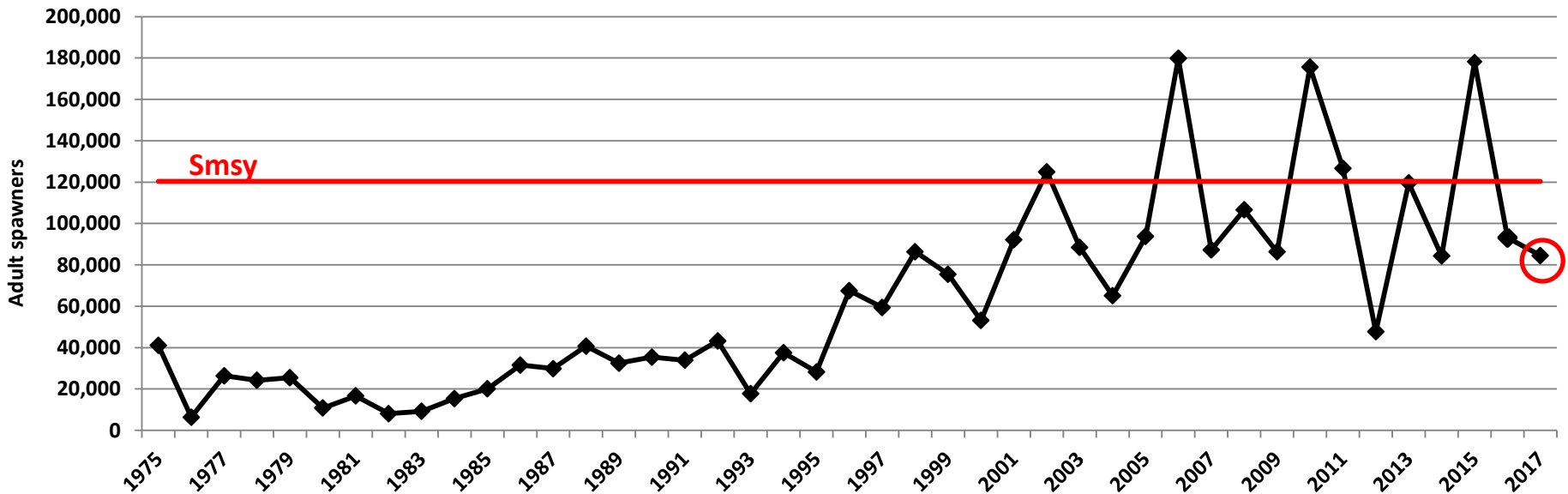






## Escapement - Fraser Summer 4<sub>1</sub> Chinook

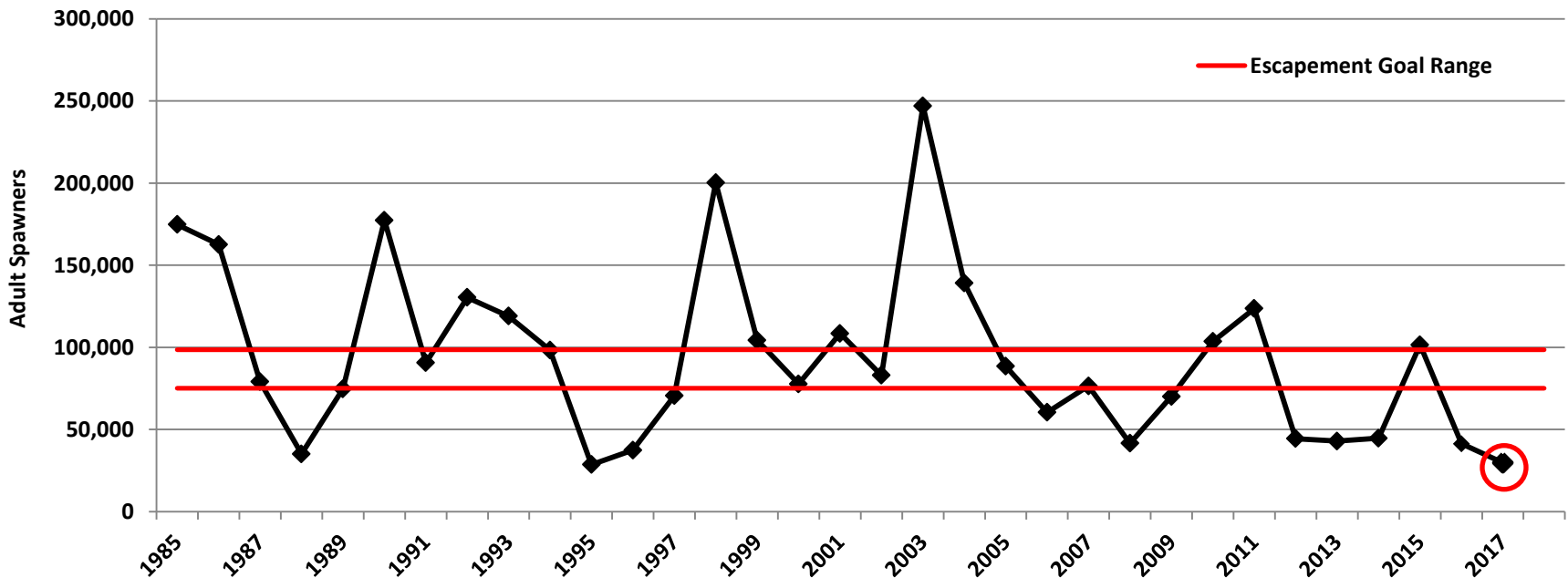
- 2017 was below Smsy and below the brood year
- Shuswap stocks continue to perform poorly; Lower Thompson returns are near average





## Escapement - Fraser Fall 4<sub>1</sub> Chinook

- Escapement has been below the escapement goal range for 5 of the last 6 years
- 2017 escapement estimates is the second lowest on record





# 2017 Fraser Chinook Escapement Summary

## Near-final Escapement Estimates\*:

- Spring  $4_2$  = well-below Smsy
- Spring  $5_2$  = well-below Smsy
- Summer  $5_2$  = well-below Smsy
- Summer  $4_1$  = below Smsy
- Fall  $4_1$  = well-below escapement goal

*\*field based estimates*



# Fraser River Coho - Background

Coho populations spawn throughout the Fraser watershed

- many spawning sites in Lower Fraser River
- Interior Fraser coho return to the Upper Fraser and Thompson Rivers

Stream-type life history

Most return as three year olds, though 10% return as 4 year olds having spent 2 years in fresh water.

Coho enter the Lower Fraser River from late August to December

- peak migration period for Interior Fraser Coho from early September to early October

Interior Fraser Coho populations have declined dramatically from peak abundances observed in the 1980's.



# 2017 Fraser River Stock Assessment Coho

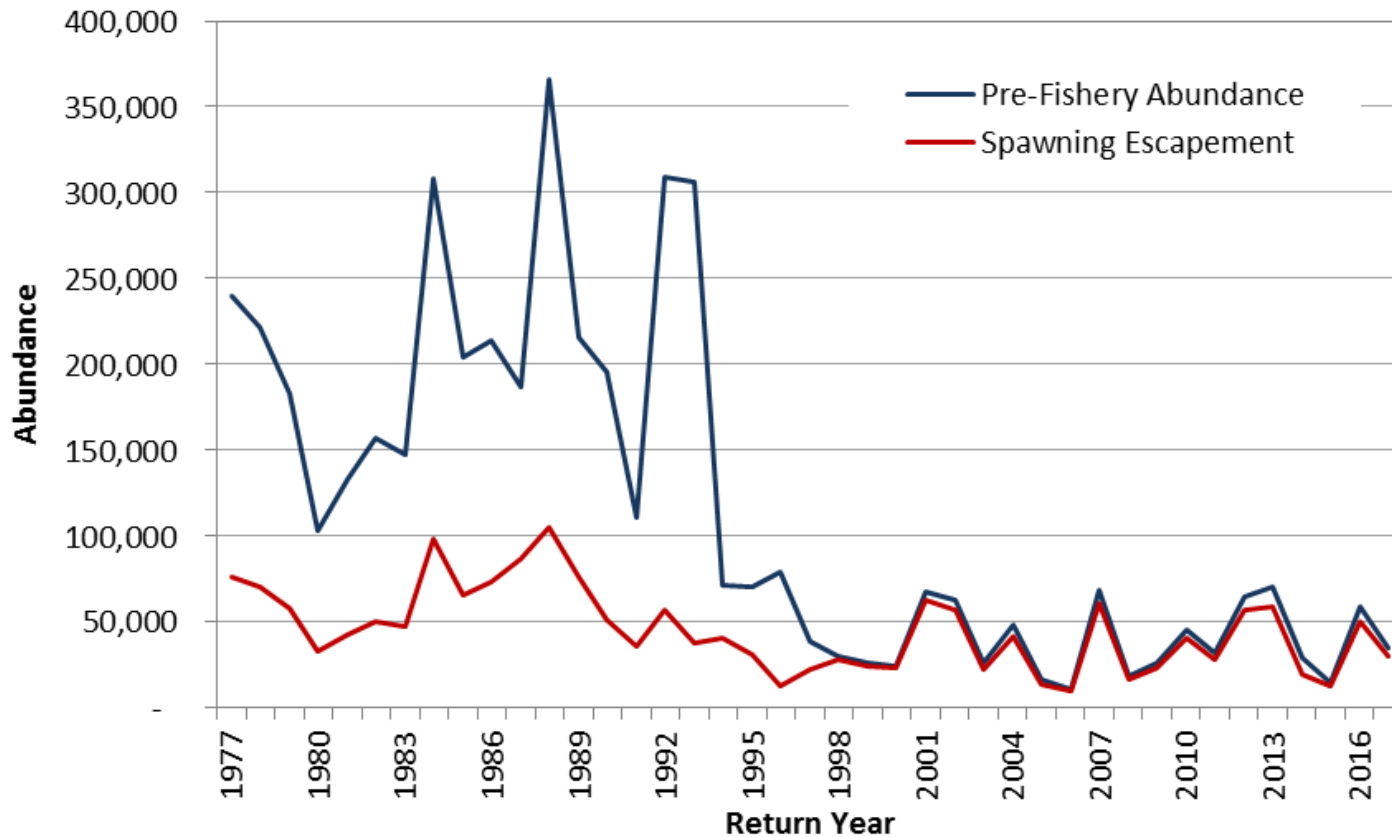
## Interior Fraser Coho

- very preliminary escapement estimate approximately 30,000
- Increase from 2014 brood year escapement

**2016 total IFR coho abundance and 2017 IFR coho escapement are preliminary**



# Total Abundance - Interior Fraser River Coho





# Fraser River Chum - Background

Largest chum population in British Columbia

- two Conservation Units (Lower Fraser and Fraser Canyon)
- managed as one management unit

Escapement goal is 800,000

Return to Fraser from September through November

- recent year peak migration mid/late-October

Major spawning areas are below Hope

- Harrison/Weaver/Chehalis, Chilliwack/Vedder, Stave

Enhancement

- Weaver spawning channels, Inch Creek, Chilliwack, and Chehalis hatcheries
- production relatively consistent over the last 10 years



# 2017 Fraser River Chum

Managed based on in-season information derived from the Albion test fishery

## 2017 in-season assessment

- October 16<sup>th</sup> preliminary run size estimate of 1.29 million
- October 23<sup>th</sup> run size estimate was 1.32 million

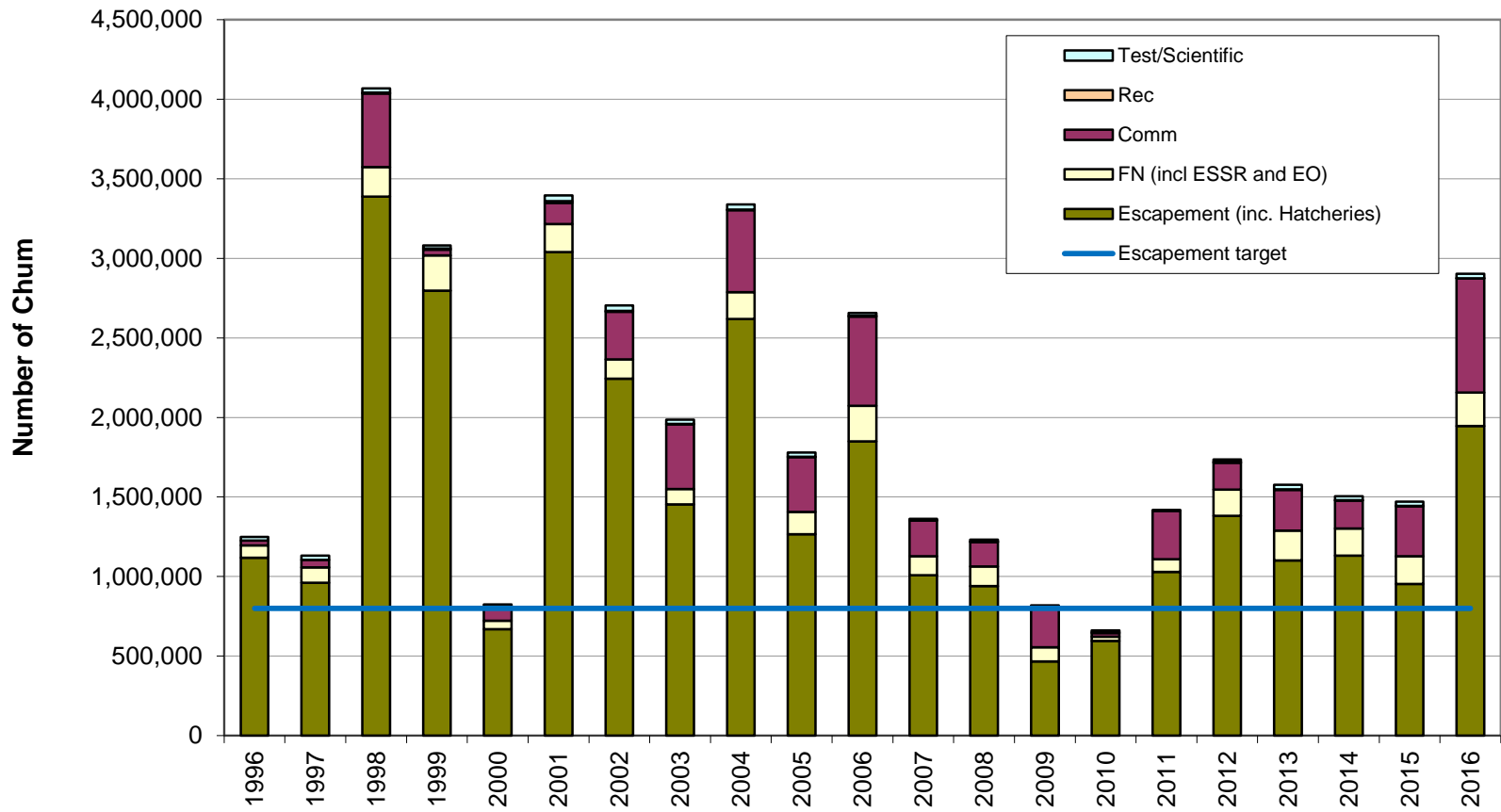
## Post-season assessment (escapement)

- 2017 escapement assessments not yet available
- Post-season estimate will likely be less than in-season





## Reconstructed Fraser chum pre-terminal run size





# 2017 Fraser River Fishery Summary



Please note that the term “Lower Fraser” is meant to include the Fraser River mainstem below Sawmill Creek and tributaries to the Lower Fraser River, where applicable.



# 2017 Fraser River Fisheries - Commercial

Directed chum fisheries in-river if a commercial TAC is identified

- constraints due to co-migrating stocks of concern
  - IFR Coho
  - IFR Steelhead

Area B Fraser River Chum Fishery

- No fishery openings in 2017

Area E Fraser River Chum Fishery

- two openings on October 24 and 27; harvest of 77,139 chum
- retained bycatch of 1 pink and 68 hatchery coho
- 104 Chinook, 740 unmarked coho, 8 sockeye, 14 pink, 12 steelhead and 264 sturgeon were released
- 1 Atlantic salmon was caught



# 2017 Fraser River Catch Commercial and Demonstration

	Chinook		Coho		Chum	
	rel	kept	rel	kept	rel	kept
<b>Area E</b>						
<i>Chum directed</i>	104	3	740	68	11	77,139
<b>Area B</b>						
<i>Chum directed (Area 29)</i>	0	0	0	0	0	0
<b>All Fisheries</b>	<b>104</b>	<b>3</b>	<b>740</b>	<b>68</b>	<b>11</b>	<b>77,139</b>



# 2017 Fraser River Fisheries - Recreational

## Chinook management actions in Region 2 (Lower Mainland)

- January 1 to July 31, no fishing for salmon (Zone 1 Mgmt.)
- August 1 to September 12, no fishing for salmon.
  - This management measure was in place due to extremely poor returns of Fraser sockeye and limited sockeye impacts available to provide for priority access to Chinook for First Nations FSC harvest opportunities.
- September 13 to December 31, the daily limit was four(4) chinook per day with only one(1) greater than 62 cm allowed to be retained.



# 2017 Fraser River Fisheries - Recreational

## Chinook management actions in Region 3 (Thompson-Nicola)

Fisheries in Region 3 generally target a specific stock group and are short duration opportunities designed to avoid impacts on non-target stocks. Areas not specifically mentioned are closed to fishing for salmon year-round.

### Fisheries targeting Spring and/or Summer 5<sub>2</sub> stocks

- Zone 1 management actions in place for 2017, no fishing for salmon

### Fisheries targeting Summer 4<sub>1</sub> stocks

- South Thompson River Aug 16 to Sept 22, 4 per day, 2 > 50 cm. There is a monthly quota of six chinook from the S. Thompson River.
- Kamloops Lake Aug 22 to Sept 22, 4 per day, 2 > 50 cm
- Thompson River remained closed due to concerns with sockeye impacts



# 2017 Fraser River Fisheries - Recreational

## Chinook management actions in Region 5A and 7 (Cariboo/Peace)

All fisheries in these Regions target Spring or Summer 5<sub>2</sub> Chinook

- Zone 1 management actions in place for 2017, no fishing for salmon

## Chinook management actions in Region 8 (Okanagan)

These fisheries target Summer 4<sub>1</sub> Chinook with some measures in place to avoid Bessette Spring 4<sub>2</sub> stocks. Areas not specifically mentioned are closed to fishing for salmon year round.

- Mabel Lake – July 25 to August 15 - one chinook per day, minimum size limit of 77 cm. August 16 to September 12, four chinook per day only two over 50 cm.
- Middle Shuswap River: July 15 to August 15 - one chinook per day, with a minimum size limit of 77 cm.
- Lower Shuswap River: July 15 to August 15 - one per day, with a minimum size limit of 77 cm. August 16 to September 12 - four per day only two over 50 cm.





# 2017 Fraser River Fisheries - Recreational

## Coho management actions

- Mouth to Sawmill Creek - no fishing for coho (bait ban) during “Coho Window Closure” from early September to early October
- Sawmill Creek to Lytton - No fishing for salmon Sept 16 to Dec 31
- Lytton to Williams Lake - No fishing for salmon Sept 23 to Dec 31
- Upstream of Williams Lake - No fishing for salmon Oct 1 to Dec 31

## Chum management actions

- September 13 to December 31 - two(2) per day (Mission to Sawmill Creek); four(4) per day (below Mission)



# 2017 Fraser River Catch Recreational

	Chinook		Coho		Chum	
	rel	kept	rel	kept	rel	kept
Lower Fraser	data not yet available					
BC Interior	208	2,322	0	0	0	0
<b>Totals</b>	<b>data not yet available</b>					

Lower Fraser catch information is not yet available as staff time has been allocated to other assessment projects



# 2017 Fraser River Fisheries

## First Nations Food, Social and Ceremonial

### Chinook-directed fisheries

#### Lower Fraser

- Above Port Mann:
  - gillnet openings occurred from April 1 to September 8 (no openings from June 25 to July 14)
  - gillnets restricted to 8-inch mesh from July 14 to September 4
- Below Port Mann:
  - gillnet openings occurred April 25 to September 4
  - gillnets restricted to 8-inch mesh from June 26 to September 4
- managed to reduced hours to maintain effort consistent with Zone 1 management

#### Mid Fraser

- Rod and reel, dip net, and Chinook directed 8-inch mesh openings from May 2 to September



# 2017 Fraser River Fisheries

## First Nations Food, Social and Ceremonial

### Chinook-directed fisheries (cont.)

#### Upper Fraser

- Rod and reel, dip net and 8-inch mesh openings from June 1 to Aug. 28. Areas d/s of Thompson managed to maintain effort consistent with Zone 1 management.

#### Thompson River Upstream of Bonaparte

- licensed July 12 to July 31 with no restrictions, early August groups went to 8 inch mesh.



# 2017 Fraser River Fisheries

## First Nations Food, Social, and Ceremonial

### Sockeye-directed fisheries

#### Lower Fraser

- None in 2017

#### Mid Fraser

- None in 2017

#### Thompson River Upstream of Bonaparte

- sockeye directed fisheries planned and limited to a max. harvest amount

#### Upper Fraser

- Deadman to Hixon: directed sockeye fishing with dip nets Aug 18 to Sept. 12
- upstream of Hixon: directed gillnet fishing for 7 days, limited to a max. harvest amt.
- Some retention in terminal areas



# 2017 Fraser River Fisheries

## First Nations Food, Social and Ceremonial

### Coho-directed fisheries

- Terminal coho directed opportunities occurred for Secwepemc communities where abundance permitted on the Bonaparte fish way, the Dunn Creek fence and the McKinley Fence.

### Chum-directed fisheries (Lower Fraser only)

- FSC openings on weekends from October 7 to November 26



# 2017 Fraser River Fisheries

## First Nations Economic Opportunity and Demo

### Lower Fraser River Economic Opportunity Fisheries

- only chum salmon economic opportunity fisheries in 2017 due to low sockeye returns
- chum-directed fisheries occurred between Oct 19 and Nov 14
  - 109,522 chum retained, 5 released
  - bycatch of 318 coho, 16 Chinook, 4 pink, and 3 sockeye retained
  - 541 coho, 456 Chinook, 118 pink, 48 sockeye, and 21 steelhead released



# 2017 Fraser River Fisheries First Nations Economic Opportunity and Demo

## Mid and Upper Fraser Demonstration fisheries

### Secwepemc Fisheries Commission

- South Thompson 4<sub>1</sub> Chinook on Kamloops Lake did not occur in 2017 due to concerns with sockeye impacts and low returns to the Shuswap.

### Upper Fraser Conservation Alliance

- No fishery occurred in 2017 (no sockeye or pink CCTAC)





# 2017 Fraser River Catch - First Nations

	Chinook		Coho		Chum		Steelhead	
	rel	kept	rel	kept	rel	kept	rel	kept
<b>FSC</b>								
<i>Lower Fraser</i>	49	13,305	230	626	51	47,071	38	0
<i>BC Interior</i>	60	3,040	0	108	0	0	0	0
<b><i>FSC Total</i></b>	<b>109</b>	<b>16,345</b>	<b>230</b>	<b>734</b>	<b>51</b>	<b>47,071</b>	<b>38</b>	<b>0</b>
<b>Economic Opportunity</b>								
<i>Lower Fraser</i>	456	16	541	318	5	109,522	21	0
<i>BC Interior</i>	0	0	0	0	0	0	0	0
<b><i>Ec Opp Total</i></b>	<b>456</b>	<b>16</b>	<b>541</b>	<b>318</b>	<b>5</b>	<b>109,522</b>	<b>21</b>	<b>0</b>
<b>ESSR</b>								
<i>Lower Fraser</i>	0	6,633	0	10,914	0	13,447	0	0
<i>BC Interior</i>	0	0	0	0	0	0	0	0
<b><i>ESSR Total</i></b>	<b>0</b>	<b>6,633</b>	<b>0</b>	<b>10,914</b>	<b>0</b>	<b>13,447</b>	<b>0</b>	<b>0</b>
<b>All Catch</b>								
<i>Lower Fraser</i>	505	19,954	771	11,858	56	170,040	59	0
<i>BC Interior</i>	60	3,040	0	108	0	0	0	0
<b><i>All Catch Total</i></b>	<b>565</b>	<b>22,994</b>	<b>771</b>	<b>11,966</b>	<b>56</b>	<b>170,040</b>	<b>59</b>	<b>0</b>



The End