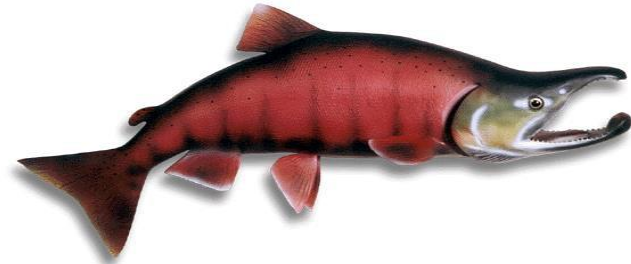
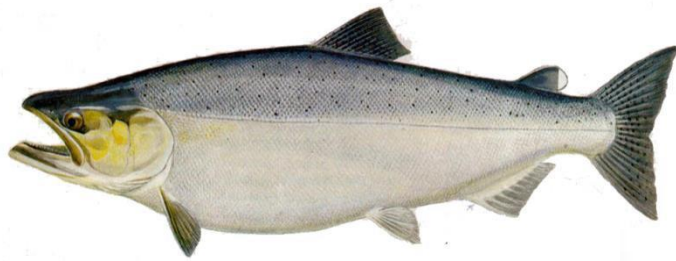




2016 Fraser River Stock Assessment and Fishery Summary

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 4₂ Chinook (2 Conservation Units)
- Spring 5₂ Chinook (9 Conservation Units)
- Summer 5₂ Chinook (5 Conservation Units)
- Summer 4₁ Chinook (4 Conservation Units)
- Fall 4₁ Chinook (3 Conservation Units)



2016 Fraser River Stock Assessment Chinook

In-season Assessment

- Spring and Summer 5₂ 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 14th the in-season model generated an estimate of 43,000 chinook (FN0523)
- based on this estimate, all Zone 1 management actions remained in place (Zone 1 < 45K; Zone 2 = 45 to 85K; Zone 3 > 85K)



2016 Fraser River Stock Assessment Chinook

Post-season Assessment

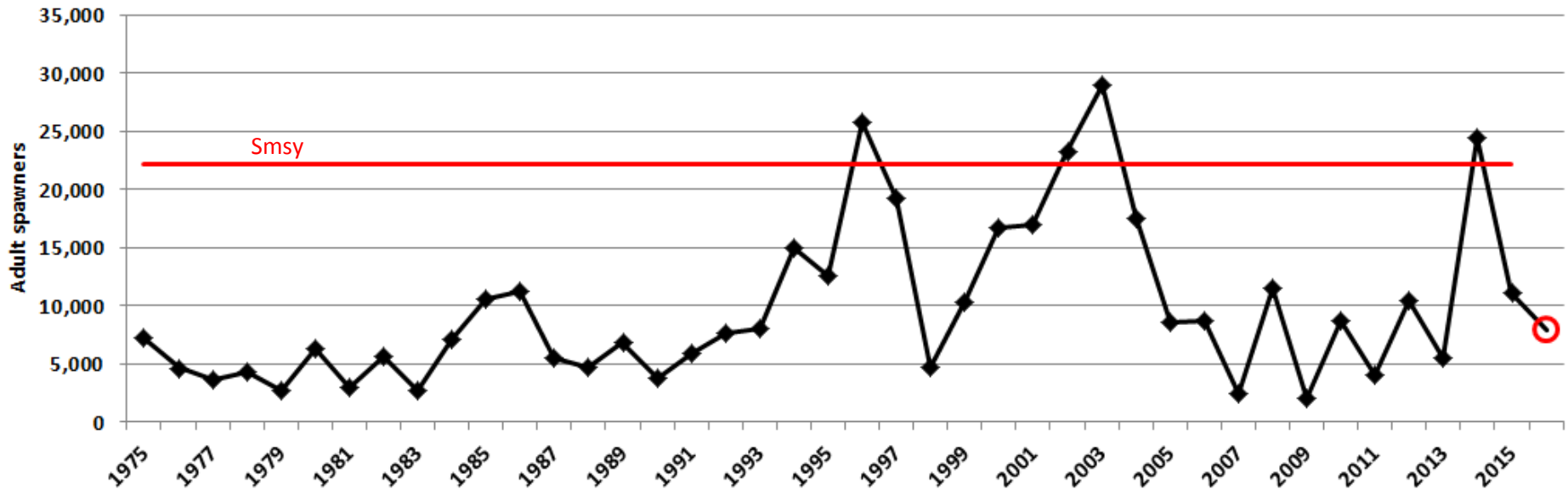
- spawner abundance is estimated using a number of methods
- mark-recapture studies - Nicola, Harrison, Lower Shuswap, Chilko
- electronic counters - Bonaparte and Deadman
- fence counts at Salmon River (Salmon Arm)
- remaining assessments are through visual surveys (aerial, foot or float)

Note: The following slides display Smsy values (spawners that produce maximum sustainable yield) as a reference point to compare against escapement trends. With the exception of Fall 4(1) Chinook, the Smsy value should not be interpreted to be the same as an escapement goal.



Escapement - Fraser Spring 4₂ Chinook

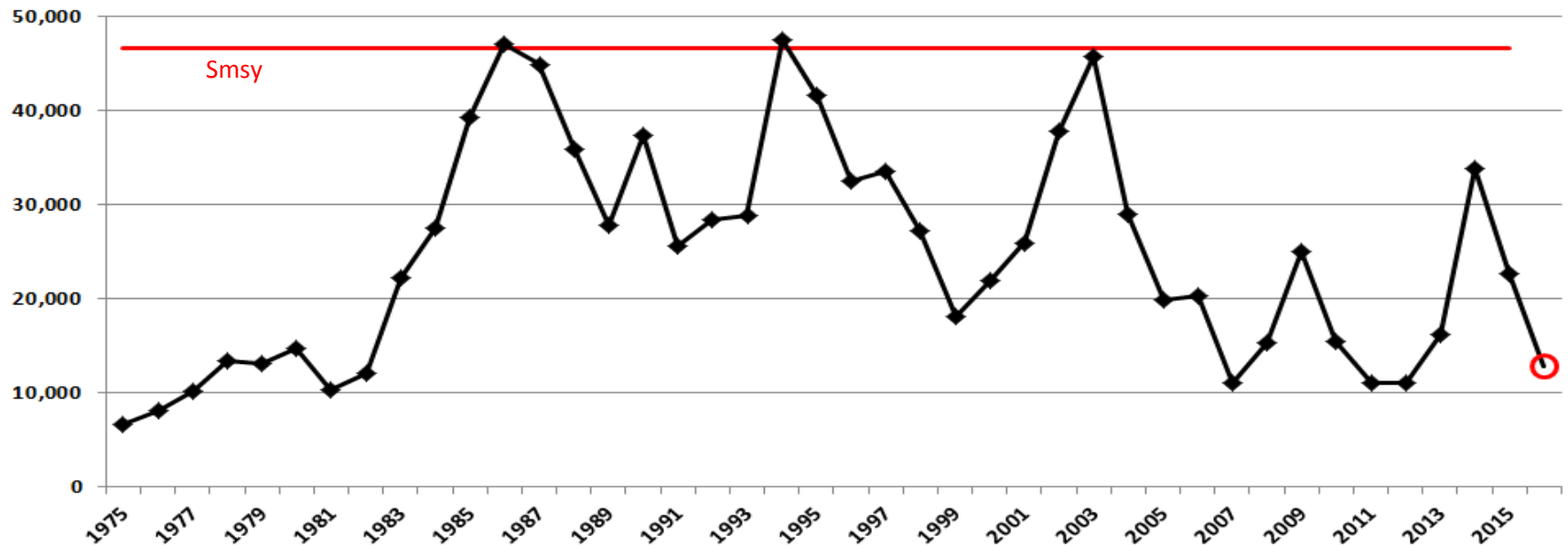
- 2016 preliminary is well-below S_{msy} and below the long-term mean
- 2016 was lower than 2015; therefore, a breakdown in the see-saw pattern observed for 10 years prior
- 2016 productivity appears below average (Nicola River CWT Indicator)
- 2014 escapement was driven by strong Bonaparte R return





Escapement - Fraser Spring 5₂ Chinook

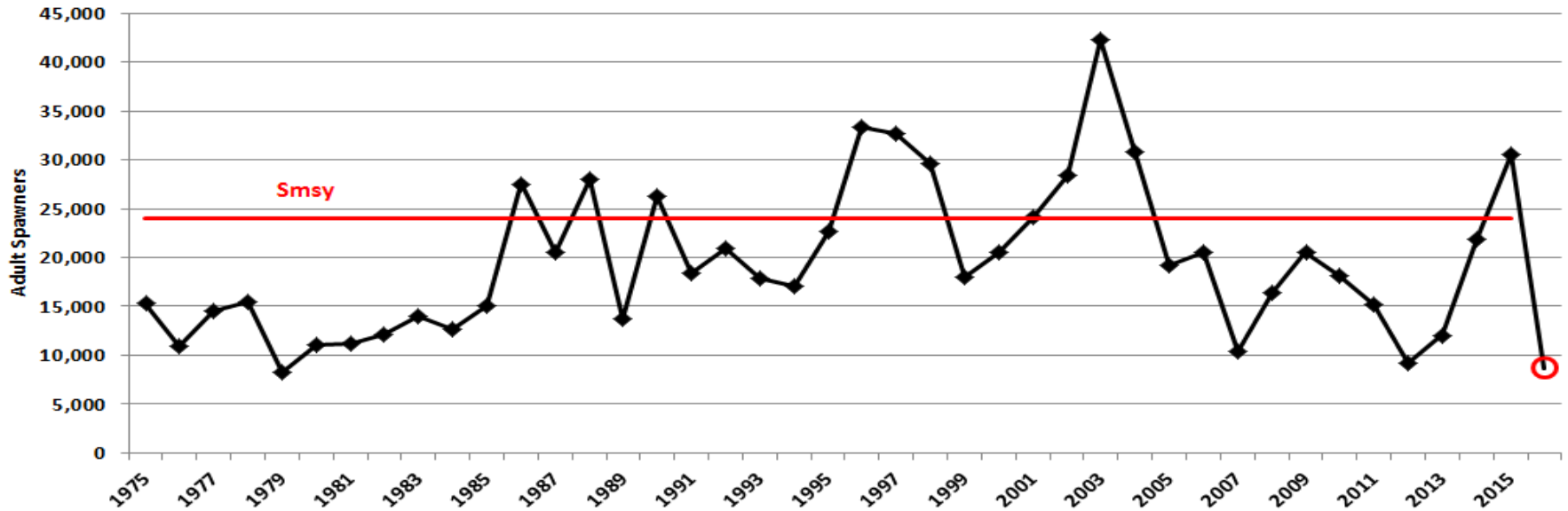
- 2016 (preliminary) was well-below Smsy and below the long-term mean
- No CWT indicator; thus, cannot estimate productivity





Escapement - Fraser Summer 5₂ Chinook

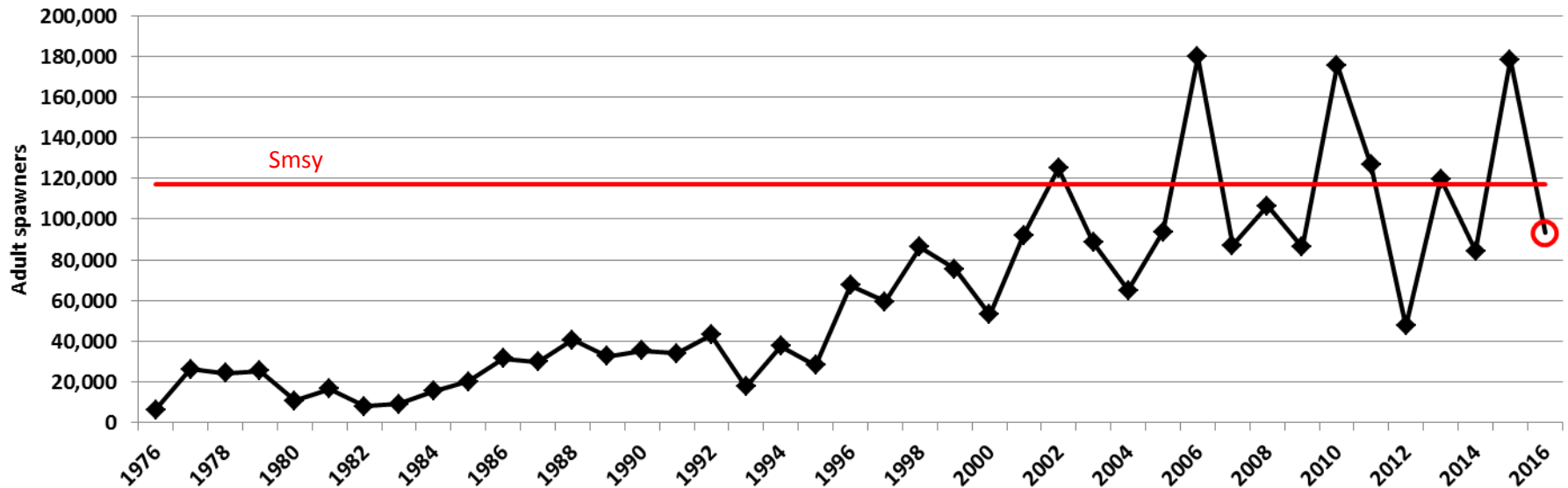
- 2016 (preliminary) was well-below Smsy and the long-term average
- No CWT indicator; thus, cannot estimate productivity
- Currently working to develop Chilko as an indicator
- 2015 driven by strong Nechako return





Escapement - Fraser Summer 4₁ Chinook

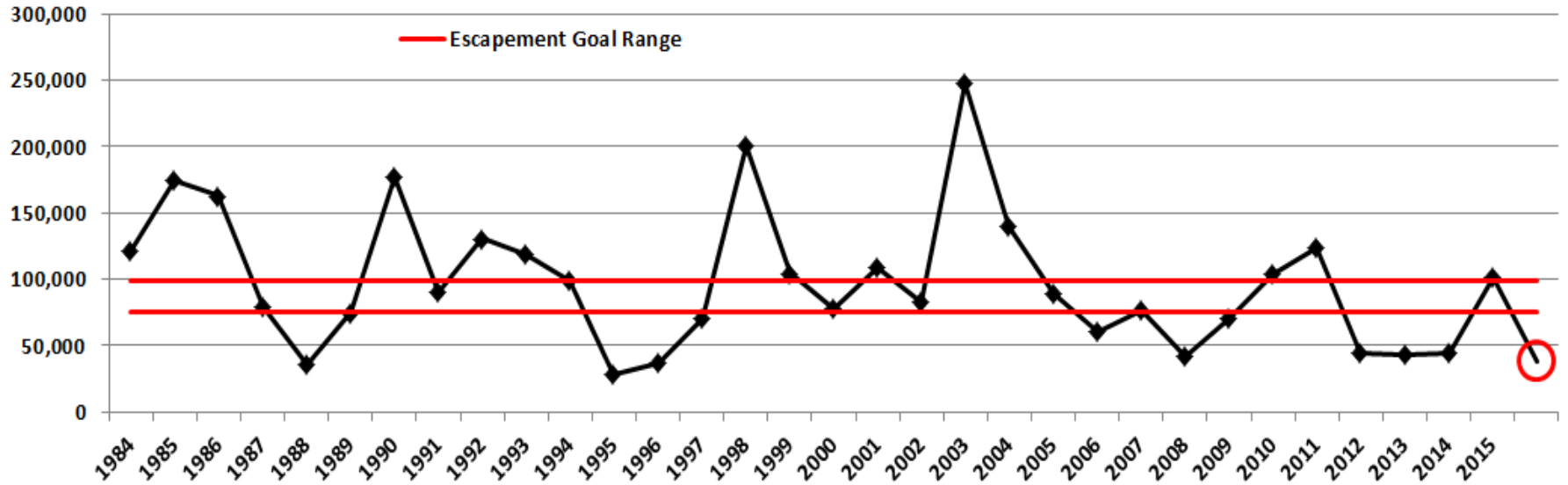
- 2016 (preliminary) was below Smsy and below the long-term average
- 2016 productivity appears well-below average (Lower Shuswap/CWT Indicator)
- Individual stocks varied relative to the long-term average for 2016: the indicator (Lower Shuswap) was well-below, Lower Adams was average and South Thompson and Little River were well-above





Escapement - Fraser Fall 4₁ Chinook

- 3 years of low escapements (2012-2014) and 2015 met escapement goal
- Very preliminary 2016 estimate well-below the escapement goal and the long-term average
- 2016 productivity appears average (Harrison); however, the long-term pattern of declining productivity, escapements maintained by reductions in exploitation
- Chinook TC has identified Harrison as a stock of concern





2016 Fraser Chinook Escapement Summary

Very Preliminary Escapement Estimates*:

- Spring 4_2 = well-below Smsy
- Spring 5_2 = well-below Smsy
- Summer 5_2 = approx. 9,000; well-below Smsy
- Summer 4_1 = approx. 93,000; below Smsy
- Fall 4_1 = 41,000; 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.



2016 Fraser River Stock Assessment Coho

Interior Fraser Coho

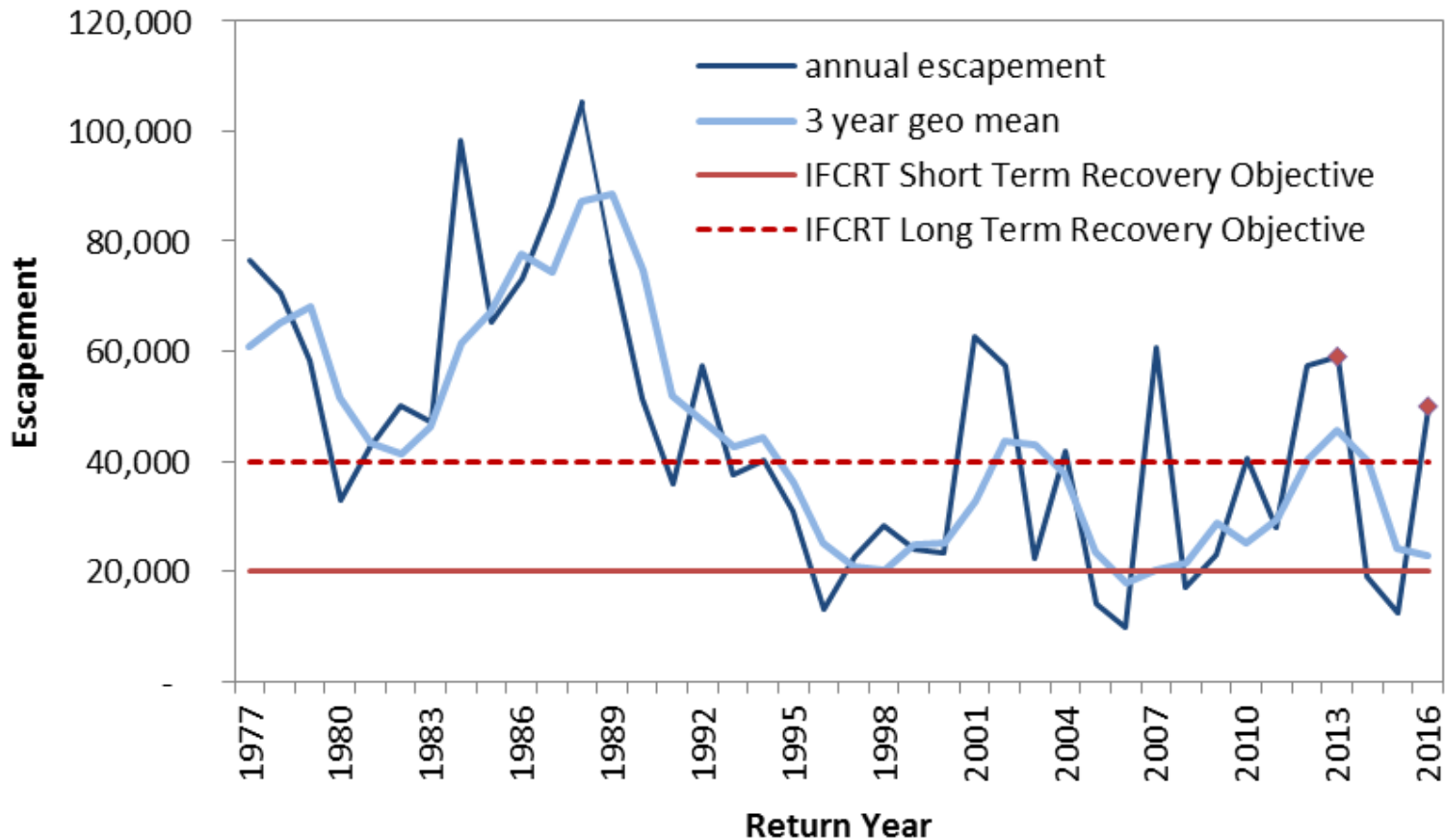
- preliminary escapement estimate approximately 60,000
- Similar to 2013 parental brood escapement of ~59,000
- 2015 aggregate escapement was 12,400

Lower Fraser Coho

- escapement assessments are still underway
- estimates are expected late February

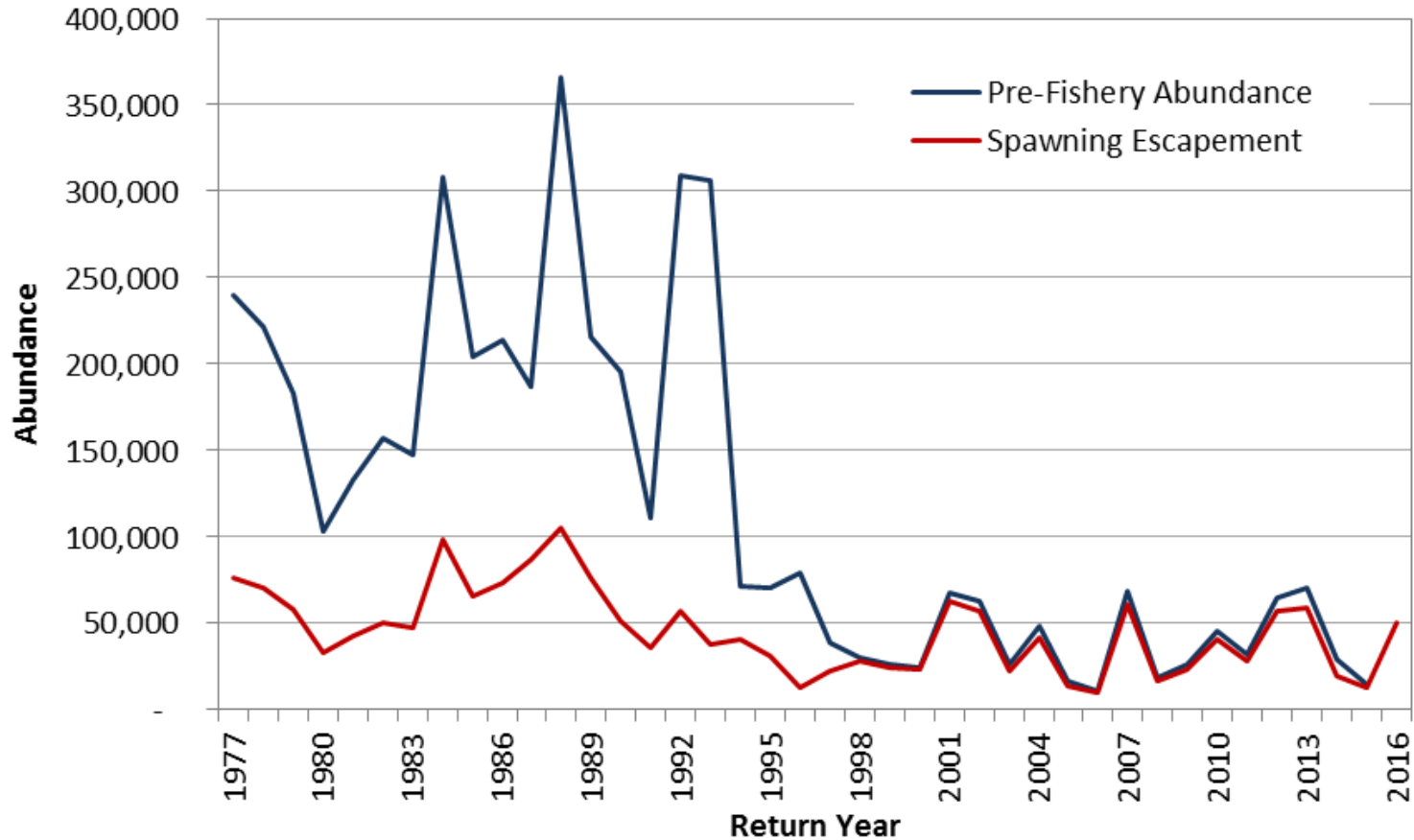


Escapement - Interior Fraser River Coho





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



2016 Fraser River Chum

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

2016 in-season assessment

- October 17th preliminary run size estimate of 1.55 million
- October 26th run size estimate was 2.0 million

Post-season assessment (escapement)

- 2016 escapement assessments are still underway
- Preliminary estimates for Harrison system indicate over 1 million spawners



2016 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.



2016 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

- late opening (October 30) harvested 472 chum; only 8 vessels participated
- 1 coho released

Area E Fraser River Chum Fishery

- two openings on October 24 and 27; harvest of 175,906 chum
- retained bycatch of 3 Chinook and 179 hatchery coho
- 49 Chinook, 919 unmarked coho, 21 steelhead and 62 sturgeon were released



2016 Fraser River Catch

Commercial and Demonstration

	Chinook		Coho		Chum	
	rel	kept	rel	kept	rel	kept
Area E						
<i>Chum directed</i>	49	3	919	179	11	175,906
Area B						
<i>Chum directed (Area 29)</i>	0	0	1	0	0	472
All Fisheries	49	3	920	179	11	176,378



2016 Fraser River Fisheries - Recreational

Chinook management actions in Region 2 (Lower Mainland)

- January 1 to July 31, no fishing for salmon.
- August 1 to August 11, the daily limit was four chinook per day with only one over 50 cm allowed to be retained.
- August 12 to September 18, no fishing for salmon. This management measure was in place due the conservation concern for co-migrating sockeye salmon.
- September 19 to December 31, the daily limit for wild or hatchery marked chinook salmon was four with only one over 62 cm allowed to be retained.



2016 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 Sp/Sum 5₂ stocks

- Zone 1 management actions in place for 2016, No fishing for Salmon

Fisheries targeting Summer 4₁ stocks

- South Thompson River Aug 22 to Sept 22, 4 per day, 2 > 50 cm
- Kamloops Lake Aug 22 to Sept 22, 4 per day, 2 > 50 cm
- Thompson River remained closed due to concerns with sockeye impacts



2016 Fraser River Fisheries - Recreational

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

All fisheries in these Regions target Spring or Summer 5₂ Chinook

- Zone 1 management actions in place for 2016, no fishing for salmon

Chinook management actions in Region 8 (Okanagan)

These fisheries target Summer 4₁ Chinook with some measures in place to avoid Besette Spring 4₂ stocks. Areas not specifically mentioned are closed to fishing for salmon year round. Fisheries were reduced this year due to low brood year in 2012 and Outlook status of 2.

- Mabel Lake and Lower Shuswap River opened to Chinook August 16 to Sept 12 , 4 per day, only 2 > 50 cm. The open area of Mabel Lake was smaller than usual due to an area closure near the mouth of the Middle Shuswap River to protect Middle Shuswap chinook.



2016 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 19 to December 31 - 2 per day (Mission to Sawmill Cr); 4 per day (below Mission)



2016 Fraser River Catch Recreational

	Chinook		Coho		Chum	
	rel	kept	rel	kept	rel	kept
Lower Fraser	data not yet available					
BC Interior	126	1,968	8	0	0	0
Totals	data not yet available					

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



2016 Fraser River Fisheries

First Nations Food, Social and Ceremonial

Chinook-directed fisheries

Lower Fraser

- above Port Mann, gillnet openings occurred from April 1 to July 8
- above Port Mann, openings for selective gear occurred from September 17 to October 8
- below Port Mann, openings between from May 7 to July 17 with gillnet gear
- managed to reduced hours to maintain effort consistent with Zone 1 management

Mid Fraser

- limited Chinook 8-inch mesh in a few areas starting late April and directed Chinook with selective gear began June
- Chinook fisheries with sockeye non-retention occurred July 1 to Aug. 1 and Aug. 10 to Sept. 23



2016 Fraser River Fisheries

First Nations Food, Social and Ceremonial

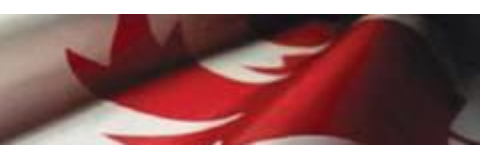
Chinook-directed fisheries (cont.)

Thompson River Upstream of Bonaparte

- licensed July 5 chinook directed until Sept. 22, groups went to 8 inch mesh above the Thompson River August 25.

Upper Fraser

- directed Chinook fisheries began June 1 with selective gear including angling and dip net
- sockeye non-retention fisheries occurred during the Early Stuart closure with selective gear, including 8” mesh gillnets





2016 Fraser River Fisheries

First Nations Food, Social, and Ceremonial

Sockeye-directed fisheries

Lower Fraser

- dry rack fisheries were open from July 26 through August 8
- most groups had 2 or 3 communal openings between July 27 and August 7

Mid Fraser

- sockeye-directed fisheries took place from Aug 2 to August 10

Thompson River Upstream of Bonaparte

- licensed July 5 to Aug 25 below Kamloops Lake sockeye directed, above Kamloops lake remained open until Sept. 23 for sockeye retention

Upper Fraser

- Deadman to Hixon: directed sockeye fishing with dipnets initiated Aug 4
- upstream of Hixon: directed gillnet fishing initiated Aug 8
- limited retention in July in terminal areas with access to only Early Stuart



2016 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 and Dunn Creek fence.

Chum-directed fisheries (Lower Fraser only)

- FSC openings on weekends from October 8 to December 4



2016 Fraser River Fisheries

First Nations Economic Opportunity and Demo

Lower Fraser River Economic Opportunity Fisheries

- only chum salmon economic opportunity fisheries in 2016 due to low sockeye returns
- chum-directed fisheries occurred between Oct 20 and Nov 8
 - 146,520 chum retained
 - bycatch of 303 coho, 6 Chinook and 1 steelhead retained
 - 550 coho, 300 Chinook, and 9 steelhead released



2016 Fraser River Fisheries First Nations Economic Opportunity and Demo

Mid and Upper Fraser Demonstration fisheries

Secwepemc Fisheries Commission

- South Thompson 4₁ Chinook on Kamloops Lake did not occur in 2016 due to concerns with sockeye impacts and low returns to the Shuswap.

Upper Fraser Conservation Alliance

- No fishery occurred in 2016 (no sockeye CCTAC)



2016 Fraser River Catch - First Nations

	Chinook		Coho		Chum		Steelhead	
	rel	kept	rel	kept	rel	kept	rel	kept
FSC								
<i>Lower Fraser</i>	53	5,812	544	578	115	61,739	80	0
<i>BC Interior</i>	3	3,985	227	27	0	0	0	0
<i>FSC Total</i>	56	9,797	771	605	115	61,739	80	0
Economic Opportunity								
<i>Lower Fraser</i>	300	6	550	303	1	146,520	9	1
<i>BC Interior</i>	0	0	0	0	0	0	0	0
<i>Ec Opp Total</i>	300	6	550	303	1	146,520	9	1
ESSR								
<i>Lower Fraser</i>	0	6,712	0	23,668	0	26,045	0	0
<i>BC Interior</i>	0	0	0	0	0	0	0	0
<i>ESSR Total</i>	0	6,712	0	23,668	0	26,045	0	0
All Catch								
<i>Lower Fraser</i>	353	12,530	1,094	24,549	116	234,304	89	1
<i>BC Interior</i>	3	3,985	227	27	0	0	0	0
<i>All Catch Total</i>	356	16,515	1,321	24,576	116	234,304	89	1



The End