



### Interior Fraser Coho (IFC) Status and 2020 Forecast

#### PST Reference Points and Exploitation Rate Caps

	Low	Moderate	Abundant
<b>Survival (CWT Indicator Programs)</b>	S ≤ 0.03	Three consecutive years 0.03 < S ≤ 0.06	Three consecutive years S > 0.06
		and	and
<b>Escapement</b>	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
<b>ER cap (US/Can)</b>	<b>0.20</b> (0.10/0.10)	<b>0.30</b> (0.12/0.18)	<b>0.45</b> (0.15/0.30)

#### Current IFC Escapement and Status Breakpoints

Return Year	Short Term Sub Pop Goal*	Short Term Escapement Proxy Goal	Actual Escapement	Goal met in three consecutive years
2014		22,731	19,442	
2015		25,758	12,879	
2016	no	27,414	61,370	no
2017	no	30,063	25,504	no
2018	no	29,781	34,737	no
2019	no	29,388	45,221	no

\*three consecutive years of greater than 1000 in half the sub populations

#### Reconstruction of Returns Above Big Bar

- Reconstruction of the IFC pre-fishery abundance was performed with the assumption of 9% ER in 2019.
- Mortality at the slide was also accounted for and was assumed to be approximately 75% based on two independent methods:
  - 1) using relative escapement to brood above and below the slide;
  - 2) radio telemetry data
- Preliminary estimates of natural IFC mortality at the slide was approximately 4500 fish.



### Current IFC Marine Survival and Status Breakpoints

Return Year	Survival	Short Term Marine Survival Goal	Goal met in three consecutive years
2014	2.1%	> 3.0%	
2015	0.8%	> 3.0%	
2016	1.4%	> 3.0%	no
2017	1.1%	> 3.0%	no
2018	2.0%	> 3.0%	no
2019	2.1%	> 3.0%	no

### 2020 Status and Proposed Management Plan

- Given the marine survival and escapement goals have not been met in three consecutive years (2017-2019), IFC status for 2020 will remain at **LOW** and the exploitation rate will be capped at 20% (10% CDN/10% USA).
- For 2020, based on poor marine conditions and the ongoing low productivity regime, the Department is planning to manage Canadian fisheries in a highly precautionary manner with fisheries management measures similar to those in place prior to 2014 (limiting Canadian ER to ~3% to 5% or less).

### 2020 IFC Forecast

Model	Fit Start	Forecast	80% Confidence Interval	Retrospective Performance from 2010			
				MPE	MAPE	MRE	MAE
Ricker	1998	39,223	31,493 - 48,849	0.09	0.44	11,924	19,405

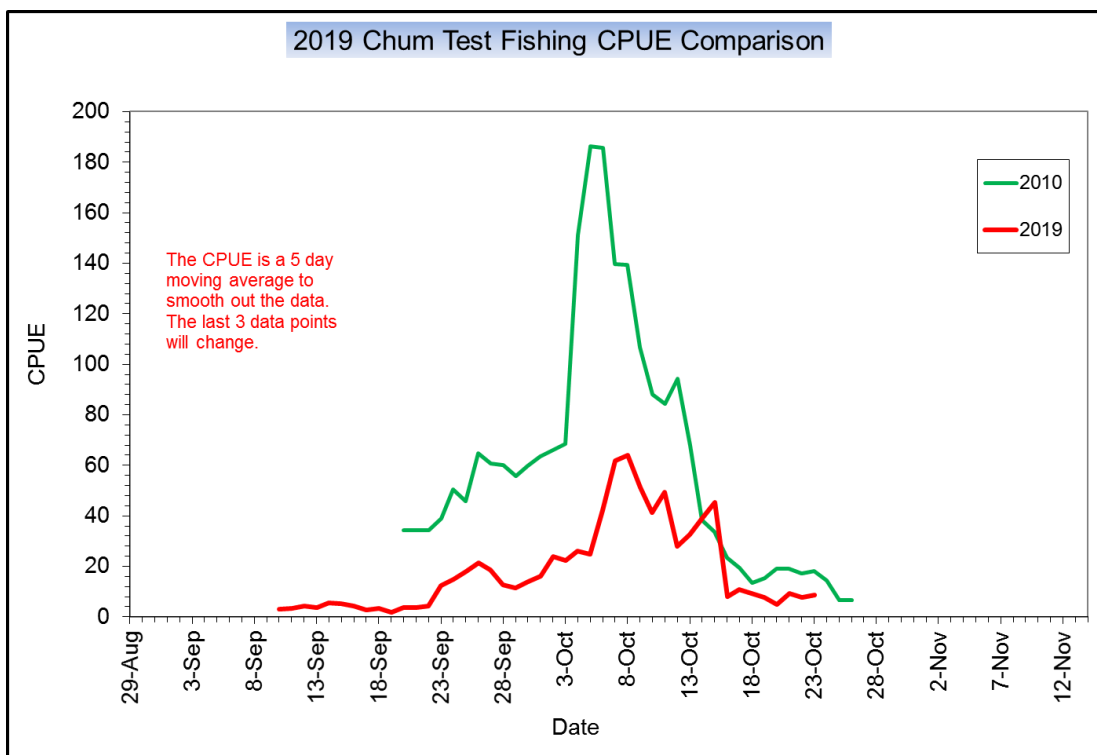
- Forecast uses the Ricker recruits per spawner average and applies it to the 2017 return of 25,504.
- Retrospective performance of the forecast model is evaluated with several measurements:
  - MPE = Mean percent error
  - MAPE = Mean absolute percent error
  - MRE = Mean relative error
  - MAE = Mean average error
- A final report of all the Southern Coho forecasts is in preparation and will be available mid-April.



### Chum Salmon Assessment

#### **Johnstone Strait (JSt) Inner South Coast Chum in-season assessment**

- In-season, a regression model is used with weekly CPUE and historical abundance to estimate the return size of all Inner South Coast Chum Salmon (including Fraser). A threshold of 1.0 million must be met to initiate commercial fisheries in South Coast marine areas (as per Chapter 6 of the Pacific Salmon Treaty).
- In 2019, when the model estimated a run size near 1.0 million with high uncertainty, other information that suggested the return was weak and not likely to reach 1.0 million included:
  - the high number of 0 catch sets during the test fishery;
  - the other biological data ( i.e. sex composition) suggesting timing wasn't that much different from average; and
  - a comparison of TF CPUE with an existing year of poor abundance such as 2010.
- Based on the above information all pre-season scheduled commercial fisheries in JSt were suspended as of October 7.



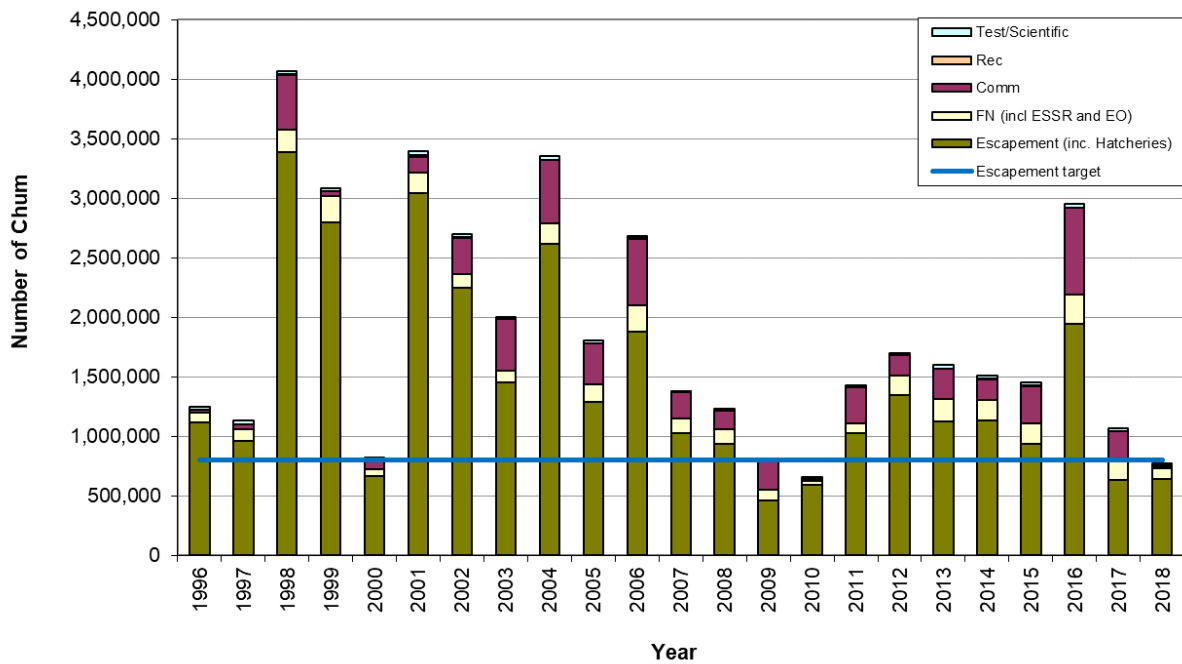
#### **Johnstone Strait and Northern Strait of Georgia escapement**

Area 12 mainland inlet summer Chum stocks are seeing some improvement over previous years, while Area 13 summer Chum stocks appear to remain low in abundance. Chum were observed entering many local creeks, but generally in low abundance. Overall the South Coast area is observing below average Chum returns. Final escapement estimates are being prepared and will be available in mid-April.



### Fraser Chum Salmon

- Catch data from the Albion test fishery is combined with historical catch and run size information in a Bayesian non-linear regression model to estimate the return to the mouth of the Fraser in-season.
- 2019 in-season assessment results:
  - October 17 preliminary run size estimate of 564,000 (FN1071)
  - October 23 run size estimate was 518,000 (FN1097)
- Based on this information, Chum-directed fisheries were limited to FSC in the Fraser mainstem and recreational opportunities in some tributaries.
- Post-season assessment (escapement):
  - 2019 escapement assessments are still underway – no preliminary estimates available





### Preliminary Catch Estimates

#### Fraser River First Nations catch:

	Coho		Chum		Steelhead	
	rel	kept	rel	kept	rel	kept
<b>FSC</b>						
Lower Fraser	383	136	27	15,432	10	-
BC Interior	0	67	0	0	-	-
<b>FSC Total</b>	<b>383</b>	<b>203</b>	<b>27</b>	<b>15,432</b>	<b>10</b>	<b>0</b>
<b>Economic Opportunity</b>						
Lower Fraser	1,005	30	133	30	11	-
BC Interior	-	-	-	-	-	-
<b>Ec Opp Total</b>	<b>1,005</b>	<b>30</b>	<b>133</b>	<b>30</b>	<b>11</b>	<b>0</b>
<b>ESSR</b>						
Lower Fraser	-	20,310	-	4,539	-	-
<i>Chilliwack</i>	-	19,149	-	1,437	-	-
<i>Inch</i>	-	1,161	-	2,645	-	-
<i>Chehalis</i>	-	0	-	457	-	-
BC Interior	-	-	-	-	-	-
<b>ESSR Total</b>	<b>0</b>	<b>20,310</b>	<b>0</b>	<b>4,539</b>	<b>0</b>	<b>0</b>
<b>All Catch</b>						
Lower Fraser	1,388	20,476	160	20,001	21	-
BC Interior	-	67	-	-	-	-
<b>All Catch Total</b>	<b>1,388</b>	<b>20,543</b>	<b>160</b>	<b>20,001</b>	<b>21</b>	<b>0</b>

*Note: Economic Opportunity fisheries include Demonstration fisheries and Tsawwassen Harvest Agreement fisheries*

#### Fraser systems recreational catch:

	Coho		Chum	
	rel	kept	rel	kept
Lower Fraser	10,484	18,474	8,887	923
<i>Fraser Mainstem</i>	0	0	0	0
<i>Chilliwack R.</i>	7,905	16,326	6,754	921
<i>Nicomen S./Norrish Cr.</i>	2,579	2,148	2,133	2
BC Interior	-	-	-	-
<b>Totals</b>	<b>10,484</b>	<b>18,474</b>	<b>8,887</b>	<b>923</b>

- **Note:** These are preliminary estimates
- **Note:** Estimates of Coho kept are nearly 100% hatchery-marked. In 2019, there were 27 adult Coho estimated as kept from Chilliwack River that were not hatchery-marked (adipose fin clipped). The release estimates do not differentiate between hatchery-marked and unmarked.



**Fraser River test fisheries catch:**

Test Fishery	Coho		Chum		Steelhead	
	rel	kept	rel	kept	rel	kept
Cottonwood	0	30	0	9	0	0
Albion	0	83	0	3,805	4	0
Whonnock	0	179	0	102	0	0
Qualark	17	1	0	0	0	0
<b>Total</b>	<b>17</b>	<b>293</b>	<b>0</b>	<b>3,916</b>	<b>4</b>	<b>0</b>

**South Coast marine areas:**

- For detailed recreational catch estimates in all South Coast marine waters (all salmon), please see South Coast Assessment Bulletin #6 (distributed with this handout).
- A reminder that all catch estimates below are preliminary, and represent catch of multiple stocks. Estimates of Fraser-origin catch in these areas are not available at this time.

**Johnstone Strait (Area 11/12) mixed-stock fishery catch:**

Fishery	Coho		Chum	
	rel	kept	rel	kept
Test fishing	251	117		4,514
Commercial	-	-	-	-
First Nation FSC	4	635	100	7,778
Recreational	4,151	2,014	<50	<50
<b>Total</b>	<b>4,406</b>	<b>2,766</b>	<b>~100</b>	<b>~12,300</b>

- **Note:** Includes Chum test catch from Sockeye and Chum Test fisheries in Johnstone Strait

**Strait of Georgia (Area 13, Area 29) mixed-stock recreational catch:**

Area	Coho		Chum	
	rel	kept	rel	kept
Area 13	7,103	684	0	380
Area 29	4,817	691	0	38
<b>Total</b>	<b>11,920</b>	<b>1,375</b>	<b>0</b>	<b>418</b>

- Strait of Georgia FSC fisheries typically occur in terminal areas that would not be expected to impact Fraser stocks, thus are not presented here.
- No commercial fisheries occurred in Area 13 or Area 29 in 2019 that impacted Coho or Chum