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February 5, 2019

To First Nations and Stakeholders,

**Re: 2019 Fraser River Chinook Conservation Measures**

This letter is intended to communicate the Department's approach for developing fisheries management actions to address conservation concerns for Fraser River Chinook in 2019. Additional information is outlined below on the conservation concerns for these stocks, proposed management approaches for consideration, and timelines for decision making. The Department will be seeking feedback on the proposed management approaches in February to inform possible adjustments to early season fisheries beginning in **April 2019**.

*Conservation concerns*

In November 2018, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) released the results for an assessment of 16 southern BC Chinook designatable units (DUs). Of these units, 13 DUs originate in the Fraser River with 7 DUs assessed as *endangered*, 4 *threatened* and 1 *special concern*; Southern Thompson Ocean Summer Chinook were deemed *not at risk*. For the other 3 DUs outside the Fraser River, 1 DU (East Vancouver Island Stream Spring; Nanaimo River) was assessed as *endangered* and 2 Southern Mainland DUs were data deficient. Status information is summarized in **Appendix 1** and at (<https://www.canada.ca/en/environment-climate-change/services/committee-status-endangered-wildlife/assessments/wildlife-species-assessment-summary-nov-2018.html>). COSEWIC is expected to submit these assessments to the Government of Canada via the annual report which is anticipated in the Fall 2019. This annual report will initiate the formal process to consider whether or not to these DUs will be listed under the *Species at Risk Act* (SARA). COSEWIC assessment of the remaining southern BC Chinook populations is also planned for 2019 with an expected report on the status of these DUs in Fall 2020.

In 2018, spawner abundances of Fraser Chinook salmon declined substantially compared with the parental brood year abundance for 4 of 5 management units (**Table 1**). In addition, productivity of many of these populations was likely further impacted by observations of smaller size at age, reduced fecundity, and lower proportions of females in spawner surveys. These observations are consistent with broad coast-wide declines in Chinook survival, size at age, and fecundity that have been documented for many populations (see [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2018/2018\\_035-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2018/2018_035-eng.html)).

**Table 1: 2018 Spawner Abundance Relative to the Parental Brood Year and Recent Recruits per Spawner (R/S).**

Management Unit	2018 Spawners	Brood Year (2013 or 2014) Spawners	% Change	Projected Recruits per Spawner (R/S) <sub>c</sub>
Spring 4 <sub>2</sub>	2,100	24,867	-92%	0.04-0.08 <sup>A</sup>
Spring 5 <sub>2</sub>	8,399	15,947	-47%	0.6-0.9 <sup>A</sup>
Summer 5 <sub>2</sub>	5,443	12,604	-57%	0.5-0.8 <sup>A</sup>
Summer 4 <sub>1</sub>	46,543	84,700	-45%	0.85-0.93 <sup>A</sup>
Fall 4 <sub>1</sub> (Harrison)	46,094	44,686	3%	0.98 <sup>B</sup>

<sup>A</sup>Several assumptions were used to project recruits to account for missing age data, missing age-specific exploitation rates, infilling for incomplete escapements, and missing information to determine total hatchery-origin escapement.

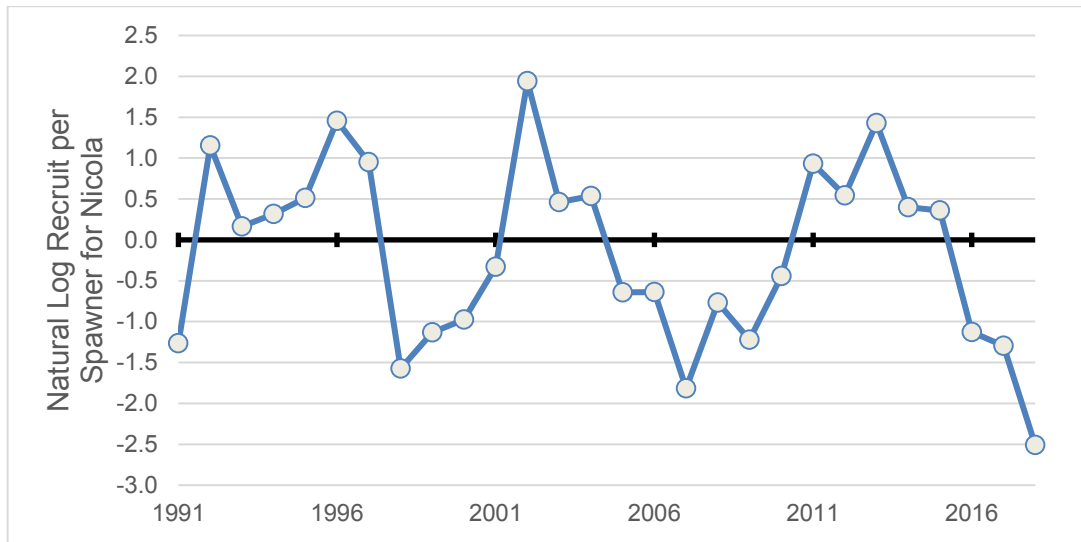
<sup>B</sup>Recruits and spawners reconstructed by cohort (brood year) using escapement goal methodology (Brown et al. 2001)

<sup>C</sup>Recruits represent the total number of adult offspring surviving to enter the fishery (i.e. pre-fishery abundance). Recruits are determined as catch plus spawners for the current year.

These declines in spawner abundance occurred even with additional fishery management actions implemented beginning in June of 2018 with the aim of reducing fishery mortality rates on Fraser Chinook salmon by 25-35%. An assessment of Coded-Wire Tag (CWT) data to determine fishery mortalities by fishery and location will be required to assess whether the target fishery reductions were achieved. This will take place when CWT data becomes available (March 2019).

The most serious declines in productivity have occurred for Spring 4<sub>2</sub> Chinook where projected R/S has declined to 0.04 to 0.08 R/S and the lowest on record since 1991. For every 100 parental spawners, between 4 and 8 adult recruits are projected to have returned before fishery removals (**Table 1; Figure 1**). When R/S is less than 1, populations will not replace themselves even in the absence of fishing mortality and spawner abundance will continue to decline; additional fishing mortality will increase declines in spawner abundance.

Figure 1: Time series of pre-fishery recruits per spawner for Spring 4<sub>2</sub> Chinook (Information for the Nicola River CWT indicator population).



Index values use a natural log scale where 0 equates to 1 recruit per spawner. Points below the x-axis (values less than 0) represent R/S less than 1 and will result in declining spawner abundance.

Recruits per spawner have also declined below 1 R/S for the Spring 5<sub>2</sub>, Summer 5<sub>2</sub>, Summer 4<sub>1</sub> and Fall 4<sub>1</sub> indicator populations; (see **Appendix 2**).

Southern Resident Killer Whales (SRKW) also continue to face threats to their survival and recovery and the Government is planning additional measures to strengthen protection of the species in 2019, these measures may have further implications for salmon fisheries. The seasonal distribution and movement patterns of SRKW are strongly associated with the availability of their preferred prey, Chinook salmon. The Department is working with a Technical Working Group to identify recommended approaches to support increased Chinook prey availability for SRKW.

#### *Proposed Management Approaches*

To address conservation concerns for Fraser River Chinook, the Department is proposing additional precautionary reductions in Canadian fishery mortalities. Proposed management objectives for each management unit are identified below

Table 2: Summary of Proposed Management Objectives

Management Unit	Management Objective	Considerations	Proposed CDN Fishery Mortality Range
Spring 4 <sub>2</sub> Spring 5 <sub>2</sub> Summer 5 <sub>2</sub>	Maximize the number of returning Chinook reaching spawning grounds by reducing Canadian fishery mortalities to the greatest extent possible.	Substantial reductions in fishery mortalities are required for Spring 4 <sub>2</sub> , Spring 5 <sub>2</sub> and Summer 5 <sub>2</sub> Chinook given their poor stock status, extremely poor productivity and expectations for continued declines in spawner abundance. Any fishery mortalities will worsen spawner declines unless productivity improves. New measures are anticipated to affect commercial, recreational and FSC fisheries.	<p>The magnitude of reductions in CDN fishery mortalities will depend on the management measures implemented. Two scenarios are proposed that would aim to reduce total CDN fishery mortalities to less than 5% (see Scenario A below) or less than 10% (see Scenario B below).</p> <p>Recent CDN fishery mortalities averaged 14.5% (2013-2016) based on Spring 4<sub>2</sub> (Nicola) CWT indicator. Reducing fishery mortalities below 5% would require an overall 65% reduction.</p>
Summer 4 <sub>1</sub>	Precautionary reduction in fishery mortalities similar to 2018 to protect co-migrating Fraser Chinook stocks of concern.	<p>South Thompson Chinook were designated by COSEWIC as <i>Not At Risk</i>; however, productivity (R/S &lt;1) and fecundity has declined for this group since 2015 and there are concerns for the Maria Slough conservation unit given that fewer than 20 spawners returned in 2018. In addition, the migration of Summer 4<sub>1</sub> Chinook overlaps with other Fraser Chinook stocks of conservation concern, particularly Summer 5<sub>2</sub> chinook.</p> <p>Additional reductions in commercial and recreational fishery harvest opportunities will also need to be considered to support priority access for FN FSC fisheries in the Fraser River given expectations for very limited FSC fishery opportunities in 2019.</p>	<p>Reducing CDN fishery mortalities to 20% or less is proposed.</p> <p>Recent fishery mortalities average 27.5% (2013-2016) based on the Lower Shuswap CWT indicator. Reducing fishery mortalities to 20% or less would require a 25% or greater reduction.</p>

<p><b>Fall 4<sub>1</sub></b></p>	<p>Fraser Fall 4<sub>1</sub> (Harrison) Chinook is the only Fraser management unit with an approved management objective.</p> <p>The management objective is to achieve the spawning escapement goal range of 75,100 to 98,500 spawners.</p> <p>A precautionary reduction in CDN fishery mortalities is proposed, similar to 2018.</p>	<p>Since 2012, the escapement goal has not been achieved, with the exception of 2015, and the COSEWIC stock status is <i>threatened</i>. Given declines in productivity (<math>R/S &lt; 1</math>) and recent average fishery mortalities, spawner abundance may not reach the lower bound of the escapement goal range in 2019.</p> <p>Additional reductions in commercial and recreational impacts will need to be considered.</p>	<p>Reducing CDN fishery mortalities to 13% or less is proposed.</p> <p>Current fishery mortalities average 17% (2013-2016) based on the Harrison CWT indicator. Reducing fishery mortalities to 13% or less would require a 25% or greater reduction.</p>
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Note: Projected Canadian fishery mortalities used in **Table 2** are based on the average fishery mortalities for all Canadian fisheries from 2013 to 2016. **Appendix 3** shows where Fraser Chinook CWT indicator stocks have been encountered in BC fisheries and the corresponding average fishery mortalities (%) for the 2013-16 period.

## *Potential Fishery Scenarios*

Achieving the proposed management objectives will require additional reductions in fisheries impacts in times and areas where Fraser Chinook are encountered in Northern and Southern BC, including commercial, recreational and First Nations fisheries. Fraser Spring 4<sub>2</sub> and Spring 5<sub>2</sub> Chinook return to spawn from early March through late July, with migration peaks in June through the lower Fraser River. Summer 5<sub>2</sub> Chinook have later timing and return to the Fraser River to spawn from late June to August with a peak in late July.

Two potential fishery scenarios are outlined below that provide examples of potential management actions that would be required for Fraser Spring 4<sub>2</sub>, Spring 5<sub>2</sub> and Summer 5<sub>2</sub> Chinook to achieve less than 5% Canadian fishery mortalities (Scenario A) or less than 10% Canadian fishery mortalities (Scenario B).

**These are initial scenarios for discussion purposes; alternative fishery scenarios and/or management actions contained within a scenario may be considered based on feedback received.**

**Scenario A** – This approach would target a high degree of protection for Fraser Spring 4<sub>2</sub>, Spring 5<sub>2</sub> and Summer 5<sub>2</sub> Chinook, to permit as many fish as possible to pass through fisheries to spawning areas. This approach would aim to reduce total Canadian fishery mortalities to less than 5%. This would require commercial troll fisheries in Northern BC (Area F) and the West Coast of Vancouver Island (Area G) to remain closed through July (Area G) and to July 17 (Area F). Marine recreational Chinook fisheries along migration corridors in southern BC would be Chinook non-retention. Recreational fisheries in the Fraser River would remain closed to fishing for salmon into August, followed by no fishing for Chinook if there are openings for other species. First Nations FSC fisheries opportunities would be restricted to unplanned events or very limited communal fisheries. For fisheries following the Summer 5<sub>2</sub> migration, fishery measures would target reductions similar to 2018 for Summer 4<sub>1</sub> and Fall 4<sub>1</sub> Chinook with possible measures including:

- Measures to reduce removals in marine recreational fisheries (e.g. reduced daily/possession limit, hatchery-marked Chinook retention, size limit adjustments).
- Closures to salmon fishing or non-retention of Chinook salmon in Fraser River recreational fisheries.
- Possible reduction in harvest allocations in commercial troll fisheries.
- Consideration of retention of Chinook by-catch and/or limited Chinook-directed opportunities for FSC fisheries.

**Scenario B** – This approach would aim to reduce Canadian fishery mortalities to 10% or less for Fraser Spring 4<sub>2</sub>, Spring 5<sub>2</sub> and Summer 5<sub>2</sub> Chinook. This would require commercial troll fisheries in Northern BC (Area F) and the West Coast of Vancouver Island (Area G) to remain closed through July (Area G) and to July 10 (Area F). Southern BC marine recreational Chinook fisheries would have reduced daily limits and/or hatchery-marked retention depending on time/location. Recreational fisheries in the Fraser River would remain closed to fishing for salmon through July until August 23. First Nations FSC fisheries would have management actions similar to 2018. For fisheries following the Summer 5<sub>2</sub> migration, fishery measures would target reductions similar to 2018 for Summer 4<sub>1</sub> and Fall 4<sub>1</sub>.

Table 3: Summary Table of proposed management actions for Scenario A and B

Fishery	Scenario A	Scenario B
<b>Commercial</b>		
NBC AABM (Area F) Troll	Closed to July 17	Closed to July 10
WCVI AABM (Area G) Troll	Closed to August 1	Closed to August 1
Kamloops Lake Chinook Demonstration Fishery	Closed	Closed
<b>Recreational</b>		
NBC AABM	<i>No measures proposed for Fraser chinook</i>	<i>No measures proposed for Fraser chinook</i>
NBC ISBM	<i>No measures proposed for Fraser chinook</i>	<i>No measures proposed for Fraser chinook</i>
WCVI AABM (Areas 121 to 127)	a) Apr 1 to July 31, Chinook non-retention; b) Aug 1 to Dec 31, 2 Chinook/day.	<i>No measures proposed for Fraser chinook</i>
WCVI ISBM	<i>No measures proposed for Fraser chinook</i>	<i>No measures proposed for Fraser chinook</i>
Johnstone Strait (Area 12)	c) Apr 1 to July 31, Chinook non-retention; d) Aug 1 to Aug 29, 1 Chinook/day (with option for terminal fisheries); e) Aug 30 to Dec 31, 2 Chinook/day.	a) Apr 1 to August 29, 1 Chinook/day (with option for terminal fisheries). b) Aug 30 to Dec 31, 2 Chinook/day.
Strait of Georgia – North Areas 13 to 17, 28, portion of 29 (29-1 and 29-2)	a) Apr 1 to July 31, Chinook non-retention; b) Aug 1 to Aug 29, 1 Chinook/day (with option for terminal fisheries); c) Aug 30 to Dec 31, 2 Chinook/day.	d) Apr 1 to August 29, 1 Chinook/day (with option for terminal fisheries). e) Aug 30 to Dec 31, 2 Chinook/day.
Strait of Georgia – South and Juan de Fuca Areas 18 to 20, portions of Area 29 (29-3 to 29-5)	a) Apr 1 to July 31, Chinook non-retention; b) Aug 1 to Aug 29, 1 Chinook/day (with option for terminal fisheries); c) Aug 30 to Dec 31, 2 Chinook/day.	a) Apr 1 to July 31, 1 chinook/day; <u>hatchery marked only</u> b) Aug 1 to Aug 29, 1 Chinook/day (with option for terminal fisheries) c) Aug 30 to Dec 31, 2 Chinook/day.
Fraser River Tidal and Non Tidal and Sub area 29-6 to 29-10	a) Jan. 1 to August 23 , No fishing for salmon. Aug. 23 to Dec. 31, Chinook non-retention	a) Jan. 1 to August 23 , No fishing for salmon. b) Aug. Aug 23 to December 31, 1 Chinook/day
Freshwater Regions 3,5,7 &8	b) closed to fishing for salmon except in some areas where fisheries on other stocks or species may take place.	c) closed to fishing for salmon except in some areas where fisheries on other stocks or species may take place.

First Nations		
South Coast	a) Fishing to FSC communal allocations as in previous years; marine FSC Chinook fisheries are largely terminal and directed at local Chinook stocks. No measures proposed for SCA First Nations chinook fisheries.	A) Fishing to FSC communal allocations as in previous years; marine FSC Chinook fisheries are largely terminal and directed at local Chinook stocks. No measures proposed for SCA First Nations chinook fisheries.
Lower Fraser	a) Jan. 1 to Aug 10, very limited impacts on chinook in FSC fisheries b) After Aug. 10, targeted chinook fishing or bycatch during sockeye-directed opportunities.	a) Jan. 1 to Aug 10, limited chinook directed FSC fisheries with effort limitations extended to Aug. 10 or bycatch during sockeye-directed opportunities b) After Aug. 10, targeted chinook fishing or bycatch during sockeye-directed opportunities.
BC Interior - d/s of Thompson Confluence	a) Jan 1 to Aug 10, very limited impacts on chinook in communal FSC fisheries. Time or gear restrictions. b) After Aug. 10 limited selective chinook fishing or bycatch during sockeye-directed opportunities until. Later in August, targeted chinook fishing or by-catch during sockeye directed fishing. Low impact terminal harvests.	a) Jan 1 to Aug 10 limited communal FSC fisheries. Time or gear restrictions. b) After Aug 10, Directed chinook fishing or bycatch during sockeye-directed opportunities.
BC Interior - u/s of Thompson Confluence Note: the only chinook in the area are Spring 5 <sub>2</sub> and Summer 5 <sub>2</sub> chinook.	Fisheries in the area constrained by preferred gear type or fishing times. Discussion required to reduce overall catch.	Fisheries in the area constrained by preferred gear type or fishing times.

**Appendix 4** outlines the specific fishery management measures that were implemented in 2018.

*Process*

The Department is seeking feedback from First Nations and stakeholders on the proposed fishery scenarios, or effective alternatives, and on the associated fishery management actions that best achieve the management objectives. The Department will consider feedback and evaluate expected outcomes for consistency with proposed management objectives, conservation and allocation priorities, support for effective implementation and fostering compliance, and consider potential impacts on fishery monitoring and stock assessment programs (e.g. CWT data). Any proposed measures will also be evaluated for compliance with new fishery reductions identified for Canadian and US Chinook indicator populations under the renewed provisions of the Pacific Salmon Treaty. The revised versions of Annex IV, Chapters 1, 2, 3, 5, and 6 (plus current text for Chapters 4, 7, and 8) have been posted at




<https://www.psc.org/publications/pacific-salmon-treaty/>. Please note that Chapters 1, 2, 3, 5, and 6 are not yet formally in force, but the Parties have agreed to provisionally apply them as of January 1, 2019.

Given the early run timing of Fraser Chinook and potential importance of these stocks to SRKW in the early spring, the Department is considering adjustments to early season fisheries that occur between April and June 2019. Department staff will meet with First Nations and stakeholders through the **end of February** to discuss potential management scenarios and supporting information on consequences of potential early season actions to support decision making.

Fishery management measures later in the season (i.e. July 2019 and onward) will be considered as part of the process to develop the 2019/2020 Salmon Integrated Fisheries Management Plans. Further discussion with First Nations and advisory groups will take place during the consultation process to develop the 2019/20 salmon IFMPs.

If you wish to provide feedback, please do so in writing, by **March 1, 2019** to the DFO Pacific Salmon Management Team at [DFO.PacificSalmonRMT-EGRSaumonduDuoPacifique.MPO@dfo-mpo.gc.ca](mailto:DFO.PacificSalmonRMT-EGRSaumonduDuoPacifique.MPO@dfo-mpo.gc.ca). Feedback received will be summarized by the Department and any recommendations on harvest planning will be provided to First Nations and the Departments advisory committees, including the Sport Fishing Advisory Board (SFAB), Commercial Salmon Advisory Board (SFAB), Marine Conservation Caucus (MCC) and Integrated Harvest Planning Committee (IHPC) for further consideration.

Yours sincerely,



Jeff Grout  
Regional Resource Manager, Salmon

Appendices (4):

1. Summary of Stock Status of Fraser River BC Chinook Designatable Units.
2. Trends in productivity (R/S) for Fraser Chinook management units.
3. Graphical representation of average Canadian total fishing mortalities for Fraser River Chinook CWT indicator populations for the 2013-2016 period.
4. Summary of 2018 fishery management measures.

Appendix 1: Stock Status of Fraser River BC Chinook Designatable Units.

Fishery Management Unit	Designatable Unit	COSEWIC Assessment	CU and WSP Status no colour = TBD gray = Data Deficient orange = red/amber	Spawning Locations
Spring 4 <sub>2</sub> Chinook	DU14 BC South Thompson Stream Summer	<i>Endangered</i>	CK-16 STh Bessette Creek	Bessette Creek, Creighton Creek; Duteau Creek; Harris Creek
	DU15 BC Lower Thompson Stream Spring	<i>Not assessed</i>	CK-17 Lower Thompson Spring	Bonaparte River; Coldwater River; Deadman River; Louis Creek; Nicola River; Spius Creek
Spring 5 <sub>2</sub> Chinook	DU3 BC Lower Fraser River Stream Spring	<i>Special Concern</i>	CK-04 LFR Spring	Birkenhead
	DU4 BC Lower Fraser River Stream Summer (Upper Pitt)	<i>Endangered</i>	CK-05 LFR Upper Pitt	Pitt River-Upper
	DU7 BC Middle Fraser River Stream Spring	<i>Endangered</i>	CK-08 FR Canyon-Nahatlatch	Anderson, Nahatlatch
	DU9 BC Middle Fraser River Stream Spring	<i>Threatened</i>	CK-10 MFR Spring	Cariboo River-upper; Chilako River; Chilcotin River upper; Chilcotin River-lower; Cottonwood River; Horsefly River; Narcosli Creek; Naver Creek; West Road River and others
	DU11 BC Upper Fraser River Stream Spring	<i>Endangered</i>	CK-12 UFR Spring	Bowron River; Dome Creek; East Twin Creek; Fraser River-above Tete Jaune; Forgetmenot Creek; Goat River; Holliday Creek; Holmes River; Horsey Creek; Humbug Creek; Kenneth Creek; McGregor River; McKale River; Morkill River; Nevin Creek; Ptarmigan Creek; Slim Creek; Small Creek; Snowshoe Creek; Swift Creek; Torpy River; Walker Creek; Wansa Creek; West Twin Creek; Willow River; and others
	DU16 BC North Thompson Stream Spring	<i>Endangered</i>	CK-18 NTHOM Spring	Albreda River; Blue River; Finn Creek; Lyon Creek; Mad River

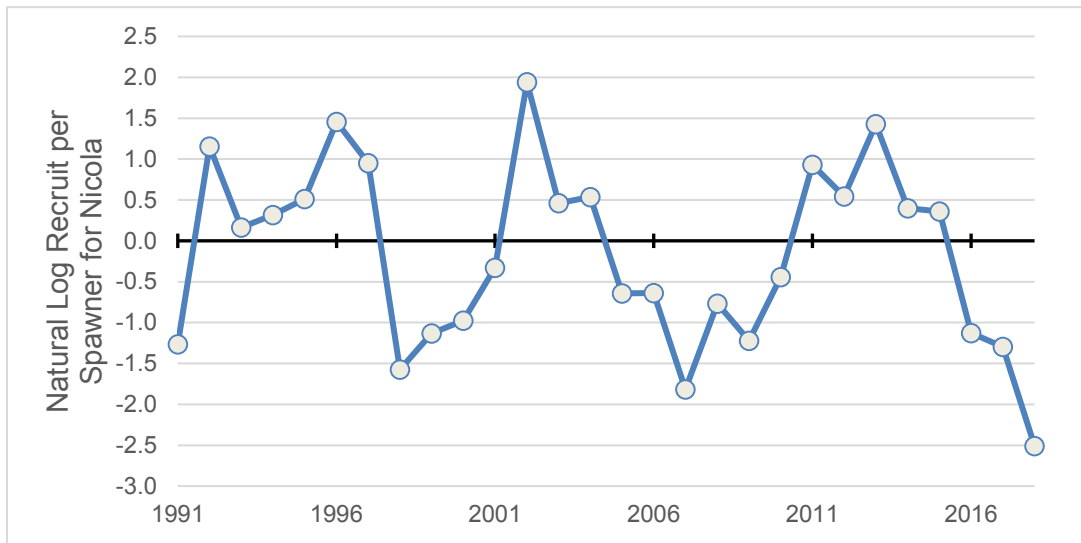
<b>Summer 5<sub>2</sub> Chinook</b>	DU5 BC Lower Fraser River Stream Summer	<i>Threatened</i>	<b>CK-06 LFR Summer</b>	Big Silver Creek; Chilliwack/Vedder River; Cogburn Creek; Douglas Creek; Green River; Lillooet River; Sloquet Creek; Tipella Cr.
	DU8BC Middle Fraser River Stream Fall	<i>Endangered</i>	<b>CK-09 MFR Portage</b>	Portage
	DU10 BC Middle Fraser River Stream Summer	<i>Threatened</i>	<b>CK-11 MFR Summer</b>	Bridge River; Cariboo River lower; Chilko River; Endako River; Kazchek Creek; Kuzkwa River; Nechako River; Quesnel River; Seton River; Stellako River; Stuart River; and others
	DU13 BC South Thompson Stream Summer	<i>Not assessed</i>	<b>CK-14 STh Summer age 5<sub>2</sub></b>	Eagle River; Salmon River
	DU17 BC North Thompson Stream Summer	<i>Endangered</i>	<b>CK-19 NTHOM Summer</b>	Barriere River; Clearwater River; Lemieux Creek; Mahood River; Mann Creek; North Thompson River; Raft River
<b>Summer 41 Chinook</b>	DU6 BC Lower Fraser River Ocean Summer	<i>Not assessed</i>	<b>CK-07 Maria Slough Summer</b>	Maria Slough
	DU12 BC South Thompson Ocean Summer	<i>Not At Risk</i>	<b>CK-13 STh Summer age 4<sub>1</sub></b> <b>CK-15 Shuswap River Summer</b>	Adams River; Little River; South Thompson River; Lower Thompson River; Lower Shuswap, Middle Shuswap
<b>Fraser Fall 4<sub>1</sub> Chinook</b>	DU2 BC Lower Fraser River Ocean Fall	<i>Threatened</i>	<b>CK-03 LFR Fall</b>	Harrison
<b>ECVI and Mainland Chinook</b>	DU19 BC East Vancouver Island Stream Spring	<i>Endangered</i>	<b>CK-23 East Vancouver Island – Nanaimo Spring</b>	Nanaimo River - Upper

**Appendix 2:** Trends in productivity (R/S) for Fraser Chinook management units.

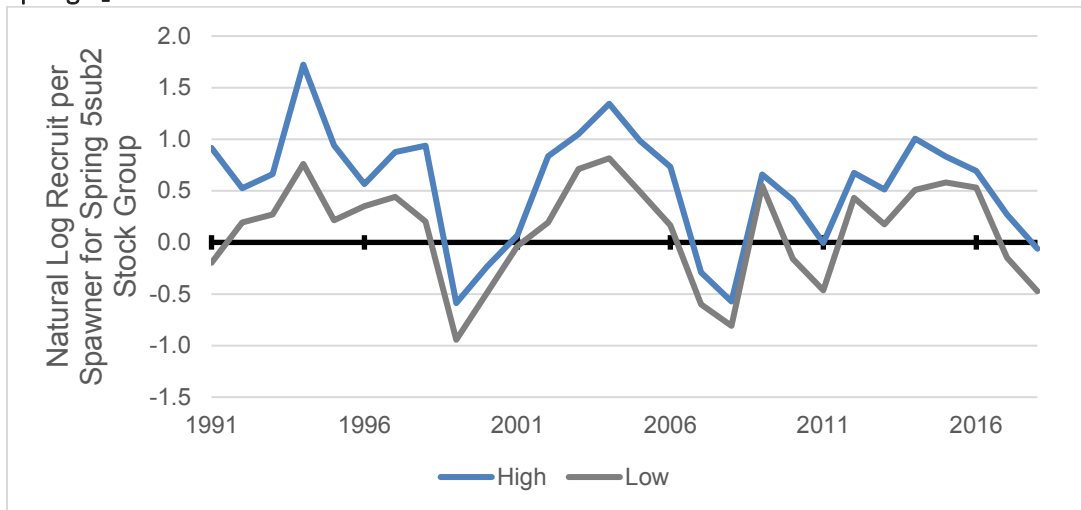
Notes:

1. For the Spring 4<sub>2</sub> and Summer 4<sub>1</sub> stocks, R/S estimates are shown for the CWT indicator stock, Nicola and Lower Shuswap, respectively.
2. For the Spring 5<sub>2</sub> and Summer 5<sub>2</sub> stocks, R/S series were generated using the CWT CYER data from Nicola and from Lower Shuswap to provide a range of R/S. This provides an index of recruitment but not a direct measure given assumptions (e.g. missing age data, missing age-specific exploitation rates, infilling for escapement, inability to measure total hatchery-origin escapement).
3. For the Fall 4<sub>1</sub>, the R/S series was based on recruits and spawners reconstructed by cohort (brood year) using the established escapement goal methodology (Brown et al. 2001)

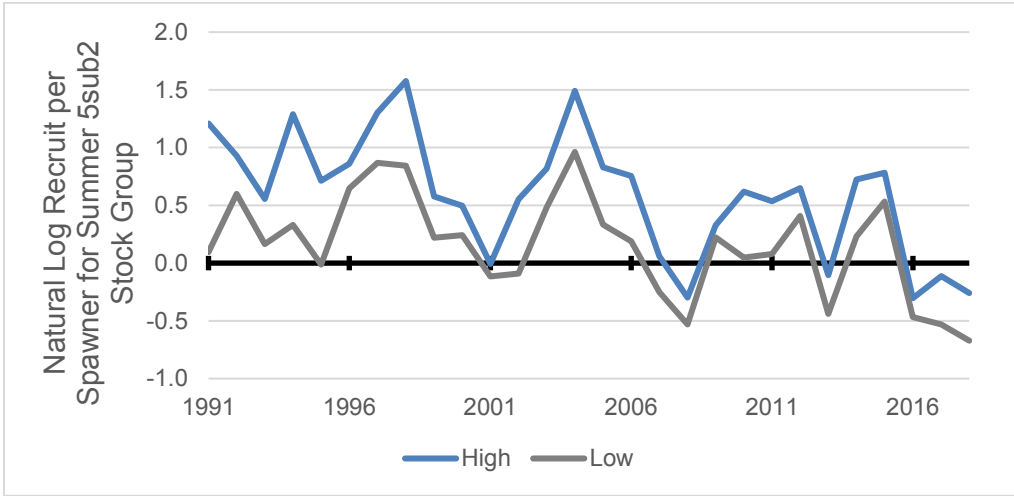
**Spring 4<sub>2</sub> (Nicola Indicator)**



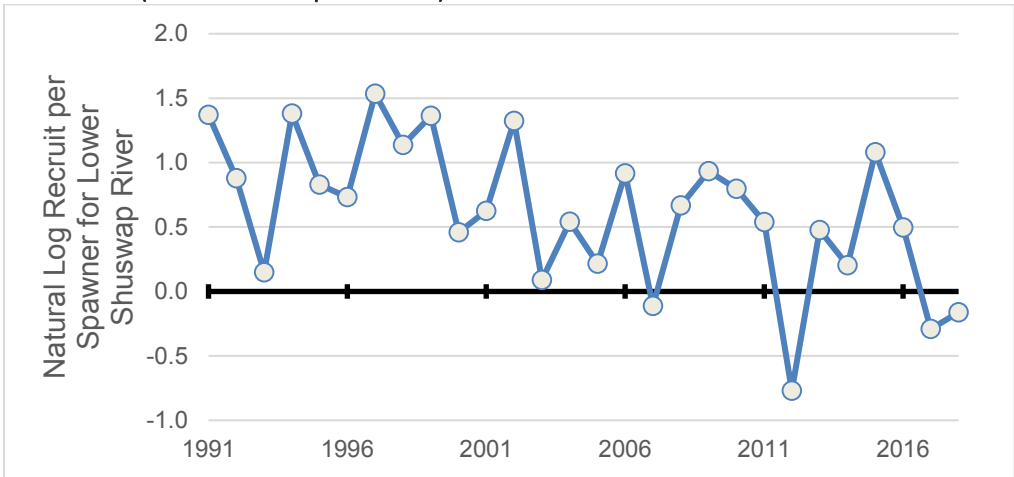
**Spring 5<sub>2</sub>**



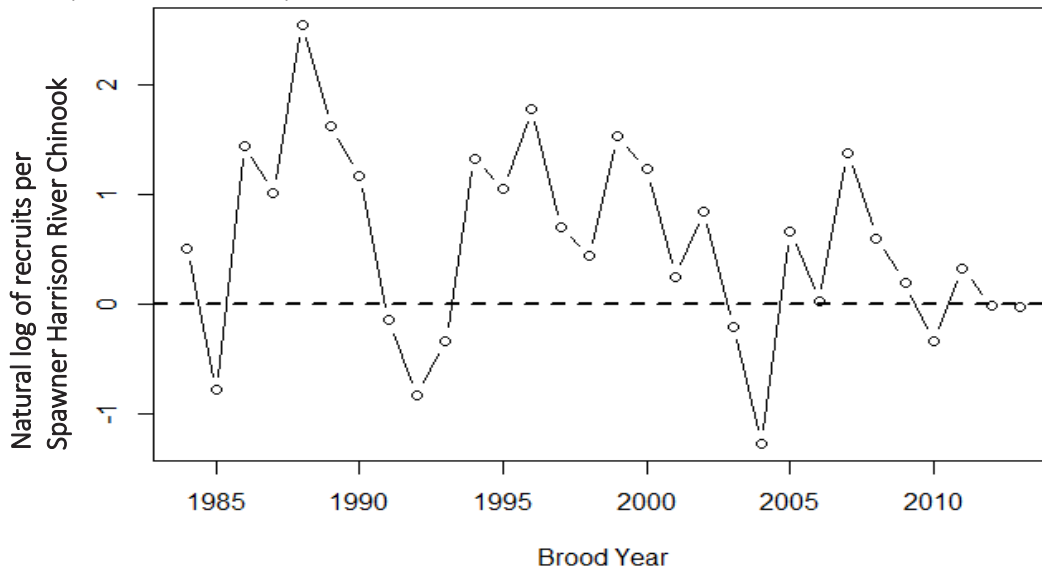
Summer 5<sub>2</sub>



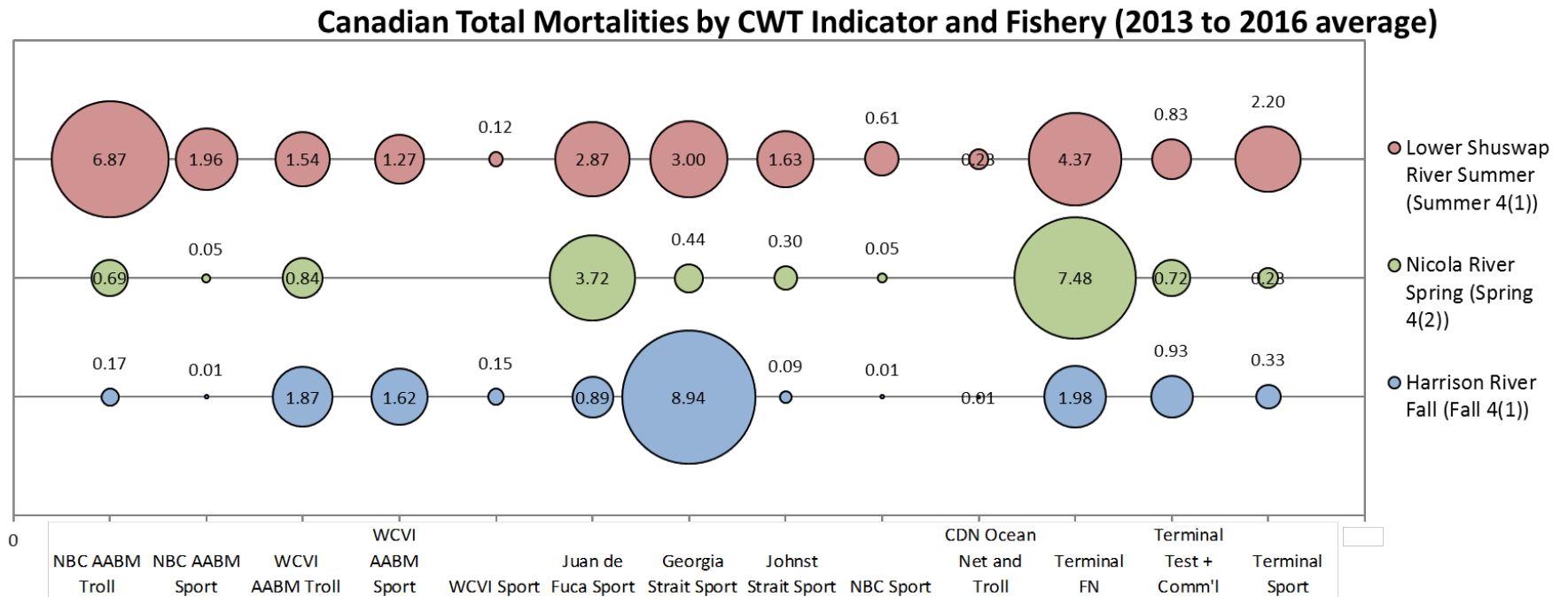
Summer 4<sub>1</sub> (Lower Shuswap indicator)



Fall 4<sub>1</sub> (Harrison indicator)



**Appendix 3:** Graphical representation of average Canadian total fishing mortalities for Fraser River Chinook CWT indicator populations for the 2013-2016 period.



Numbers in bubbles represent average number of Chinook fishery mortalities per 100 Chinook in the total run based on the hatchery CWT indicator stock. For example, CDN fishery mortalities for Nicola Chinook total 14.5% (sum of grey bubbles/100) and with US removals of 2.3% (not shown in figure); total fishery mortalities are 16.9% with remaining 83.1% of run going to spawning grounds

**Appendix 4:** Summary of 2018 fishery management measures.

**FN0428-Conservation Measures for Northern and Southern BC Chinook Salmon and Southern Resident Killer Whales**

[https://notices.dfo-mpo.gc.ca/fns-sap/index-eng.cfm?pg=view\\_notice&DOC\\_ID=208486&ID=all](https://notices.dfo-mpo.gc.ca/fns-sap/index-eng.cfm?pg=view_notice&DOC_ID=208486&ID=all)

This notice provides information on planned conservation measures for Northern and Southern BC Chinook Salmon and Southern Resident Killer Whales that will be implemented beginning June 1, 2018.

**Chinook Conservation Measures**

To address Chinook conservation concerns, DFO is implementing a precautionary 25-35% reduction in exploitation rates for Chinook stocks of concern to support conservation and promote rebuilding. These additional reductions are planned to address conservation concerns for Nass River, Skeena River and many small wild Chinook populations in Northern BC; and, all Fraser River Chinook populations (including Spring 4(2), Spring 5(2), Summer 5(2), Summer 4(1) and Fall 4(1) populations) in Southern BC.

Additional Northern BC Chinook management measures are outlined below, followed by additional Southern BC Chinook management measures.

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**Northern Commercial Fisheries**  
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Area F Troll - opening of AABM Chinook fishery delay to July 10 in addition to boundary changes. Refer to the subsequent Fishery Notice for details.

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**Northern Recreational Fisheries**  
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Please note that possession limits for Chinook Salmon are twice the daily limit.

The recreational daily limits of Chinook Salmon are being reduced in North Coast tidal waters as follows:

**Haida Gwaii:**

Effective June 1, 2018 to July 9, 2018, the daily limit is one (1) Chinook per day in Areas 1, 2, 142, and that portion of Area 101 west of 131 degrees 40.0 minutes West longitude

**North Coast:**

Effective June 1, 2018 to June 15, 2018, the daily limit is one (1) Chinook per day in Areas 3 to 5, 103 to 105, Subarea 102-1, and that portion of Area 101 east of 131 degrees 40.0 minutes West longitude

Effective June 16, 2018 to July 9, 2018, there is zero (0) retention of Chinook Salmon in Areas 3 to 5, 103 to 105, Subarea 102-1, and that portion of Area 101 east of 131 degrees 40.0 minutes West longitude

Effective July 10, 2018 to July 31, 2018, the daily limit is one (1) Chinook per day in Areas 3 to 5, 103 to 105, Subarea 102-1, and that portion of Area 101 east of 131 degrees 40.0 minutes West longitude

Effective June 1, 2018 to July 31, 2018 the daily limit is one (1) Chinook per day in Areas 6 and 106

Variation Order Number: 2018-RFQ-0307

Management measures for northern BC non-tidal waters were previously announced in FN0372 issued May 8, 2018.

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Southern BC Commercial Fisheries  
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Area G Troll:

There is no commercial fishery for AABM Chinook in June or July.

Area B Seine and Area H Troll:

Effective June 1 to September 30, 2018, there is no commercial salmon fishing in Subareas 20-3, 20-4 and that portion of Subarea 20-5 that lies west of 123 degrees 49.30 minutes west longitude (Otter Point).

Area B Seine and Area H Troll:

Effective June 1 to September 30, 2018 there is no commercial salmon fishing in Subareas 18-2, 18-4, 18-5 and 18-9.

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Southern BC Recreational Fisheries:  
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Southern BC Inside Waters

Areas 13 to 18, 28 and 29 and Subareas 19-1 to 19-6 (except those portions listed below):

Effective June 1, 2018 until September 30, 2018, the daily limit for Chinook Salmon is one (1) per day in in Areas 13 to 17, 28 and 29 with the exception of those four areas listed below under the headings Strait of Georgia, Pender Island, Juan de Fuca and Fraser River mouth. Terminal fishing opportunities at full limits for Chinook may be considered in-season if abundance permits.

Effective October 1, 2018 until further notice, the daily limit for Chinook Salmon is two (2) per day in in Areas 13 to 19, 28 and 29.

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Exceptions:  
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Strait of Georgia:

Note: this measure came into effect on May 7, 2018 as previously announced in FN0370 issued May 7, 2018.

Effective immediately until June 28, 2018 the daily limit for Chinook salmon is two (2) per day, of which only one may be greater than 67 cm in Subareas 18-1, 18-3, 18-6, 18-11, and 19-5.



Effective June 29, 2018 to July 31, 2018 the daily limit is two (2) Chinook salmon per day between both of which must be less than 85 cm in Subareas 18-1, 18-3, 18-6, 18-11, and 19-5.

Chinook salmon retained in these waters must have a fork length of at least 62cm.

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Pender Island:

Effective June 1 to September 30, 2018 there is no fishing for finfish in Subareas 18-2, 18-4, 18-5 and 18-9.

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Juan de Fuca (Subareas 19-1 to 19-4 and Area 20):

Effective June 1, 2018 to September 30, 2018 there is no fishing for finfish in Subareas 20-3, 20-4 and that portion of Subarea 20-5 that lies west of 123 degrees 49.30 minutes west longitude (Otter Point)

Effective June 1, 2018 until June 28, 2018 the daily limit for Chinook salmon is two (2) per day which may be wild or hatchery marked between 45 and 67 cm fork length or hatchery marked greater than 67 cm in Subareas 19-1 to 19-4 and 20-6 and 20-7 and that portion of Subarea 20-5 that lies east of 123 degrees 49.30 minutes west longitude (Otter Point).

Effective June 29, 2018 until July 31, 2018, the daily limit for Chinook salmon is two (2) Chinook per day which may be wild or hatchery marked between 45 and 85 cm or hatchery marked greater than 85 cm in Subareas 19-1 to 19-4 and 20-6 and 20-7 and that portion of Subarea 20-5 that lies east of 123 degrees 49.30 minutes west longitude (Otter Point).

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Fraser River Mouth (Subareas 29-6, 29-7, 29-9 and 29-10):

Effective June 1, 2018 to September 30, 2018, there is no fishing for salmon in Subareas 29-7, 29-9 and 29-10.

Effective June 1, 2018 to July 31, 2018, there is no fishing for salmon in Subarea 29-6.

Effective August 1, 2018 to September 30, 2018, there is no retention of Chinook Salmon in Subarea 29-6.

Variation Order Number: 2018-RFQ-0307; 2018-RCT-0321