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TSAWWASSEN FIRST NATION

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Post Season Fisheries

Report, 2018

FINAL

July 2019

Tsawwassen First Nation Post-Season Fisheries Report, 2018

Final Report



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*Celebrating the Ten-Year Anniversary of the
Tsawwassen First Nation Final Agreement*

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Photo (top to bottom; left to right): Mike Baird (TFN); Kyle Flindt (TFN); Liana Williams (TFN); Peter Grann and Ryan Girard (TFN).

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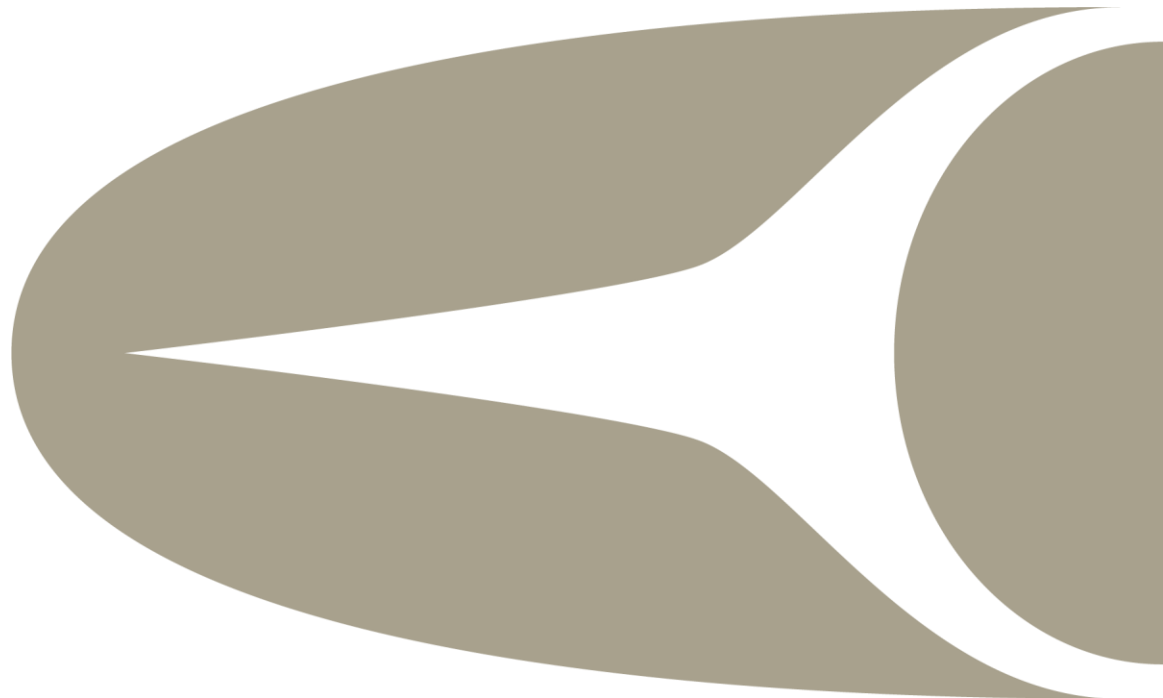
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ACRONYMS

The following acronyms are used in the TFN Annual Fishery reports:

| | |
|-------|-----------------------------------------------|
| BC | British Columbia |
| CCTAC | Canadian Commercial Total Allowable Catch |
| CPE | catch-per-effort |
| CTAC | Canadian Total Allowable Catch |
| CWT | coded wire tag |
| DFO | Fisheries and Oceans Canada |
| EO | Economic Opportunity |
| FLNRO | Forests, Land and Natural Resource Operations |
| FOG | Fisheries Operational Guidelines |
| FSC | Food, Social, and Ceremonial |
| HD | Harvest Document(s) |
| IFMP | Integrated Fisheries Management Plan |
| IFR | Interior Fraser River |
| JFC | Joint Fisheries Committee |
| JTC | Joint Technical Committee |
| LAER | Low Abundance Exploitation Rate |
| LP | limited participation |
| SARA | Species at Risk Act |
| TAC | Total Allowable Catch |
| TAFP | Tsawwassen Annual Fishing Plan |
| TCC | Terminal Commercial Catch |
| TFA | Tsawwassen Final Agreement |
| TFN | Tsawwassen First Nation |
| THA | Tsawwassen Harvest Agreement |
| TNRD | Tsawwassen Natural Resource Department |
| TOTC | Treaty Obligation Tracking Centre |

1 INTRODUCTION

1.1 Tsawwassen Final Agreement

Tsawwassen First Nation has the right to harvest for domestic purposes:

- a) Fish and aquatic plants in the Tsawwassen Fishing Area; and
- b) Intertidal bivalves in the Tsawwassen Intertidal Bivalve Fishing Area,

as outlined in the Tsawwassen Final Agreement (TFA; TFA 2007; Chapter 9). Starting on the Treaty Effective Date (3 April 2009), all Tsawwassen fisheries must be conducted in a manner that is consistent with the Tsawwassen Final Agreement, Tsawwassen Harvest Agreement (THA; THA 2009), Harvest Documents (HDs), Tsawwassen Fisheries Operational Guidelines (FOG; FOG 2013) document, Tsawwassen law, and applicable federal and provincial government laws. As indicated in the TFA, Tsawwassen fisheries must be conducted within the Tsawwassen Fishing Area or Tsawwassen Intertidal Bivalve Fishing Area (see Figure 1.1 and Figure 1.3) unless otherwise permitted in HDs or licences issued by Fisheries and Oceans Canada (DFO). Figure 1.2 identifies the boundaries of the Gulf Islands National Park Reserve territory of which some of the territory lies within Tsawwassen's Intertidal Bivalve Fishing Area (Figure 1.1).

1.2 Joint Fisheries Committee

On the Treaty Effective Date, a Joint Fisheries Committee (JFC) was formed to facilitate the planning and management of the Tsawwassen First Nation (TFN) fishing rights consistent with the content of the TFA (Chapter 9). The JFC consists of one representative from Canada, the Province, and Tsawwassen First Nation; although, additional individuals may participate in meetings to assist the designated representatives. The JFC will meet a minimum of twice yearly: first, to review the Tsawwassen Annual Fishing Plan (TAFP) and, second, to conduct a post-season review of TFN's fisheries. The JFC will also discuss other relevant matters associated with the implementation of the TFA Fisheries Chapter. For a more detailed list of functions and responsibilities of the JFC, refer to the TFA (Chapter 9) or section 8 and Appendix C of the FOG document.

A further extension of the JFC is the Joint Technical Committee (JTC) which is formed and directed by the JFC. The JTC is responsible for technical fisheries issues as set out by the JFC. The JTC operates on a consensus basis, thus, if a matter cannot be resolved it is deferred to the JFC. For more detailed list of functions and responsibilities for the JTC, refer to the FOG document.

Tsawwassen First Nation has produced comprehensive post-season fisheries reports summarizing the details of the 2009–2017 Food, Social, and Ceremonial (FSC) and THA fisheries (Blakley et al. 2010–2018). The JTC and JFC have reviewed these reports and they are now publicly circulated.

1.3 Domestic Fisheries Allocations

Tsawwassen Domestic Allocations for Fish and Aquatic Plants are calculated using formulas described in the TFA (Appendix J-2). Information used to calculate the Tsawwassen FSC allocation for Sockeye salmon (*Oncorhynchus nerka*) is based on the Canadian Total Allowable Catch (CTAC). For example:

$$\text{TFN FSC Sockeye salmon allocation} = 1\% \times \text{CTAC for CTAC} < 500,000$$

Data collected throughout the fishing season may cause changes to the CTAC; thereby modifying the TFN allocation for Sockeye salmon. Any changes that may affect the FSC allocations are to be communicated to all parties involved through the JFC. Modifications to FSC allocations may occur pre-, in-, and final in-season for an individual species.

1.4 Tsawwassen Harvest Agreement and Commercial Allocation

The Tsawwassen Harvest Agreement came into effect on 3 April 2009 for the purposes of increasing the commercial fishing capacity of the TFN (TFA 2007; Chapter 9). Tsawwassen commercial allocation for salmon is described in Clause 11 of the THA. Each year, DFO will issue HDs for the Tsawwassen commercial allocation of Sockeye, Chum (*O. keta*), and Pink salmon (*O. gorbuscha*; odd years only). Tsawwassen's commercial allocations vary with the size of the Canadian Commercial Total Allowable Catch (CCTAC) for Sockeye and Pink salmon and the Terminal Commercial Catch (TCC) for Chum salmon.

In addition, the THA allows for the commercial harvesting of crab in Management Areas I and J (see Figure 1.4). Tsawwassen First Nation may not relinquish more than five commercial crab licences on an annual basis. Crab fishers must comply with the regulations and requirements set out in the THA and any licence issued by DFO.

2 FISHERIES MANAGEMENT

2.1 Fisheries Operational Guidelines

As indicated in the TFA, “the Tsawwassen Fisheries Operational Guidelines set out the operational principles, procedures, and guidelines to assist the Parties (TFN, Canada, and British Columbia) in implementing the Fisheries chapter of the TFA.” The FOG document (FOG 2013) describes current fisheries management goals and procedures for harvestable fish stocks that reside or migrate through the Tsawwassen Fishing Area. The goals and procedures outlined in the FOG document are essential for ensuring the TFA is being implemented properly. In addition, it should be acknowledged that these goals and procedures will evolve over time, and it will be the role of the JFC to review the FOG document as needed on an annual basis to incorporate any new information (e.g., updates on escapement targets, new fisheries management policies, stock trends) that may apply to TFN fisheries management. The 2009 FOG document was revised, and revisions were approved on 24 September

2013. The 2013 FOG document is accessible via the Treaty Obligation Tracking Centre (TOTC) website (updated 2018 link below).¹

2.2 Tsawwassen Annual Fishing Plan

Every year, TFN develops a Tsawwassen Annual Fishing Plan that may be submitted for comment and feedback to the JTC before it is submitted to the JFC where it is reviewed to assist in the planning for Tsawwassen's fisheries and the issuance of HD. In 2018, the effective date of the TAFP was 1 April 2018 and carries through to 31 March 2019. Tsawwassen's Annual Fishing Plan provides the JTC and the JFC with proposed harvest plans and harvest expectations for each species (i.e., salmon, crab, bivalves, groundfish, and aquatic plants) based on pre-season forecasts. The TAFP also notifies the JTC and JFC of TFN's harvest levels, preferred harvest times, and fishing areas and methods for each species or species-group. Conservation measures for each species are also highlighted in the TAFP. Due to timing of the pre-season run size forecasts Eulachon (*Thaleichthys pacificus*), Chinook salmon (*O. tshawytscha*), Steelhead (*O. mykiss*) and White Sturgeon (*Acipenser transmontanus*), and Marine Aquatic Plants were prepared in a separate document. Refer to Appendix A for the 2018 TAFPs.

2.3 Harvest Documents

Fisheries and Oceans Canada is responsible for issuing HD for all TFN fisheries for salmon, groundfish, intertidal bivalves, crab, and other marine fish species. The Parks Canada Agency is responsible for issuing HD for TFN bivalve fisheries occurring within national park intertidal areas. The BC Ministry of Agriculture is responsible for issuing HD for aquatic plants and the BC Ministry of Forest, Lands and Natural Resource Operations is responsible for issuing HD for, provincially managed species, where applicable. Tsawwassen HD will be consistent with what is outlined in the TFA and FOG document. Tsawwassen First Nation is obligated to inform TFN fishers prior to a fishery opening of their fishing rights and any provisions outlined in the HD. Appendix B provides examples of HD issued to TFN in 2018 for the various species and fisheries (i.e., Chinook salmon FSC, Crab FSC, Eulachon Ceremonial, Sockeye salmon THA, Groundfish FSC, and Aquatic plants FSC). For further clarification of HD, refer to the TFA and FOG documents.

2.4 Catch Monitoring Procedures

As outlined in Appendix D of the FOG document: "the overall goal of the catch monitoring program is to ensure accurate information is gathered to aid all Parties in the management of the fishery and implementation of the TFA."

In order to accurately estimate FSC salmon harvest for TFN, the following data must be collected:

1. Tsawwassen First Nation FSC salmon fishers are required to report their harvest and fishing effort information after a day's fishing to the Tsawwassen Natural Resource Department (TNRD). Reporting of catch and effort can be provided via phone or on-site interview

¹ <https://nrm.sp.gov.bc.ca/sites/irrcs/totc/layouts/15/start.aspx#/> (access and login required).

conducted by a staff member of the TNRD staff (interviewers). Interviews will record catch (kept and released), effort (hours fished), and gear type (number and type of nets used) information on the “TFN Salmon Fisheries Interview Dataform” (see Appendix C). An attempt is made to contact active fishers via the phone after an FSC opening period (one or more consecutive days of fishing) to confirm complete catch and effort data.

2. Each TFN harvester will be required to maintain a daily fishing log using the “TFN Salmon Fisheries Log Dataform” (see Appendix C). It is mandatory for TFN fishers to submit salmon fishing logs after each FSC fishery, preferably at the landing site, to allow verification of the hailed catch. However, validation can also occur on-the-water or at a fishers’ residence. In previous years, catch calendars were also available to record the days when fishing occurred for each species of salmon; however, since 2013 catch calendars have not been produced due to budget constraints.
3. Tsawwassen Natural Resource Department staff will conduct random inspections of TFN FSC fishing vessels, during a fishery, to validate salmon catch. Counting a vessel’s catch or validation will either occur during an on-water interview or at landing site. The JTC proposed validation coverage be 20% or more for each fishery.
4. Within 24 hours of the close of a fishery, TNRD will provide a preliminary report to DFO that includes the number of vessels participating, the type of gear used, fishing effort (in hours), and the catch by species. Preliminary catch reports will be finalized within 48 hours of the close of a fishery.

To accurately estimate the crab and non-salmon FSC harvest for TFN, the following data must be collected:

1. Similar to the FSC salmon data collection requirements, TFN fishers are required to report any retention of FSC crab or non-salmon species. Catch and fishing effort can be reported directly to TNRD or by on-site interview conducted by a TNRD staff member. Interviewers will record catch and effort information for crab fishing on the “TFN Crab Fishing Interview Dataform” and other non-salmon species on the “TFN Other Fisheries Interview Dataform” (see Appendix C).
2. Tsawwassen First Nation fishers will be required to maintain daily fishing logs for crab fishing efforts using the “TFN Crab Fisheries Log Dataform” and all fishing efforts directed at other fish species should be recorded on the “TFN Other Fisheries Log Dataform” (see Appendix C). Tsawwassen Natural Resource Department staff will compare the logs to the on-water interviews for an accurate account of total catch and effort.
3. Food, Social, and Ceremonial fishing targeting crab and other non-salmon species will be validated like the salmon fisheries. To achieve the 20% validation coverage goal, validation will occur after a completed fishing trip, either at the landing site, on-the-water, or at the TNRD office when crabs are dropped off for distribution. Validation ensures accuracy of the information recorded on the daily fishing logs.

4. Within 72 hours of the end of each month, TNRD staff will provide a catch and effort report for FSC crab and other non-salmon species (i.e., groundfish). Tsawwassen Natural Resource Department staff will follow-up with any fishers that did not comply with the reporting requirements.
5. Tsawwassen First Nation fishers are required to identify and record harvested plants by group in the Tsawwassen First Nation Aquatic Plant Harvest Log (see Appendix C). Tsawwassen Natural Resource Department staff will submit the aggregate harvesting values to the Joint Fisheries Committee and to the Ministry of Forest, Lands, and Natural Resource Operations (FLNRO) at the conclusion of the Harvest Period defined in this Harvest document.

See Appendix D of the FOG document for further detailed information on TFN catch monitoring procedures.

3 SALMON FSC FISHERIES

3.1 Allocations

Table 3.1 summarizes TFN's FSC salmon fishery allocations for 2018 based on pre-, in-, and final in-season estimates. Tsawwassen First Nation's FSC salmon allocations for Chinook, Sockeye, Pink, Coho (*O. kisutch*), and Chum salmon were 625, 15,226, 500, and 2,576, respectively. The Chinook, Sockeye, Coho, and Chum salmon allocations remained constant throughout the 2018 fishing season. Even year returns of Fraser Pink salmon are typically too small to warrant any direct harvest of these stocks; therefore, there was no FSC allocation for Pink salmon in 2018.

The allocation for Sockeye salmon is determined using an abundance-based formula that is driven by the CTAC. As indicated in the FOG document, when the CTAC is greater than or equal to 3 million Sockeye salmon, TFN's FSC allocation is fixed at 15,226 Sockeye salmon. In 2018, the pre-season FSC Sockeye salmon allocation was determined to be 15,226 as set out in the TFA (Appendix J-2) and the FOG document (section 9.3.1; Table 9.1) and remained at that level the entire season (Appendix E).

For a comparison of TFN's 2018 salmon harvest to final in-season allocations, refer to section 3.5 (Overages and Underages).

3.2 Fishery Openings and Target Species

Table 3.2 summarizes TFN's FSC and THA (commercial) salmon fishery openings for 2018, listed by week-ending date. The FSC directed Chinook salmon fisheries began the week ending 29 April and continued through to the week ending 9 September (Table 3.2). Of the 12 directed FSC openings for Chinook salmon, there were six FSC directed Chinook which included incidental harvest of Sockeye salmon openings (HD-426, HD-433, HD-435, HD-437, HD-447, and HD-477). In addition, there were four directed FSC Sockeye salmon openings that included incidental catch of Chinook salmon (starting week ending 29 July until 26 August). Food, Social, and Ceremonial fisheries directed at

Chum salmon with incidental harvest of Sockeye, Chinook, and hatchery-marked Coho salmon began 14 October and ended 28 October.

Table 3.2 also includes a list of the THA salmon fishery openings. Further details on the THA salmon openings will be discussed in section 4.2.

3.3 Catch and Effort

Catch and effort for each salmon species was estimated from on-water and shore-based interviews by simply summing the catch and effort for all interviews. All fishers were contacted via phone after an FSC opening to confirm complete catch and effort data. This also allowed technicians to log catch and effort from fishers that were not encountered on the water. In addition, records were kept to indicate those interviews for which the catch was verified by the interviewer.

The total reported FSC harvest and effort of each salmon species is shown in Table 3.3. The overall FSC harvest of Sockeye salmon was estimated at 14,380; of this catch 68% (9,716) was harvested the weeks ending 12 and 19 August. Total FSC Chinook salmon harvest was reported at 313 with the peak (141 Chinook salmon) occurring during the week ending 2 September. The total Chum salmon harvest in the FSC fisheries was 2,506 and occurred from the weeks ending (14–28 October). The first FSC Chum salmon opening recorded majority (54%) of the total harvest (1,358; Table 3.3).

There were no directed TFN FSC fishery openings for Pink salmon, Coho salmon or Steelhead. However, 39 hatchery-marked Coho salmon were kept because they were caught incidentally during the FSC Chum salmon fisheries (Table 3.3).

Table 3.3 shows fishing effort (defined as the number of hours that nets were in the water fishing) by week. Total fishing effort for the FSC salmon fishery openings was reported as 878 hours. The highest fishing effort (254 hours) was recorded the week ending 29 July during the first FSC Sockeye salmon opening (HD-439).

Table 3.4 summarizes Tsawwassen's FSC salmon catch and effort for interviews only. To further clarify, Table 3.4 has been categorized by "interview" data versus "validated" interview data. "Validated" interview data includes those interviews where every fish was individually "counted" either on the water or at the landing site. In some cases, this included watching a fisher remove the fish from the entire set. Similarly, "interview" data includes those interviews conducted on the water; however, it was not possible to count every fish (some partially counted) because the fisher's net was currently fishing, or the catch had been processed and stored in the hull. An interview would be classified as a "hail" if it was not conducted on the water or landing site (i.e., via phone) and the fish were not observed at all. The JTC proposed that at least 20% of the salmon catch be "validated" or "counted" through interview process. Overall, the "validated" interviews represented 41% of the total fishing effort for salmon (Table 3.4). The percentages of validated interviews were broken down by species: the 20% goal was achieved for Chinook, Sockeye, hatchery-marked Coho and Chum salmon, 23%, 36%, 26% and 43%, respectively (Table 3.4). There was no recorded harvest of Steelhead or wild Coho so no validation percentage could be calculated.

Table 3.4 also compares the catch-per-effort (CPE) by species for interview data versus non-interviewed data. The average CPUE for Chinook salmon was similar for the interview data (0.20 Chinook/h) than the non-interviewed data (0.47 Chinook/h). The average Sockeye salmon CPUE from interviewed fishers (14.54 Sockeye/h) was slightly lower than that for non-interviewed fishers (17.66 Sockeye/h). Due to the vast number of Sockeye salmon (14 million salmon) returning to the Fraser River the catch rates for both the interviewed and non-interviewed fishers were extremely high as compared to 2017 (0.32 interview vs 0.18 non-interview). The average Chum salmon CPUE for the interviewed fishers during the October Chum salmon fisheries (22.35 Chum/h, n = 1,072) was higher than that for non-interviewed fishers (7.73 Chum/h). The most likely reason for the higher catch rates for the Chum salmon interview data is that surveyors are more likely to encounter the best fishers because they tend to fish more than the other fishers.

Sample sizes for Coho salmon and Steelhead CPUE were too small to make any meaningful comparisons between the interview and non-interview data.

3.4 Released Catch

Table 3.5 summarizes the fish released from nets during the Tsawwassen FSC salmon fisheries in 2018. Total release catch for sturgeon, Steelhead, flounder, Pink, Coho, Sockeye, Chinook, and Chum salmon were 63, 3, 4, 0, 2, 1, 3, and 11, respectively. Over 68% (43) of the sturgeon releases were caught between the week ending 29 July during the directed Sockeye salmon FSC fisheries.

Table 3.6 further details Tsawwassen FSC releases of sturgeon by fishing location. There was a total of 63 sturgeon released from June to September, with the highest number (39) of sturgeon caught during the week ending 29 July in the Canoe Pass to Deas Island location (T3; Statistical Area 29-14).

3.5 Overages and Underages

It is expected that the number of salmon harvested in TFN fisheries will not precisely match the TFN allocations for each species each year. Therefore, the TFA (TFA 2007; Appendix J) outlines the calculation process if there is a difference between what was caught and what was allocated (termed “overages” and “underages”), by species.

An overage occurs when Tsawwassen harvest exceeds the defined Tsawwassen allocation whereas; an underage occurs when Tsawwassen harvests less than the defined Tsawwassen allocation. Underages can occur because another group harvested more, or because there was uncertainty in the management process for that species (e.g., late season increases in the Total Allowable Catch (TAC) or uncertainty regarding the amount of fishing time required to harvest the allocation). The amount of the overage or underage will be documented in a multi-year accounting process summarized in a table in this post-season report.

Table 3.7 summarizes the Tsawwassen FSC salmon catch, allocation, balance (overages and underages), and carry forward amounts for each salmon species. Tsawwassen harvested less than the defined allocation by 312, 846, 461, and 70 for Chinook, Sockeye, Pink, and Coho salmon, respectively. No

carry forward is proposed for these since Tsawwassen fishing efforts were less than that required to harvest the TFN allocation for these species.

3.6 Correspondence and Consultation

Department of Fisheries and Oceans distributed a discussion letter on 15 February 2018 titled “Proposed 2018 Salmon Fishery Management Measures to Support Chinook Salmon Prey Availability for Southern Resident Killer Whales” (Appendix E). The purpose of the discussion paper was to identify potential salmon fishery management measures aimed at mitigating the threat of reduced Chinook salmon prey availability for Southern Resident Killer Whales (*Orcinus orca*) in 2018. The Department requested feedback on the discussion paper and TFN submitted the Southern Resident Killer Whale discussion feedback form prior to the 15 March 2018 deadline (Appendix E). Final management measures were released in the approved southern salmon IFMP released July 2018.

A second letter was circulated by the Department of Fisheries and Oceans on 22 March 2018 proposing new management measures to support the recovery of Interior Fraser River Steelhead (Appendix E). Tsawwassen First Nation responded to the letter on 19 April 2018 (Appendix E). TFN requested that further consultation occur at the 4 May 2018 JFC meeting. Final management measures were released in the approved southern salmon IFMP, indicating from the end of the Interior Fraser River (IFR) Coho salmon window closure to the end of the IFR Steelhead window closure, two FSC Chum salmon fisheries of limited duration (approximately 50% of recent years’ fishing time) may occur.

Further to the Interior Fraser River Steelhead letter, the Department invited TFN to participate in consultations on the potential emergency listing of Thompson and Chilcotin Steelhead under the Species at Risk Act (SARA). The Species at Risk Program (DFO) recovery planners presented the proposed Thompson Chilcotin Steelhead “Do Not List” and “List” management scenarios on 19 November 2018 at a TFN Natural Resource Committee meeting. In addition, TFN responded in writing to the proposed management scenarios on 29 November 2018 (Appendix E). Final decision on the emergency listing of Thompson Chilcotin Steelhead will occur in the Spring 2019.

3.7 Recommendations

The following are recommendations for the 2019 FSC fishing season:

- Prior to the weekly planning calls for Fraser salmon fisheries, TFN and DFO representatives should continue to meet, via phone or otherwise to discuss:
 - Potential conservation issues;
 - Remaining allocation balances of all salmon species;
 - Potential projected TFN fishing effort;
 - Catch monitoring and enforcement strategies that will aid in formulating options for TFN fisheries with the ultimate goal of reaching the salmon allocations as set out in the TFN Final Agreement.

- Continue to improve the completeness of catch reporting by filing reports to DFO within 24 to 48 hours, as outlined in the HD and the TFN FOG.
- Continue to improve the landing validation program. Technicians should differentiate on their datasheets and the database if a harvest was counted, estimated, hailed, or not observed. Maintain the 20% sampling goal for all salmon fisheries. In 2018, all salmon FSC fisheries recorded over a 20% validation rate.
- Continue to improve coded wire tag (CWT) sampling protocol for Chinook and Coho salmon. No adipose-clipped Chinook salmon were recorded as harvested in 2018.
- Fisheries and Oceans Canada should provide TFN with weekly updates to the TFN FSC allocations for Sockeye salmon at least two days before a potential TFN fishery where FSC Sockeye salmon could be harvested (i.e., by 6 PM on Wednesday for TFN fisheries that typically start at 6 PM on Friday).

4 SALMON THA FISHERIES

4.1 Allocations

In 2018, Tsawwassen First Nation was authorized to sell 33,595 Sockeye salmon during the commercial THA fisheries (Table 4.1). Like the FSC fisheries, the THA fisheries are subject to conservation needs and to agreed-upon monitoring, enforcement, and management regimes. There were no THA HDs issued to TFN for Chum or Pink salmon in 2018.

4.2 Fishery Openings and Target Species

Tsawwassen First Nation was involved in four THA fisheries (all less than 12 hours) under four separate licences (HD-450, HD-455, HD-459, and HD-467) starting the week ending 12 August until 26 August (Table 3.2). These fisheries were directed at Sockeye salmon; however, incidental harvest of Chinook salmon were also permitted. All efforts and attempts were made to return all non-target species, including “wild” Coho salmon, Steelhead, and sturgeon, to the water alive and unharmed. The main gear type for the Sockeye salmon THA fisheries were drift nets.

Total Sockeye salmon harvested during the THA fisheries was 37,368 (Table 4.1). Tsawwassen First Nation harvested more than the defined allocation by 3,773 Sockeye salmon. The TFN Sockeye salmon catch in excess of their Harvest Agreement Chum salmon allocation does not affect any future TFN Economic Opportunity (EO) allocations for Sockeye Salmon because there are no overage/underage provisions in the Harvest Agreement or in the Tsawwassen Final Agreement for TFN Harvest Agreement allocations.

Catch from all of these THA fisheries were estimated using a Mandatory Landing Program in which fishers’ catch were enumerated at landing sites throughout the fishing area.

Refer to section 4.4 for recommendations going forward.

4.3 Released Catch

Table 4.1 summarizes the number of fish reported as released from the THA fisheries. There were 30 sturgeon and 8 Chinook salmon recorded as released (Table 4.1). All efforts and attempts were made to return all non-target species to the water alive and unharmed.

4.4 Recommendations

The following are recommendations for the 2019 THA fisheries:

- Prior to the start of the THA fisheries, DFO and TNRD staff should stress the importance of fishers recording all of the bycatch and released catch.
- Recommended that DFO allow uncaught EO allocation to be harvested as FSC.

5 CRAB FISHERIES

5.1 FSC Openings, Catch, and Effort

There were four HDs issued for TFN FSC crab harvest which spanned the time period from 1 January to 31 December 2018, targeting Dungeness (*Metacarcinus magister*)², Graceful (*M. gracilis*)³, and Red rock crab (*Cancer productus*) species (Table 5.1). However, TFN fishers only kept Dungeness crab, which were all harvested using traps. No crabs were harvested by TFN members using hand picking, dip net, or ring net methods in 2018.

Table 5.2 summarizes the FSC crab catch and effort by licence. Overall, there were a total of 52,569 Dungeness crab kept, 38,956 Dungeness crab released, 4 Red rock crabs released was released under the four HDs. Approximately 63% (33,438) of the total Dungeness crab were harvested under the HD-407 licence from April to June. In addition, this licence, HD-407 (April to June) recorded the highest amount of fishing 62,661 trap-days. In contrast, fishers active during the October to December period (HD-488) harvested 4,280 Dungeness crab and reported 39,000 trap-days of fishing effort.

For another perspective, Table 5.3 breaks down the total Dungeness, Red rock harvest, releases and effort by month rather than licence. The month of June recorded the highest Dungeness crab harvest (15,978), whereas December had the lowest recorded harvest (701). March, October, and November were the months where Red rock crabs (4) were harvested and subsequently released. No Graceful crabs were harvested in 2018. Soft-shell crab would account for a high portion of the releases in April–June. Most of the releases in other months were crabs smaller than the minimum size limit or females.

² *Metacarcinus magister*, formally *Cancer magister*, is accepted as the current taxonomic name for Dungeness Crab (Davie 2015b; Schram and Ng 2012).

³ *Metacarcinus gracilis*, formally *Cancer gracilis*, is accepted as the current taxonomic name for Graceful Crab (Davie 2015a).

The crab sampling plan outlines a sampling validation goal of 20% similar to salmon. In addition to comparing the Dungeness crab harvest by month, Table 5.3 summarizes the validation rate by month and fishery. An overall, validation rate of 22% was achieved for Dungeness crab.

Table 5.4 summarizes by month, the number of crab surveys conducted from January to December 2018. On average, the TFN Fisheries Department staff completed 204 vehicular surveys from January to December. Generally, TNRD staff conducted 1–3 crab patrols per day depending on the timing. The vehicular surveys involved driving along the Tsawwassen shoreline and confirming, by using binoculars, if crabbers were fishing. In addition, during the peak months of crab fishing (April–November) 20 on-water crab surveys were conducted.

In 2010, TFN Fisheries Department constructed a live tank which can hold crab until they are distributed to TFN members. In 2018, the live tank continued to be operational allowing for distribution of crab throughout the year. The live tank enabled TFN to hold more crab for longer, well in advance of larger events, such as Aboriginal Day or Elder Gatherings. Effective May 2013, the TFN Crab Distribution Policy was approved. This policy is intended to provide a framework for the distribution of FSC crab to eligible TFN members.

5.2 Commercial Openings, Catch, and Effort

In 2018, there were commercial crab openings in the Fraser River areas (Statistical Areas 28 and 29). The first opening occurred in Area I from 15 June to 30 November and the second opening occurred in Area J from 15 July to 30 November (Figure 1.4). The commercial crab openings ran concurrently with the FSC crab fisheries openings, which potentially limits the FSC TFN crab harvest because of the proximity of the commercial harvest and additional impact to the crab stocks. There are TFN FSC crab fishers who also commercially harvest crab. As a condition of the commercial licence, these fishers are required to submit their commercial harvest logs to the DFO Shellfish Data Unit at the Pacific Biological Station in Nanaimo on a monthly basis.

5.3 Recommendations

The following are recommendations for the 2019 FSC crab fishing season:

- Stress the importance to the FSC crab operators about limiting crab fishing to daylight hours only.
- Stress the importance to the FSC crab operators about marking crab traps. This may deter theft of traps since unmarked traps are deemed to be illegal gear and may be removed by people who find them.
- Stress the importance to the FSC crab operators of limiting their crab fishing efforts during the soft-shell period from April to mid-June (May to mid-July in Boundary Bay).
- Continue to document the distribution of the crabs for TFN members or other First Nation communities. Fisher distribution forms should be filled in monthly along with the logs and returned to the TNRD office.

- Continue to improve the completeness and timeliness of catch reporting to DFO.
- Continue to conduct on-water and vehicular surveys at regular interval (day and night time) during the FSC crab fishery to verify catch and effort reports.
- Continue to target 20% sampling validation goal similar to salmon as outlined in the crab sampling plan.
- An enforcement committee has been established to facilitate efforts to improve compliance with harvesting requirements for FSC crab fisheries as set out in the HD for these fisheries. The TFN Enforcement Committee should continue to meet regularly in 2019 and forward any pertinent issues to the JTC.

6 OTHER FISHERIES

6.1 Eulachon

The Integrated Fisheries Management Plan (IFMP) for Eulachon indicates: “Due to stock strength and conservation concerns, only very limited Fraser River FSC fisheries for Eulachon will be considered on a case by case basis by Lower Fraser DFO area office for 2018.” The 2018 pre-season Eulachon allocation target for Tsawwassen First Nation was approximately 518 lb. Four Eulachon ceremonial HDs were issued (week endings: 8 April, 15 April, 22 April) and all were 8 hours or less in duration (Table 6.1). Table 6.2 indicates a total of 446.2 lb of Eulachon were harvested during the four ceremonial openings in April. The total combined fishing effort spanning the four Eulachon openings was just over 6 hours. Fourteen chubs were also caught and released as bycatch during the Eulachon fisheries (Table 6.2).

6.2 Recommendations

The following are recommendations for the 2019 FSC Eulachon fishing season:

- Due to the lack of stock assessment information for Eulachon, TFN is interested in either initiating or participating in an on-going study for Eulachon.
- TFN staff would like to stress the importance of the Eulachon fishery as the current allocation does not meet TFN’s FSC needs.
- TFN would like to secure funding to participate in the 2019 Eulachon Assessment Survey.

6.3 Intertidal Bivalves

Intertidal bivalves may be harvested for FSC purposes in the Intertidal Bivalve Fishing Area by any designated TFN fishermen at the times and locations defined in the Tsawwassen HD. Additionally, where the Tsawwassen Intertidal Bivalve Fishing Area overlaps with a National Park Reserve, TFN fishermen are subject to terms and conditions developed following consultation with Parks Canada. While the JTC is continuing to work on an Intertidal Bivalve HD, no HD was requested in 2018 by

TFN; therefore, no harvest of bivalves took place. Tsawwassen First Nation is continuing their consultations with, the Hul'qumi'num Treaty Group and other First Nations to discuss terms and conditions governing the harvest of intertidal bivalves where the Tsawwassen Intertidal Bivalve Fishing Area overlaps the traditional territories for other First Nations.

6.4 Shrimp and Prawns

Shrimp and prawns may be harvested for FSC purposes by TFN fishermen as outlined in a Tsawwassen HD. There was no recorded harvest of shrimp or prawns by TFN fishers in 2018 because no HD was requested.

6.5 Rockfish, Lingcod, Halibut, Dogfish, and Sole (Groundfish)

Rockfish, Lingcod, halibut, dogfish, and sole may be harvested for FSC purposes by TFN fishermen as defined in a Tsawwassen HD. There were four HDs issued for groundfish in 2018 (HD-400, HD-406, HD-427, and HD-492) starting 1 January 2018 using longline and rod and reel gear (Table 6.2). The groundfish fishery was limited to the harvest of halibut and an incidental harvest of sablefish, dogfish, Lingcod, flatfish, and rockfish.

Table 6.2 indicates that no effort or catch were recorded under any of the HDs. Tsawwassen First Nation fishers did not participate in groundfish fishery due to fisher availability.

6.6 Marine Aquatic Plants

The harvest of aquatic plants (including attached and detached kelps and seaweeds) within the Province of British Columbia is managed by the Ministry of Forests, Lands, Natural Resource Operations and Rural Development and housed in the Aquaculture program. The authority for aquatic plant licencing decisions was transferred from Seafood Safety and Quality Unit of the BC Ministry of Agriculture in July 2018. An Aquatic Marine Plant HD was issued to TFN in 2018 (Tsawwassen-03) for the period 1 April 2018 to 31 March 2019. Harvest of marine aquatic plants was limited to the Tsawwassen Fishing Area. For the full list of aquatic marine plants harvestable for domestic purposes, see the Aquatic Marine Plant HD (Appendix B). As outlined in the Aquatic Marine Plant HD, TFN harvesters are required to identify harvested plants by group and record harvest on the TFN Aquatic Plant harvest log (Appendix C). Tsawwassen First Nation fishers did not participate in this fishery (zero effort and harvest were recorded).

7 MULTI-YEAR SUMMARY

7.1 FSC Salmon Harvest and Allocations

Table 7.1 summarizes the FSC salmon harvest, maximum allocations, and the final allocation balances for each year since 2009. Tsawwassen First Nation's allocation as outlined in the TFA differs from the maximum allocation as defined in Table 7.1 as the maximum TFN harvest for a particular salmon species in a given year including overages or underages.

Over this eight-year period, the total FSC harvest for Chinook salmon ranged from 86 to 995 (2016 and 2009, respectively). Tsawwassen First Nation's FSC Chinook salmon "maximum" allocation remained constant at 625, except in 2009 when DFO approved a "special circumstances" and increased the allocation to 900 fish. There were 95 Chinook salmon harvested above the permitted allocation for 2009. However, this was balanced off by the substantial underage in 2010, with no carry forward permitted in 2010 and 2011. Fisheries and Oceans Canada approved a portion of the total TFN Chinook salmon allocation not harvested in 2012 (125) as an underage to be carried forward due to DFO management uncertainty (Blakley et al. 2013; section 3.5). The majority of the carry-over was used in 2013 with a balance of 21 Chinook salmon to be included in the 2014 "maximum allocation" (Blakley et al. 2014; Table 7.1). Of the 646 Chinook salmon allocated to Tsawwassen in 2014, only 392 were harvested. As well in 2014, TFN harvested 919 more Chum salmon than their defined allocation (2,576; Table 7.1). After detailed JTC and JFC discussions related to the issue of the TFN 2014 Chinook and Chum salmon fishery outcomes, DFO agreed with the proposal made by TFN to zero out the 2014 post-season TFN balances for both Chinook and Chum salmon (Blakley et al. 2015; section 3.5). In 2015, the only post-season balance that carried forward is the Chum salmon overage of 78 fish (Blakley et al. 2016; Table 7.1). The approved 2015 overage of 78 Chum salmon was paid back in 2016 with 81 less fish harvested from TFN's full allocation of 2,576.

For FSC Chinook salmon, TFN harvested 539 less fish than their defined allocation of 625 in 2016 (Table 3.7, Table 7.1). Tsawwassen First Nation sent a letter to DFO on 6 January and requested a Chinook salmon underage of 539 for 2016. Fisheries and Oceans Canada sent a response letter to TFN on 22 March (Blakley et al. 2017). Fisheries and Oceans Canada disagreed with TFN's underage request. Further discussion occurred at the 29 May 2017 JFC meeting held via conference call. JFC members concluded the requested Chinook salmon underage is not applied to future Chinook salmon allocations. JFC also discussed using selective gear (i.e., 8-inch gill net) to target Chinook salmon during times when there are co-migrating Sockeye salmon stocks.

In-season information indicated that the implementation of the Low Abundance Exploitation Rate (LAER) management approach was necessary for all Sockeye salmon run timing groups in 2017. Since there was no TAC available for Sockeye all directed FSC Sockeye salmon fisheries were halted and only incidental catch of Sockeye was permitted during the FSC Chinook salmon fisheries. No carry forward was proposed.

For FSC Chinook and Chum salmon, TFN harvested 68 and 30 more fish than their respective defined allocations (Table 3.7, Table 7.1) in 2017. No carry forward is anticipated with Chinook or Chum salmon due to the decrease availability of Sockeye salmon in 2017. In addition, this is the first year that TFN has been able to catch their full Chinook allocation since 2009.

In 2018, Tsawwassen harvested less than the defined FSC allocation by 312, 846, 461, and 70 for Chinook, Sockeye, Pink and Coho salmon, respectively. No carry forward is proposed since Tsawwassen fishing efforts were less than that required to harvest the TFN allocation for these species.

Since 2009, the total FSC harvest for Sockeye salmon ranged from 233 to 15,226 (2017 and 2010, respectively; Table 7.1). The Sockeye salmon FSC allocation varies depending on run size, averaging

7,344 over the last nine years. Other salmon in the FSC fisheries harvested from 2009 to 2018 ranged from 2 to 84 (Pink salmon), 3 to 220 (Coho salmon), and 1,320 to 3,495 (Chum salmon). The allocations for Pink, Coho, and Chum salmon remained constant over the eight-year period, except on even year returns of Fraser Pink salmon when the run size is typically too small to warrant any directed harvest of these stocks.

7.2 FSC Crab Harvest

The total average FSC Dungeness crab harvest over the nine-year period (2009–2018) was 40,822 and ranged from 20,327 in 2011 to 79,059 in 2016 (Table 7.2). The increase in crab catch over the years is due an increase in the number of active crab fishers from 6 to 25. The number of Dungeness crab released due to size, sex, or soft-shell has increased since 2009, averaging approximately 27,725 crabs per year. In addition, Red rock and Graceful crabs have also been caught during FSC fisheries, but have subsequently been released; except in 2010, when two Red rock crabs were recorded as kept.

7.3 THA Salmon Harvest

Table 7.3 compares the annual Tsawwassen Harvest Agreement catch and allocation from 2009 to 2018. Sockeye salmon THA fisheries occurred in 2010, 2011, 2014, and 2018 with the allocations ranging from 7,262 in 2011 to 97,981 in 2010. TFN did not harvest their full allocations in 2010, 2011, or 2014; however, in 2018 TFN harvested 3,773 more Sockeye salmon than allocated.

Pink salmon THA fisheries occurred in 2011, 2013, and 2015 (odd years only) with allocations ranging from 3,700 in 2015 to 103,500 in 2013. No Pink salmon THA fisheries occurred in 2009 and 2017 due to limited run size. In 2015, the entire THA Pink harvest was obtained upstream as part of the allocation transfer fisheries (Table 7.3). TFN did not harvest their full Pink salmon allocation in 2011, 2013, and 2015.

Chum salmon THA fisheries occurred in seven of the last nine years (2009, 2011, 2012, 2013, 2014, 2015, 2016, and 2017). No Chum salmon THA fisheries occurred in 2010 or 2018 due to limited run size. Allocations ranged from 12,029 in 2012 to 4,220 in 2011. TFN only harvested their full allocation of THA Chum salmon in three of the eight years that the fisheries occurred (2013, 2015, 2016). However, in 2012, 2013, and 2015 the remaining Chum salmon allocations were harvested upstream in the transfer fisheries (Table 7.3).

7.4 Eulachon Harvest

The total average FSC Eulachon harvest over the nine-year period (2009–2018) was 119 lb and ranged from 39.3 in 2011 to 446.2 in 2018 (Table 7.2). The increase in Eulachon catch over the years is due an increase in the annual allocation from 50 to 518 lb.

8 REFERENCES

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- THA. 2009. Tsawwassen First Nation Harvest Agreement signed by Canada, British Columbia and the Tsawwassen First Nation in December 2009. 12 p.

TABLES

Table 3.1. Tsawwassen FSC salmon fishery allocations (in pieces), 2018.

| Season | Chinook | Sockeye^{a,b} | Pink | Coho | Chum |
|-----------------|----------------|------------------------------|-------------|-------------|-------------|
| Pre-season | 625 | 15,226 | N/A | 500 | 2,576 |
| In-season | 625 | 15,226 | N/A | 500 | 2,576 |
| Final in-season | 625 | 15,226 | N/A | 500 | 2,576 |

^a See Appendix D for Fraser River Status Reports.

^b The final in-season based on update e-mail from DFO and PSC sent 28 Sep 2018.

Table 3.2. Tsawwassen FSC and THA salmon fishery openings by date, gear type, and target species, 2018.

| Weekend date | Licence # | Fishery type | Target species | Opening | Closing | Gear type(s) |
|-----------------|---------------|------------------------------|------------------------------------------------------------------------------------------|---------------|---------------|--------------------|
| | | | | Date and time | Date and time | |
| 29-Apr-18 | LFA-18-HD-410 | FSC - Communal | Chinook salmon | 27-Apr 18:00 | 29-Apr 06:00 | Drift net, set net |
| 13-May-18 | LFA-18-HD-411 | FSC - Communal | Chinook salmon | 11-May 18:00 | 13-May 06:00 | Drift net, set net |
| 03-Jun-18 | LFA-18-HD-414 | FSC - Communal | Chinook salmon | 06-Jun 08:00 | 03-Jun 20:00 | Drift net, set net |
| 10-Jun-18 | LFA-18-HD-417 | FSC - Communal | Chinook salmon | 09-Jun 08:00 | 10-Jun 20:00 | Drift net, set net |
| 17-Jun-18 | LFA-18-HD-421 | FSC - Communal | Chinook salmon | 16-Jun 08:00 | 17-Jun 20:00 | Drift net, set net |
| 24-Jun-18 | LFA-18-HD-423 | FSC - Communal | Chinook salmon | 22-Jun 18:00 | 24-Jun 18:00 | Drift net, set net |
| 01-Jul-18 | LFA-18-HD-426 | FSC - Communal | Chinook salmon with incidental harvest of Sockeye salmon | 29-Jun 18:00 | 01-Jul 18:00 | Drift net, set net |
| 08-Jul-18 | LFA-18-HD-433 | FSC - Communal | Chinook salmon with incidental harvest of Sockeye salmon | 06-Jul 18:00 | 08-Jul 18:00 | Drift net, set net |
| 15-Jul-18 | LFA-18-HD-435 | FSC - Communal | Chinook salmon with incidental harvest of Sockeye salmon | 13-Jul 18:00 | 15-Jul 18:00 | Drift net, set net |
| 22-Jul-18 | LFA-18-HD-437 | FSC - Communal | Chinook salmon with incidental harvest of Sockeye salmon | 20-Jul 18:00 | 22-Jul 18:00 | Drift net, set net |
| 29-Jul-18 | LFA-18-HD-439 | FSC - Communal | Sockeye Salmon with incidental harvest of Chinook salmon | 28-Jul 22:00 | 29-Jul 22:00 | Drift net, set net |
| 05-Aug-18 | LFA-18-HD-447 | FSC - Communal | Chinook salmon with incidental harvest of Sockeye salmon | 04-Aug 08:00 | 06-Aug 08:00 | Drift net, set net |
| 12-Aug-18 | LFA-18-HD-450 | Tsawwassen Harvest Agreement | Sockeye salmon | 07-Aug 09:00 | 07-Aug 21:00 | Drift net, set net |
| 12-Aug-18 | LFA-18-HD-454 | FSC - Communal | Sockeye salmon with incidental harvest of Chinook salmon | 11-Aug 09:00 | 11-Aug 21:00 | Drift net, set net |
| 12-Aug-18 | LFA-18-HD-455 | Tsawwassen Harvest Agreement | Sockeye salmon | 12-Aug 09:00 | 12-Aug 21:00 | Drift net, set net |
| 19-Aug-18 | LFA-18-HD-459 | Tsawwassen Harvest Agreement | Sockeye salmon | 18-Aug 09:00 | 18-Aug 17:00 | Drift net, set net |
| 19-Aug-18 | LFA-18-HD-461 | FSC - Communal | Sockeye salmon with incidental harvest of Chinook salmon | 19-Aug 09:00 | 19-Aug 17:00 | Drift net, set net |
| 26-Aug-18 | LFA-18-HD-467 | Tsawwassen Harvest Agreement | Sockeye salmon | 25-Aug 13:00 | 25-Aug 20:00 | Drift net, set net |
| 26-Aug-18 | LFA-18-HD-468 | FSC - Communal | Sockeye salmon with incidental harvest of Chinook salmon | 26-Aug 12:00 | 26-Aug 20:00 | Drift net, set net |
| 02-Sep-18 | LFA-18-HD-473 | FSC - Communal | Sockeye salmon with incidental catch of Chinook salmon | 28-Aug 14:00 | 28-Aug 21:00 | Drift net, set net |
| 02-Sep-18 | LFA-18-HD-477 | FSC - Communal | Chinook salmon with incidental catch of Sockeye salmon | 01-Sep 08:00 | 03-Sep 08:00 | Drift net, set net |
| 09-Sep-18 | LFA-18-HD-477 | FSC - Communal | Chinook salmon with incidental catch of Sockeye salmon | 01-Sep 08:00 | 03-Sep 20:00 | Drift net, set net |
| 14-Oct-18 | LFA-18-HD-495 | FSC - Communal | Chum salmon with incidental harvest of Sockeye, Chinook, and hatchery-marked Coho salmon | 13-Oct 07:00 | 14-Oct 07:00 | Drift net, set net |
| 21-Oct-18 | LFA-18-HD-499 | FSC - Communal | Chum salmon with incidental harvest of Sockeye, Chinook, and hatchery-marked Coho salmon | 20-Oct 09:00 | 21-Oct 09:00 | Drift net, set net |
| 28-Oct-18 | LFA-18-HD-501 | FSC - Communal | Chum salmon with incidental harvest of Sockeye, Chinook, and hatchery-marked Coho salmon | 27-Oct 06:00 | 27-Oct 14:00 | Drift net, set net |

Table 3.3. Summary of Tsawwassen FSC salmon catch and effort, 2018.

| Weekend date | Licence # | Vessel (h) | Tsawwassen catch (kept) | | | | | | |
|--------------------|---------------|--------------|-------------------------|-------------------------|----------------------|--------------|------------|----------------------|--------------|
| | | | Chinook | Adipose-clipped Chinook | Sockeye | Pink | Coho | Adipose-clipped Coho | Chum |
| 29-Apr-18 | LFA-18-HD-410 | 0.0 | | | No TFN participation | | | | |
| 13-May-18 | LFA-18-HD-411 | 0.0 | | | No TFN participation | | | | |
| 03-Jun-18 | LFA-18-HD-414 | 5.0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10-Jun-18 | LFA-18-HD-417 | 0.0 | | | No TFN participation | | | | |
| 17-Jun-18 | LFA-18-HD-421 | 4.0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24-Jun-18 | LFA-18-HD-423 | 7.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01-Jul-18 | LFA-18-HD-426 | 2.5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08-Jul-18 | LFA-18-HD-433 | 3.3 | 3 | 0 | 2 | 0 | 0 | 0 | 0 |
| 15-Jul-18 | LFA-18-HD-435 | 19.3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22-Jul-18 | LFA-18-HD-437 | 15.0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 |
| 29-Jul-18 | LFA-18-HD-439 | 254.0 | 24 | 0 | 3,211 | 0 | 0 | 0 | 0 |
| 05-Aug-18 | LFA-18-HD-447 | 47.0 | 23 | 0 | 41 | 0 | 0 | 0 | 0 |
| 12-Aug-18 | LFA-18-HD-454 | 143.0 | 18 | 0 | 5,370 | 0 | 0 | 0 | 0 |
| 19-Aug-18 | LFA-18-HD-461 | 68.7 | 32 | 0 | 4,346 | 0 | 0 | 0 | 0 |
| 26-Aug-18 | LFA-18-HD-468 | 25.7 | 20 | 0 | 1,004 | 0 | 0 | 0 | 0 |
| 02-Sep-18 | LFA-18-HD-473 | 20.5 | 27 | 0 | 353 | 0 | 0 | 0 | 0 |
| 02-Sep-18 | LFA-18-HD-477 | 77.3 | 141 | 0 | 53 | 0 | 0 | 0 | 4 |
| 14-Oct-18 | LFA-18-HD-495 | 98.4 | 7 | 0 | 0 | 0 | 0 | 29 | 1,358 |
| 21-Oct-18 | LFA-18-HD-499 | 61.3 | 2 | 0 | 0 | 0 | 0 | 10 | 763 |
| 28-Oct-18 | LFA-18-HD-501 | 25.9 | 0 | 0 | 0 | 0 | 0 | 0 | 381 |
| Totals | | 878.0 | 313 | 0 | 14,380 | 0 | 0 | 39 | 2,506 |
| Maximum allocation | | | 625 | | 15,226 | 2,500 | 500 | | 2,576 |
| Remaining | | | 312 | | 846 | 2,500 | 461 | | 70 |

Table 3.4. Summary of Tsawwassen FSC salmon catch and effort (vessel-hours) for interviews only and comparison of catch-per-effort estimates for fishers interviewed while fishing (interviewed) and those reporting after the fishery (non-interviewed).

| Weekend date ^a | Licence # | Vessel (h) | Tsawwassen catch (kept) | | | | | | | |
|------------------------------------------------------------|---------------|------------|-------------------------|---------|----------------------|------|-----------------|------|-------|-----------|
| | | | Adipose-clipped | | | | Adipose-clipped | | | |
| | | | Chinook | Chinook | Sockeye | Pink | Coho | Coho | Chum | Steelhead |
| 29-Apr-18 | LFA-18-HD-410 | | | | No TFN participation | | | | | |
| 13-May-18 | LFA-18-HD-411 | | | | No TFN participation | | | | | |
| 03-Jun-18 | LFA-18-HD-414 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10-Jun-18 | LFA-18-HD-417 | | | | No TFN participation | | | | | |
| 17-Jun-18 | LFA-18-HD-421 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24-Jun-18 | LFA-18-HD-423 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01-Jul-18 | LFA-18-HD-426 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08-Jul-18 | LFA-18-HD-433 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15-Jul-18 | LFA-18-HD-435 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22-Jul-18 | LFA-18-HD-437 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 29-Jul-18 | LFA-18-HD-439 | 188 | 19 | 0 | 2,401 | 0 | 0 | 0 | 0 | 0 |
| 05-Aug-18 | LFA-18-HD-447 | 12 | 6 | 0 | 16 | 0 | 0 | 0 | 0 | 0 |
| 12-Aug-18 | LFA-18-HD-454 | 55 | 0 | 0 | 685 | 0 | 0 | 0 | 0 | 0 |
| 19-Aug-18 | LFA-18-HD-461 | 32 | 23 | 0 | 1,933 | 0 | 0 | 0 | 0 | 0 |
| 26-Aug-18 | LFA-18-HD-468 | 5 | 4 | 0 | 200 | 0 | 0 | 0 | 0 | 0 |
| 02-Sep-18 | LFA-18-HD-473 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02-Sep-18 | LFA-18-HD-477 | 8 | 10 | 0 | 6 | 0 | 0 | 0 | 0 | 0 |
| 14-Oct-18 | LFA-18-HD-495 | 29 | 0 | 0 | 0 | 0 | 0 | 10 | 537 | 0 |
| 21-Oct-18 | LFA-18-HD-499 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 294 | 0 |
| 28-Oct-18 | LFA-18-HD-501 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 241 | 0 |
| Total (interviews) | | 361 | 71 | 0 | 5,241 | 0 | 0 | 10 | 1,072 | 0 |
| Total (non-interviews) | | 518 | 242 | 0 | 9,139 | 0 | 0 | 29 | 1,434 | 0 |
| Grand total | | 878 | 313 | 0 | 14,380 | 0 | 0 | 39 | 2,506 | 0 |
| Total catch interviewed | | 41% | 23% | 0% | 36% | N/A | 0% | 26% | 43% | N/A |
| Total catch counted ^b | | 357 | 71 | 0 | 5,241 | 0 | 0 | 10 | 1,072 | 0 |
| % of catch counted ^b | | 41% | 23% | 0% | 36% | N/A | 0% | 26% | 43% | N/A |
| Catch-per-effort (CPE) for all interview data | | | | | | | | | | |
| Interview data only | | | 0.20 | 0.00 | 14.54 | 0.00 | 0.00 | 0.03 | 22.35 | 0.00 |
| Non-interview data only | | | 0.47 | 0.00 | 17.66 | 0.00 | 0.00 | 0.06 | 7.73 | 0.00 |
| Catch-per-effort (CPE) for validated interview data | | | | | | | | | | |
| Validated data only | | | 0.20 | 0.00 | 14.70 | 0.00 | 0.00 | 0.03 | 22.33 | 0.00 |

^a Chum salmon CPE calculated using October fisheries only.

^b Interviews where every fish was counted.

Table 3.5. Tsawwassen bycatch from the FSC salmon fisheries, 2018.

| Weekend date | Licence # | Vessel (h) | Released ^a | | | | | | | |
|---------------|---------------|--------------|-----------------------|-----------|----------------------|----------|----------|----------|----------|-----------|
| | | | Sturgeon | Steelhead | Flounder | Pink | Coho | Sockeye | Chinook | Chum |
| 29-Apr-18 | LFA-18-HD-410 | 0.0 | | | No TFN participation | | | | | |
| 13-May-18 | LFA-18-HD-411 | 0.0 | | | No TFN participation | | | | | |
| 03-Jun-18 | LFA-18-HD-414 | 5.0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10-Jun-18 | LFA-18-HD-417 | 0.0 | | | No TFN participation | | | | | |
| 17-Jun-18 | LFA-18-HD-421 | 4.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24-Jun-18 | LFA-18-HD-423 | 7.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01-Jul-18 | LFA-18-HD-426 | 2.5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08-Jul-18 | LFA-18-HD-433 | 3.3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15-Jul-18 | LFA-18-HD-435 | 19.3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22-Jul-18 | LFA-18-HD-437 | 15.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 29-Jul-18 | LFA-18-HD-439 | 254.0 | 43 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05-Aug-18 | LFA-18-HD-447 | 47.0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12-Aug-18 | LFA-18-HD-454 | 143.0 | 3 | 0 | 4 | 0 | 0 | 0 | 0 | 0 |
| 19-Aug-18 | LFA-18-HD-461 | 68.7 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| 26-Aug-18 | LFA-18-HD-468 | 25.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02-Sep-18 | LFA-18-HD-473 | 20.5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02-Sep-18 | LFA-18-HD-477 | 77.3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 14-Oct-18 | LFA-18-HD-495 | 98.4 | 0 | 2 | 0 | 0 | 2 | 1 | 0 | 0 |
| 21-Oct-18 | LFA-18-HD-499 | 61.3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 28-Oct-18 | LFA-18-HD-501 | 25.9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Totals | | 878.0 | 63 | 3 | 4 | 0 | 2 | 1 | 3 | 11 |

^a All fish were released alive.

Table 3.6. Tsawwassen FSC releases of sturgeon (bycatch) by date and location, 2018.

| Weekend date | Locations ^a | | | | | Totals |
|---------------------------|------------------------|----------|-----------|-----------|----------|-----------|
| | T1 | T2 | T3 | T4 | T5 | |
| 29-Apr-18 | - | - | - | - | - | 0 |
| 13-May-18 | - | - | - | - | - | 0 |
| 03-Jun-18 | - | - | 4 | - | - | 4 |
| 10-Jun-18 | - | - | - | - | - | 0 |
| 17-Jun-18 | - | - | - | - | - | 0 |
| 24-Jun-18 | - | - | - | - | - | 0 |
| 01-Jul-18 | - | - | 3 | - | - | 3 |
| 08-Jul-18 | - | - | - | 2 | - | 2 |
| 15-Jul-18 | - | - | 2 | - | - | 2 |
| 22-Jul-18 | - | - | - | - | - | 0 |
| 29-Jul-18 | - | - | 39 | 4 | - | 43 |
| 05-Aug-18 | - | - | - | 3 | - | 3 |
| 12-Aug-18 | - | - | 2 | 1 | - | 3 |
| 19-Aug-18 | - | - | - | - | - | 0 |
| 26-Aug-18 | - | - | - | - | - | 0 |
| 02-Sep-18 | - | - | - | 3 | - | 3 |
| 14-Oct-18 | - | - | - | - | - | 0 |
| 21-Oct-18 | - | - | - | - | - | 0 |
| 28-Oct-18 | - | - | - | - | - | 0 |
| Totals^b | 0 | 0 | 50 | 13 | 0 | 63 |

^a T1 = Roberts Bank (29-6, 29-7), T2 = Sandheads (29-9, 29-10), T3 = Canoe Pass to Deas (29-14), T4 = Steveston-Pattullo (29-13), T5 = Pattullo-Port Mann (29-17), T6 = North Arm (29-12).

^b All sturgeon were released alive.

Table 3.7. Tsawwassen FSC salmon overages and underages based on 2018 allocation.

| | Chinook ^a | Sockeye ^a | Pink | Coho ^a | Chum ^a |
|--------------------------|----------------------|----------------------|------|-------------------|-------------------|
| Annual allocations | 625 | 15,226 | N/A | 500 | 2,576 |
| Previous carry forward | - | - | - | - | - |
| Total allocation: | 625 | 15,226 | 0 | 500 | 2,576 |
| Total catch | 313 | 14,380 | 0 | 39 | 2,506 |
| Fish provided to TFN | - | - | - | - | - |
| Total catch: | 313 | 14,380 | 0 | 39 | 2,506 |
| Balance: | 312 | 846 | 0 | 461 | 70 |
| Carry forward: | - | - | - | - | - |

^a Underage not carried forward due to limited Tsawwassen harvesting effort.

Table 4.1. Tsawwassen catch summary for THA salmon fisheries, 2018.

| Weekend date | Licence # | Effort (h) | Kept | | | | | | Sold | | | Total retained | | | | Released | | | | | | |
|----------------------------------------|---------------|--------------|-----------|-------------------------|------------|----------|----------------------|----------|---------------|----------|----------|----------------|-----------|----------|----------|-----------|-----------|----------|----------|----------|----------|----------|
| | | | Chinook | Adipose-clipped Chinook | Sockeye | Pink | Adipose-clipped Coho | Chum | Sockeye | Chinook | Chum | Sockeye | Chinook | Chum | Pink | Sturgeon | Steelhead | Chinook | Sockeye | Pink | Coho | Chum |
| 12-Aug-18 | LFA-18-HD-450 | 182.8 | 5 | 0 | 217 | 0 | 0 | 0 | 6,137 | 0 | 0 | 6,354 | 5 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 |
| 12-Aug-18 | LFA-18-HD-455 | 162.1 | 3 | 0 | 50 | 0 | 0 | 0 | 13,044 | 0 | 0 | 13,094 | 3 | 0 | 0 | 28 | 0 | 5 | 0 | 0 | 0 | 0 |
| 19-Aug-18 | LFA-18-HD-459 | 112.6 | 0 | 0 | 141 | 0 | 0 | 0 | 8,300 | 0 | 0 | 8,441 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 26-Aug-18 | LFA-18-HD-467 | 129.2 | 14 | 0 | 191 | 0 | 0 | 2 | 9,288 | 0 | 0 | 9,479 | 14 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Totals | | 586.6 | 22 | 0 | 599 | 0 | 0 | 2 | 36,769 | 0 | 0 | 37,368 | 22 | 2 | 0 | 30 | 0 | 8 | 0 | 0 | 0 | 0 |
| Total TFN in-season allocation | | | | | | | | | | | | 33,595 | | | | | | | | | | |
| Total TFN harvest | | | | | | | | | | | | 37,368 | | | | | | | | | | |
| Remaining after TFN harvest | | | | | | | | | | | | -3,773 | | | | | | | | | | |
| Allocation transferred upstream | | | | | | | | | | | | 0 | | | | | | | | | | |
| Remaining after transfer | | | | | | | | | | | | 0 | | | | | | | | | | |

Table 5.1. Tsawwassen FSC crab fishery openings by target species, date, and gear type, 2018.

| Licence # | Fishery type | Target species ^a | Opening | Closing | Gear type(s) |
|---------------|----------------|-----------------------------|---------------|---------------|---------------------------------------|
| | | | Date and time | Date and time | |
| LFA-18-HD-401 | FSC - Communal | Crab | 01-Jan 00:01 | 31-Mar 23:59 | Handpicking, dip net, ring net, traps |
| LFA-18-HD-407 | FSC - Communal | Crab | 01-Apr 00:01 | 30-Jun 23:59 | Handpicking, dip net, ring net, traps |
| LFA-18-HD-428 | FSC - Communal | Crab | 01-Jul 00:01 | 30-Sep 23:59 | Handpicking, dip net, ring net, traps |
| LFA-18-HD-488 | FSC - Communal | Crab | 01-Oct 00:01 | 31-Dec 23:59 | Handpicking, dip net, ring net, traps |

^a Crab species include Dungeness, Graceful, and Red rock crabs.

Table 5.2. Tsawwassen FSC Dungeness and Red rock crab catch and effort by licence, 2018.

| Licence # | Date | Dungeness crab | | Red rock crab | | Effort | |
|---------------|-----------------|----------------|---------------|---------------|----------|---------------|----------------|
| | | Kept | Released | Kept | Released | (h) | Trap-days |
| LFA-18-HD-401 | 01 Jan - 31 Mar | 4,826 | 4,149 | 0 | 1 | 22,597 | 38,866 |
| LFA-18-HD-407 | 01 Apr - 30 Jun | 33,438 | 26,505 | 0 | 0 | 32,777 | 62,661 |
| LFA-18-HD-428 | 01 Jul - 30 Sep | 10,025 | 4,910 | 0 | 0 | 14,827 | 30,430 |
| LFA-18-HD-488 | 01 Oct - 31 Dec | 4,280 | 3,392 | 0 | 3 | 22,304 | 39,000 |
| Totals | | 52,569 | 38,956 | 0 | 4 | 92,505 | 170,957 |

Table 5.3. Tsawwassen FSC Dungeness and Red rock crab catch and effort by month, 2018.

| Licence # | Month | Dungeness crab | | Red rock crab | | Effort (h) | Trap-days | Validated Dungeness crab | |
|---------------|-----------|----------------|---------------|---------------|----------|---------------|----------------|--------------------------|-----------|
| | | Kept | Released | Kept | Released | | | Kept ^a | % counted |
| LFA-18-HD-401 | January | 1,287 | 840 | 0 | 0 | 4,501 | 8,886 | 296 | 23 |
| | February | 1,500 | 1,660 | 0 | 0 | 8,352 | 16,373 | 299 | 20 |
| | March | 2,039 | 1,649 | 0 | 1 | 9,744 | 13,607 | 503 | 25 |
| LFA-18-HD-407 | April | 3,930 | 4,153 | 0 | 0 | 8,271 | 15,392 | 549 | 14 |
| | May | 13,530 | 12,781 | 0 | 0 | 10,819 | 20,162 | 3,716 | 27 |
| | June | 15,978 | 9,571 | 0 | 0 | 13,687 | 27,107 | 4,127 | 26 |
| LFA-18-HD-428 | July | 7,564 | 3,103 | 0 | 0 | 7,099 | 14,156 | 740 | 10 |
| | August | 1,180 | 706 | 0 | 0 | 2,112 | 4,400 | 341 | 29 |
| | September | 1,281 | 1,101 | 0 | 0 | 5,616 | 11,874 | 295 | 23 |
| LFA-18-HD-488 | October | 2,252 | 2,208 | 0 | 1 | 10,694 | 21,754 | 558 | 25 |
| | November | 1,327 | 599 | 0 | 2 | 5,298 | 7,838 | 150 | 11 |
| | December | 701 | 585 | 0 | 0 | 6,312 | 9,408 | 0 | 0 |
| Totals | | 52,569 | 38,956 | 0 | 4 | 92,505 | 170,957 | 11,574 | 22 |

^a The total number of validated crab kept were counted 100%.

Table 5.4. Summary of crab patrol surveys conducted in 2018.

| Month | Survey type (# of days/month) | |
|---------------|-------------------------------|-----------------|
| | Vehicular | On-water (boat) |
| January | 18 | 0 |
| February | 14 | 0 |
| March | 14 | 0 |
| April | 15 | 3 |
| May | 27 | 4 |
| June | 21 | 3 |
| July | 14 | 3 |
| August | 5 | 1 |
| September | 14 | 1 |
| October | 22 | 4 |
| November | 16 | 1 |
| December | 24 | 0 |
| Totals | 204 | 20 |

Table 6.1. Tsawwassen FSC Eulachon fishery openings by target species, date, and gear type, 2018.

| Weekend date | Licence # | Fishery type | Target species | Daily opening | Daily closing | Gear type(s) |
|-----------------|------------------|----------------|----------------|---------------|---------------|--------------|
| | | | | Date and time | Date and time | |
| 08-Apr-18 | LFA-18-HD-LP-401 | FSC - Communal | Eulachon | 07-Apr 14:00 | 07-Apr 22:00 | Drift net |
| | | FSC - Communal | Eulachon | 08-Apr 14:00 | 08-Apr 22:00 | Drift net |
| 15-Apr-18 | LFA-18-HD-LP 401 | FSC - Communal | Eulachon | 09-Apr 20:00 | 10-Apr 04:00 | Drift net |
| | | FSC - Communal | Eulachon | 10-Apr 20:00 | 11-Apr 04:00 | Drift net |
| 15-Apr-18 | LFA-18-HD-LP-404 | FSC - Communal | Eulachon | 13-Apr 14:00 | 13-Apr 20:00 | Drift net |
| | | FSC - Communal | Eulachon | 14-Apr 14:00 | 14-Apr 20:00 | Drift net |
| | | FSC - Communal | Eulachon | 15-Apr 14:00 | 15-Apr 20:00 | Drift net |
| 22-Apr-18 | LFA-18-HD-LP-407 | FSC - Communal | Eulachon | 21-Apr 16:00 | 21-Apr 22:00 | Drift net |
| | | FSC - Communal | Eulachon | 22-Apr 16:00 | 22-Apr 22:00 | Drift net |

Table 6.2. Tsawwassen First Nation catch summary for ceremonial Eulachon fisheries, 2018.

| Weekend date | Licence # | Effort (h) | Pounds ^a | Released | | | | | |
|-----------------|------------------|---------------|---------------------|----------|-----------|----------|----------|----------|----------|
| | | | | Sturgeon | Chubs | Suckers | Flounder | Eulachon | Other |
| 08-Apr-18 | LFA-18-HD-LP 401 | 0.08 | 0.0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15-Apr-18 | LFA-18-HD-LP 401 | 1.00 | 65.0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15-Apr-18 | LFA-18-HD-LP 404 | 2.08 | 301.2 | 0 | 10 | 0 | 0 | 0 | 0 |
| 22-Apr-18 | LFA-18-HD-LP 407 | 3.00 | 80.0 | 0 | 4 | 0 | 0 | 0 | 0 |
| Totals | | 6.17 | 446.2 | 0 | 14 | 0 | 0 | 0 | 0 |

^a Catch monitors weighed Eulachon on board vessel (13 pieces = 1 pound). Note allocation was 518 lb.

Table 6.3. Tsawwassen FSC groundfish fishery openings by target species, date, and gear type, 2018.

| Licence # | Fishery type | Target species ^a | Opening | Closing | Gear type(s) |
|---------------|----------------|-----------------------------|---------------|---------------|------------------------|
| | | | Date and time | Date and time | |
| LFA-18-HD-400 | FSC - Communal | Halibut | 01-Jan 00:01 | 31-Mar 23:59 | Longline, rod and reel |
| LFA-18-HD-406 | FSC - Communal | Halibut | 01-Apr 00:01 | 30-Jun 23:59 | Longline, rod and reel |
| LFA-18-HD-427 | FSC - Communal | Halibut | 01-Jul 00:01 | 30-Sep 23:59 | Longline, rod and reel |
| LFA-18-HD-492 | FSC - Communal | Halibut | 01-Oct 00:01 | 31-Dec 23:59 | Longline, rod and reel |

^a Includes incidental catches of sablefish, dogfish, lingcod, flatfish, and rockfish.

Table 6.4. Tsawwassen First Nation catch summary for FSC groundfish fisheries, 2018.

| Licence # | Vessel (h) | Count of vessels | Tsawwassen catch (kept) | | | | | | | Released | | | |
|----------------------------|------------|------------------|-------------------------|----------|----------|----------|----------|-----------|----------|----------|----------|----------|----------|
| | | | Halibut | Dogfish | Lingcod | Flounder | Sturgeon | Sablefish | Shark | Sturgeon | Dogfish | Shark | Skate |
| LFA-18-HD-400 ^a | 0.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| LFA-18-HD-406 ^a | 0.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| LFA-18-HD-427 ^a | 0.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| LFA-18-HD-492 ^a | 0.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Totals | 0.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

^a No effort or catch was recorded in 2018.

Table 7.1. Comparison of annual FSC salmon catch and allocation from 2009 to 2018.

| Year ^a | | Chinook ^{d,e,f} | Sockeye | Pink | Coho | Chum |
|-------------------|---------------------------------------|--------------------------|---------|-------|------|-------|
| 2009 | Total catch ^b | 995 | 1,132 | 72 | 57 | 1,320 |
| | Maximum allocation ^c | 900 | 1,132 | 2,500 | 500 | 2,576 |
| | Final allocation balance | -95 | 0 | 0 | 0 | 0 |
| 2010 | Total catch ^g | 338 | 15,226 | 2 | 3 | 2,019 |
| | Maximum allocation | 530 | 15,226 | N/A | 500 | 2,576 |
| | Final allocation balance | 0 | 0 | 0 | 0 | 0 |
| 2011 | Total catch | 583 | 9,995 | 84 | 43 | 2,414 |
| | Maximum allocation | 625 | 10,894 | 2,500 | 500 | 2,576 |
| | Final allocation balance | 0 | 0 | 0 | 0 | 0 |
| 2012 | Total catch | 440 | 6,649 | 2 | 22 | 2,577 |
| | Maximum allocation | 625 | 7,047 | N/A | 500 | 2,576 |
| | Final allocation balance ^h | 125 | 0 | 0 | 0 | -1 |
| 2013 | Total catch | 729 | 5,120 | 74 | 220 | 2,574 |
| | Maximum allocation | 750 | 5,120 | 2,500 | 500 | 2,576 |
| | Final allocation balance | 21 | 0 | 0 | 0 | 0 |
| 2014 | Total catch | 392 | 14,878 | 3 | 159 | 3,495 |
| | Maximum allocation | 646 | 15,226 | N/A | 500 | 2,576 |
| | Final allocation balance ⁱ | 0 | 0 | 0 | 0 | 0 |
| 2015 | Total catch | 598 | 2,851 | 20 | 11 | 2,654 |
| | Maximum allocation | 625 | 2,920 | 2,500 | 500 | 2,576 |
| | Final allocation balance ^j | 0 | 0 | 0 | 0 | -78 |
| 2016 | Total catch | 86 | 2,978 | 0 | 64 | 2,495 |
| | Maximum allocation ^k | 625 | 6,427 | N/A | 500 | 2,498 |
| | Final allocation balance ^l | 0 | 0 | 0 | 0 | 0 |
| 2017 | Total catch | 693 | 233 | 35 | 87 | 2,606 |
| | Maximum allocation | 625 | No TAC | 2,500 | 500 | 2,576 |
| | Final allocation balance ^m | -68 | 0 | 0 | 0 | -30 |
| 2018 | Total catch | 313 | 14,380 | 0 | 39 | 2,506 |
| | Maximum allocation | 625 | 15,226 | N/A | 500 | 2,576 |
| | Final allocation balance | 0 | 0 | 0 | 0 | 0 |

^a Majority of underages not carried forward due to limited Tsawwassen harvesting effort.

^b Fish caught on 25 Oct in HD-482 were harvested as by-catch in the EO Chum salmon fishery and taken home. The take home by-catch was classified by Fisheries and Oceans as FSC harvest.

^c Maximum allocation is defined as the maximum TFN harvest for a particular salmon species in a given year including underages and overages.

^d DFO approved a "special circumstance" increase in the TFN Chinook salmon allocation to 900 fish for 2009.

^e Twenty percent of total allocation carried forward due to management uncertainty.

^f In 2014, maximum allocation includes 21 carryover from 2012.

^g Tsawwassen First Nation over harvested during the last THA fishery (9/10 Sep) due to a miscommunication between TFN and the seiner crew; the seiner continued fishing after the allocation had been reached. 1,946 Sockeye were transferred to "top-up" the FSC allocation (included in the sockeye total).

^h In 2013, maximum allocation includes 125 carryover from 2012.

ⁱ The remaining Chinook salmon allocation from 2012 (21) plus 233 balance from 2014 was used to offset the 2014 Chum salmon overage of 919 and set the final balance for Chinook and Chum salmon to zero.

^j Seventy-eight Chum salmon overage.

^k Sockeye salmon allocation in this table reflects the inseason CTAC estimate prior to the last Sockeye salmon fishery. On 10 Aug, a revised allocation of 1,079 was calculated based on updated CTAC estimates; however, TFN had already exceeded this catch allocation so fishing was halted and subsequently there is no carry forward.

^l The 2015 overage of 78 Chum salmon was paid back in 2016 with 81 less Chum harvested from TFN's full allocation of 2,576.

^m No carry forward anticipated with Chinook and Chum salmon due to the decrease availability of Sockeye salmon in 2017. This is the first year since 2009 that TFN has been able to catch their full Chinook allocation.

Table 7.2. Comparison of annual FSC Dungeness and Red rock crab catch from 2009 to 2018.

| Year | Dungeness crab | | Red rock crab | | Graceful crab | |
|------|----------------|----------|---------------|----------|---------------|----------|
| | Kept | Released | Kept | Released | Kept | Released |
| 2009 | 24,712 | 13,760 | 0 | 0 | 0 | 0 |
| 2010 | 21,558 | 11,775 | 2 | 23 | 0 | 0 |
| 2011 | 20,327 | 12,170 | 0 | 8 | 0 | 0 |
| 2012 | 24,441 | 14,350 | 0 | 2 | 0 | 0 |
| 2013 | 42,439 | 25,531 | 0 | 4 | 0 | 0 |
| 2014 | 41,563 | 19,829 | 0 | 5 | 0 | 0 |
| 2015 | 56,423 | 45,721 | 0 | 35 | 0 | 0 |
| 2016 | 79,059 | 62,540 | 0 | 26 | 0 | 0 |
| 2017 | 45,131 | 32,615 | 0 | 63 | 0 | 1 |
| 2018 | 52,569 | 38,956 | 0 | 4 | 0 | 0 |

Table 7.3 Comparison of annual Tsawwassen Harvest Agreement (THA) fisheries catch and allocation from 2009 to 2018.

| Year | | Sockeye | Pink | Chum |
|---------------------|-------------|---------|---------|--------|
| 2009 | Total catch | - | - | 3,416 |
| | Allocation | - | - | 8,113 |
| 2010 ^b | Total catch | 98,315 | - | - |
| | Allocation | 97,981 | - | - |
| 2011 | Total catch | 5,337 | 45,098 | 2,243 |
| | Allocation | 7,262 | 64,780 | 4,220 |
| 2012 ^{c,d} | Total catch | - | - | 11,832 |
| | Allocation | - | - | 12,029 |
| 2013 ^e | Total catch | - | 103,146 | 8,998 |
| | Allocation | - | 103,500 | 8,998 |
| 2014 | Total catch | 79,574 | - | 4,967 |
| | Allocation | 75,581 | - | 7,508 |
| 2015 ^f | Total catch | - | 3,516 | 9,714 |
| | Allocation | - | 3,700 | 9,714 |
| 2016 | Total catch | - | - | 13,672 |
| | Allocation | - | - | 10,780 |
| 2017 | Total catch | - | - | 4,815 |
| | Allocation | - | - | 7,694 |
| 2018 | Total catch | 37,368 | - | - |
| | Allocation | 33,595 | - | - |

^a By-catch totals not included in summary tables (see annual fisheries reports for details).

^b Due to miscommunication between TFN and seiner crew, the seiner continued fishing after the allocation was reached. Catch from the seine opening was distributed as follows: 40,156 TFN EO, 1,946 as TFN FSC, and 11,200 Sockeye salmon were shared with neighbouring First Nations' towards their FSC and EO harvests.

^c Missing landing slip in 2019 was found and an additional 381 Chum were sold as part of HD-475, thus the catch number will be different than previous reports.

^d 9,731 Chum salmon were harvested upstream (allocation transfer fisheries).

^e 3,064 Chum salmon and 87,418 Pink salmon were harvested upstream (allocation transfer fisheries).

^f 3,516 Pink salmon and 1,922 Chum salmon were harvested upstream (allocation transfer fisheries).

Table 7.4 Comparison of annual Eulachon catch and allocation from 2009 to 2018.

| Eulachon (lb) | 2009 | 2010 | 2011 | 2012^a | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|----------------------|-------------|-------------|-------------|-------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Total catch | 49.0 | 41.0 | 39.3 | 50.0 | 95.7 | 59.2 | 61.0 | 160.6 | 185.0 | 446.2 |
| Allocation | 50.0 | 50.0 | 50.0 | 50.0 | 100.0 | 100.0 | 217.0 | 288.0 | 485.0 | 518.0 |

^a Due to over harvest by upstream First Nations, Tsawwassen did not harvest their allocation. Eulachon was harvested by Katzie First Nation.

FIGURES

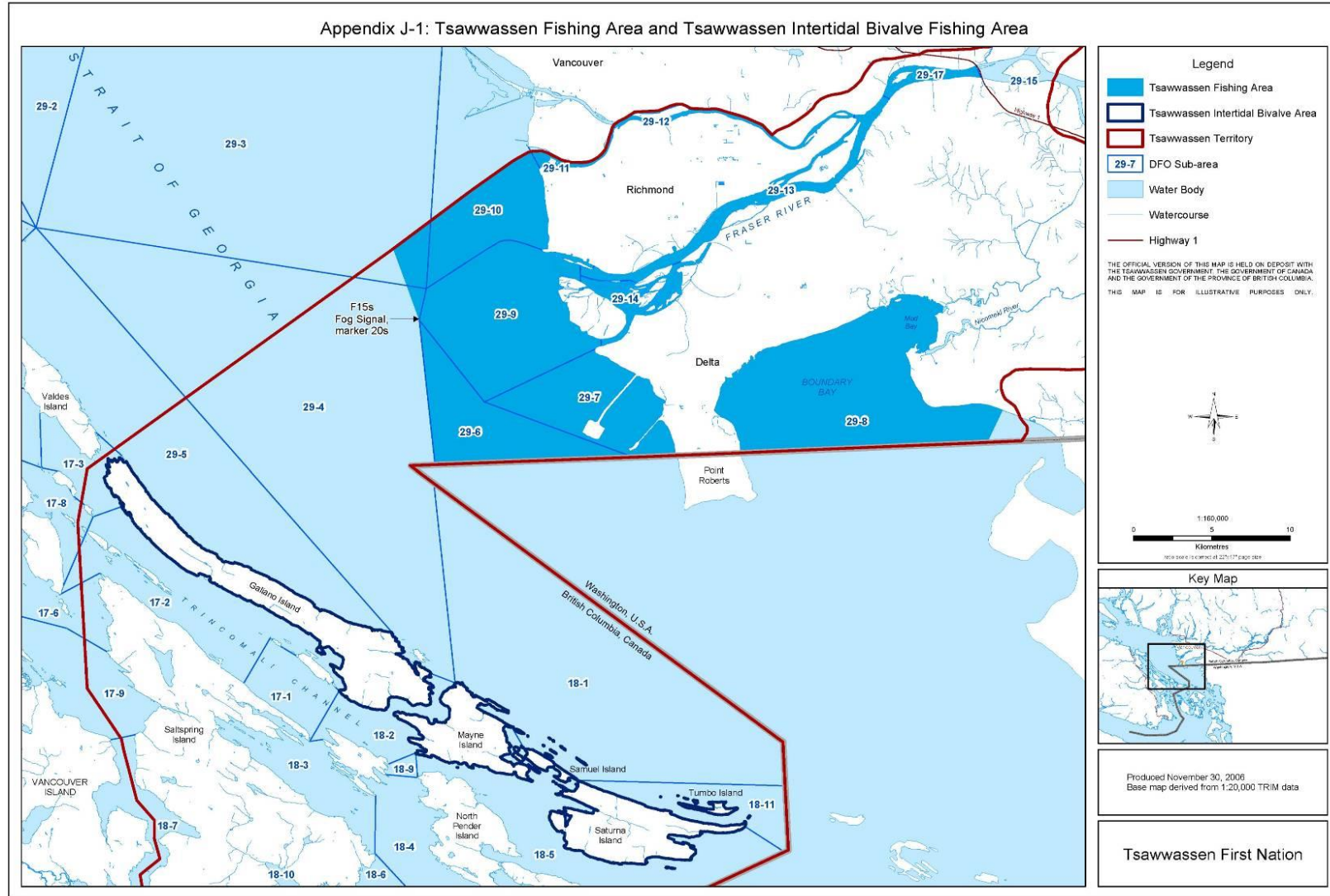


Figure 1.1. Tsawwassen Fishing Area and Tsawwassen Intertidal Bivalve Fishing Area.



Figure 1.2. Identification of Gulf Islands National Park Reserve of Canada.

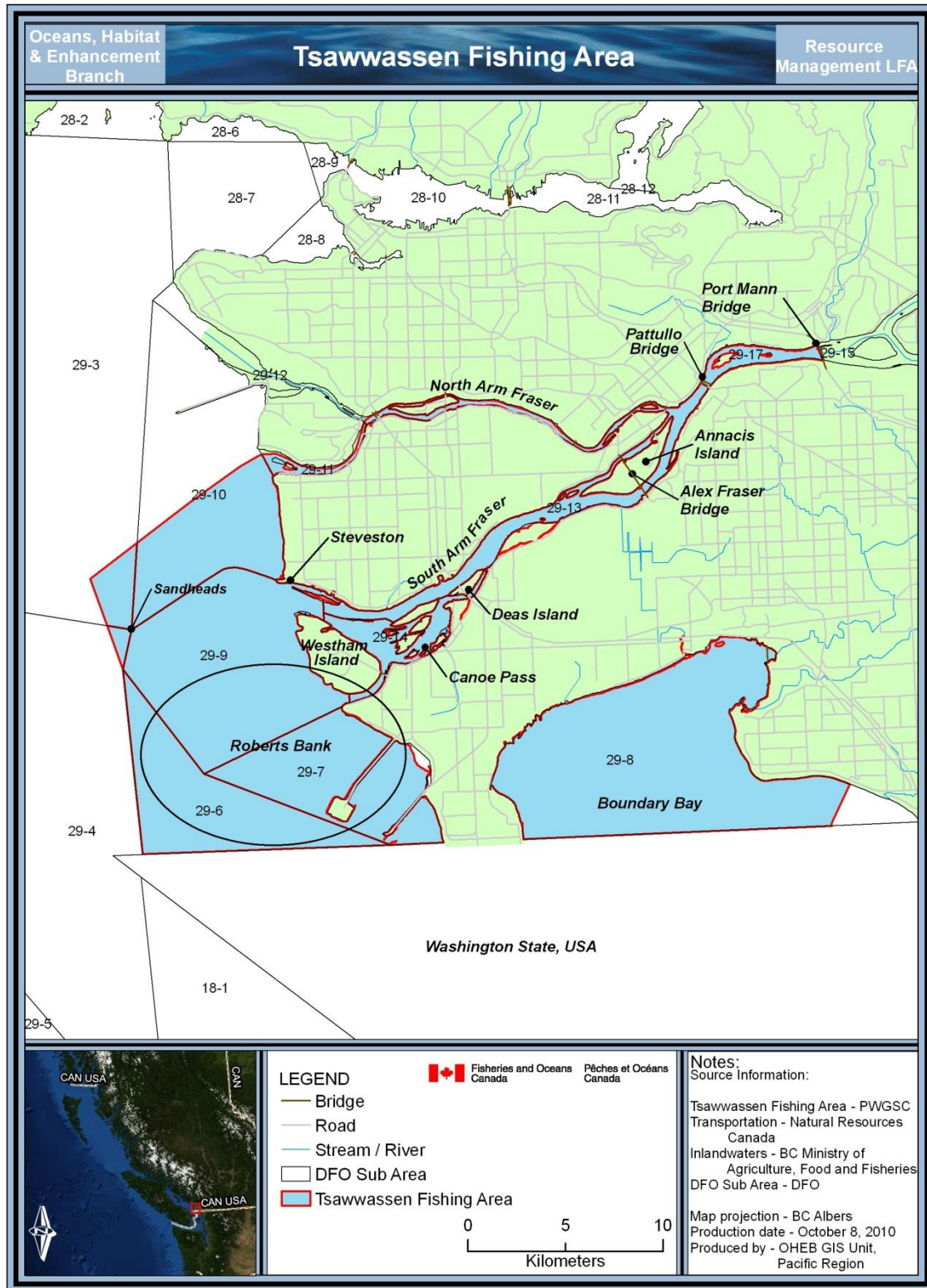


Figure 1.3. Tsawwassen Fishing Area (enlarged map with location names).

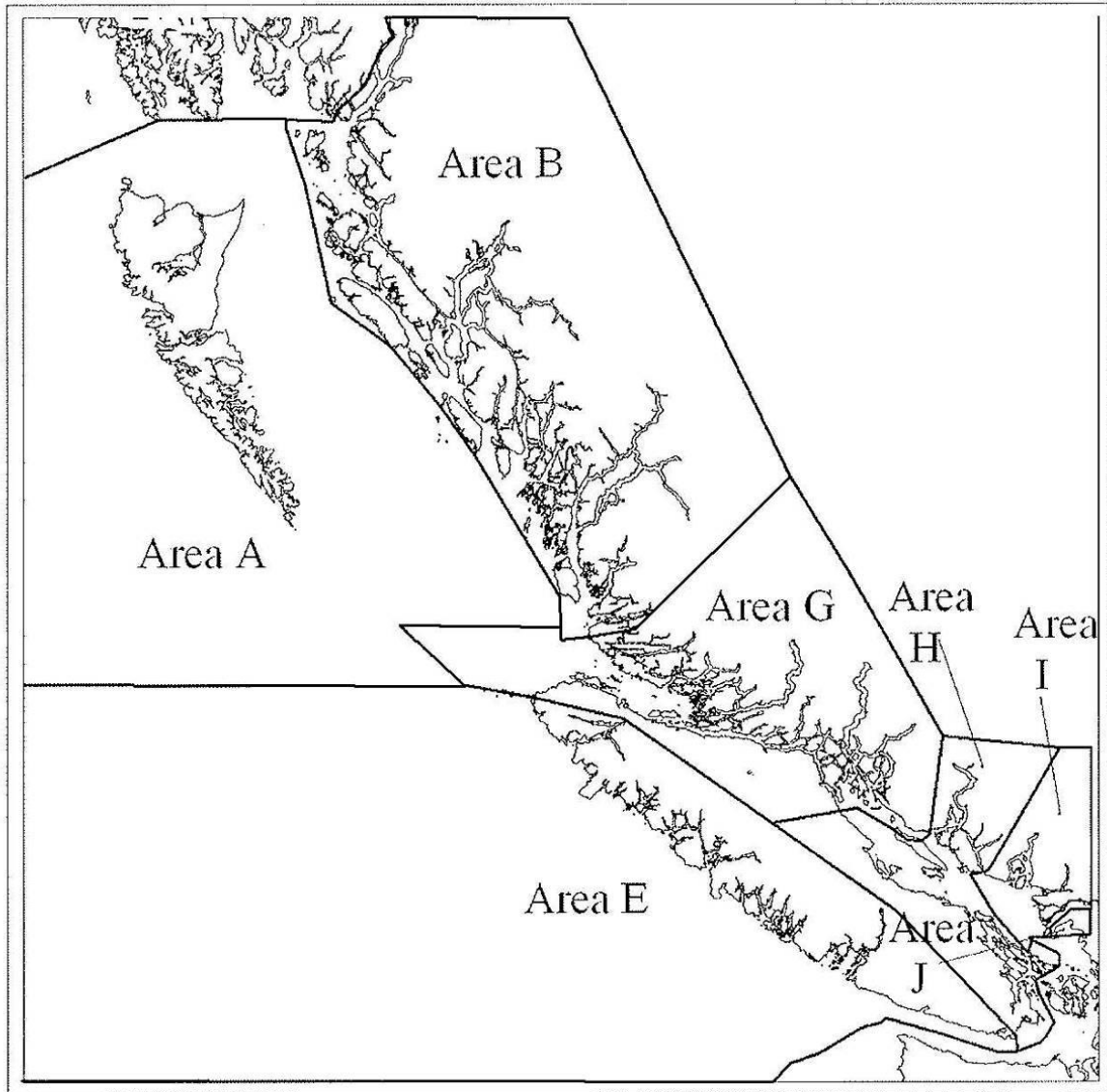


Figure 1.4. Map of Commercial Crab Management Areas.

APPENDICES

APPENDIX A
Tsawwassen Fishing Plans 2018



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TSAWWASSEN FIRST NATION

Fisheries Department FINAL

TSAWWASSEN ANNUAL FISHING PLAN EULACHON AND CHINOOK – FINAL APRIL 2018

This fishing plan has been prepared by Tsawwassen First Nation (TFN) for submission to the Joint Fisheries Committee to assist in the planning for Tsawwassen fisheries to be conducted between 1 April 2018 and 31 March 2019. A list of TFN's designated fishers and their designation numbers is provided to Fisheries and Oceans Canada annually.

The following sections provide the proposed harvest plans and harvest expectations for each salmon species, based on pre-season run size forecasts, to ensure that the Department of Fisheries and Oceans (DFO) is aware of potential TFN's harvest levels and preferred harvest times, areas, and methods for each species or species group. However, the Tsawwassen Annual Fishing Plan (TAFP) is subject to identified and documented conservation concerns.

General

Tsawwassen fisheries will be conducted in a manner consistent with the Tsawwassen First Nation Final Agreement, Tsawwassen First Nation Harvest Agreement, Harvest Documents, Tsawwassen Fisheries Operational Guidelines (FOG) document, Tsawwassen Law, Federal Laws and British Columbia Law. As indicated in the Tsawwassen Final Agreement, Tsawwassen fisheries will be conducted within the Tsawwassen Fishing Area (TFA) or Tsawwassen Intertidal Bivalve Fishing Area, unless otherwise permitted in Harvest Documents or licences issued by DFO. The specific catch monitoring requirements and plans for each species are defined in the Tsawwassen FOG document. The following species-specific plans summarize the conservation issues and provide details on Tsawwassen proposed fishing times, gear and size restrictions for each species. Where conservation concerns have been identified licence conditions will identify those species that should be released alive and unharmed.

Eulachon

Conservation: The Final IFMP for Eulachon indicates that: “Due to stock strength and conservation concerns, only very limited Fraser River FSC fisheries for Eulachon will be considered on a case by case basis by Lower Fraser DFO area office for 2018”.

Fishery: An increased allocation of 6,275 lb of FSC harvest of Eulachon is proposed for First Nations in the lower Fraser River in 2018. Eulachon may be harvested for FSC purposes by specifically designated TFN fishers at the times and locations in a Tsawwassen Harvest Document. The Fraser River Eulachon IFMP for 15 January 2018 to 31 December 2018 limits the length of fishing time to 20-minute soak times to a maximum of 10 hours per day.

Timing: From 15 March 2018 through mid-May 2018, TFN’s proposed Eulachon fishing should be permitted for time periods equivalent to that permitted for other First Nation’s fishing in the TFA and the weekly timing for these fisheries will be determined in consultations with DFO.

In addition, TFN proposes Eulachon fisheries for ceremonial purposes from 1 March through 31 March 2019, or similar timing equivalent to that permitted for other First Nation’s fishing in the TFA. The TFN 2019 Eulachon fishery will be covered by Fraser River Eulachon IFMP for 2019.

Gear: Each fisher may fish using one drift net up to a maximum soak time of 20 minutes. Drift nets shall be no more than 100 m in length and shall have a mesh size of no less than 25 mm and no greater than 50 mm.

Size: There are currently no size restrictions for FSC harvests of Eulachon.

Expectation: The expected harvest level for TFN in 2018 is 518 lb. TFN is willing to assist other Lower Fraser First Nations with their FSC Eulachon harvest.

Chinook Salmon

Conservation: In 2010, the Nicola Tribal Association identified some serious conservation concerns for “early-timed” Chinook salmon and requested that all Fraser First Nations “hold off on any fishing” for these stocks. Most “early-timed” Chinook salmon stocks are Spring 4₂ and Spring 5₂ fish. These concerns are still relevant in 2018. Spring 4₂, Spring 5₂, and Summer 5₂ Chinook salmon stocks have been classified as stocks of concern while the Summer 4₁ and Fall 4₁ Chinook salmon have been categorized as Category 2 (low abundance; 2018–2019 Draft Southern Salmon IFMP). In addition, the 2018–2019 Draft South Coast Salmon IFMP includes the management measures implemented in to conserve Fraser Spring 4₂ Chinook salmon returns. These management actions also provide some additional protection for the Fraser Spring 5₂ and Summer 5₂ Chinook salmon as their migration timing overlaps significantly. Fisheries and Oceans decided to start the season in Zone 1, given the continued poor

outlook for the Fraser Spring and Summer 5₂ Chinook salmon aggregates. By mid-June, in-season assessment of these stocks will guide the decision to remain in Zone 1, or to move to a different zone for the remainder of the season.

To address Fraser Chinook conservation concerns for the 2018 season, the Department is proposing a precautionary reduction in exploitation rates (in the range of 25–35%) for specific Chinook stocks of concern to align exploitation rates with current stock productivity, support conservation and promote rebuilding. The measures are planned in addition to existing fishery management measures already in place. Fishery reductions will likely need to be considered in the following fisheries:

Fraser River – specific measures in terminal areas will include no directed commercial Chinook fisheries and Chinook non-retention during fisheries for other species; **substantially reduced or closed recreational fisheries; and restrictions for First Nation FSC harvest.**

TFN Fishery: Chinook salmon may be harvested for FSC purposes by any designated TFN fisher at the times and locations defined in a Tsawwassen Harvest Document. TFN fishers and the TFN Fisheries Department will endeavor to minimize the encounter rate and harvest for non-target species (i.e., species without directed fishing effort during the Chinook salmon fishing periods).

Timing: From 1 April through 15 June of 2018, TFN will put forward requests for limited ceremonial fisheries for planned community events (e.g., the TFN first fish ceremony, graduation ceremony, funerals, weddings, Longhouse ceremonies, and the TFN Anniversary of the Treaty Effective Date) during this period.

TFN is concerned with DFO's plans to permit Chinook salmon harvests in marine recreational fisheries off southern Vancouver Island prior to 15 June. There is evidence that these fisheries have captured some early-timed Fraser Chinook salmon stocks. TFN will conduct weekly 36-hour fisheries starting on Friday and ending on Sunday starting 1 April until 15 June until a maximum of 40 Chinook salmon are retained. Each weekend fishery will have approximately 4 vessels participating but may have greater participation. TFN will re-evaluate conditions of the fishery (i.e., vessel # and timing of fishery) as Chinook allocation (40) nears completion.

If DFO manages the Chinook salmon fishery under zone 1, then starting 16 June until 19 July, TFN will continue conducting weekly 36-hour fisheries with full TFN vessel participation and a maximum harvest of 60 Chinook. These weekly fisheries will start on Friday at a time that will be determined in weekly consultations with DFO on the Wednesday prior. Minimum encounter with Early Stuart Sockeye is expected due the change in drift net mesh size starting 27 June (minimum mesh size of 20 cm/8 in, a maximum length of 50 fathoms, and a maximum depth of 60 meshes). In 2017, TFN did not retain or release Sockeye salmon during the Early Stuart closure while fishing for Chinook. The first Sockeye kept was after the closure. Discussions will occur with

DFO prior to the start of the salmon fisheries, but it is expected that a similar approach will be taken in 2018.

However, if DFO manages the Chinook salmon fishery under a Zone 2 management regime (based on their decision mid-June, TFN's proposed Chinook salmon fishing plan is a minimum of 36 hours per week from 16 June to 1 July and a minimum of 48 hours per week from 2 July to late July. These weekly fisheries will start on Friday at a time that will be determined in weekly consultations with DFO on the Wednesday prior.

From late July through to the end of August 2018, TFN's proposed Chinook salmon fishing plan is a minimum 48 hours per week or time equivalent to that permitted for other First Nation's fishing in the TFA. These weekly fisheries will start on Friday at a time that will be determined in weekly consultations with DFO on the Wednesday prior. If the Chinook salmon allocation has not been met by 31 August 2018, TFN will request further selective harvest opportunities for Chinook salmon into September Interior Fraser River (IFR) Coho salmon window closure (4 September to 5 October). The options for selective harvest opportunities will be discussed at a later date. TFN understands that these additional Chinook salmon harvest opportunities will be dependent upon the Coho salmon exploitation rate.

From 1 March through 31 March 2018, TFN's proposed Chinook salmon fisheries for ceremonial purposes is a minimum of 12 hours per week or time equivalent to that permitted for other First Nation's fishing in the TFA; and these weekly fisheries will start on Friday or Saturday at a time that will be determined in weekly consultations with DFO on the Wednesday prior.

Gear: Approved selective fishing methods may be used during any fishing period, if identified on the harvest documents.

Drift nets with a minimum mesh size of 12 cm/4-4/5 in, a maximum length of 50 fathoms, and a maximum depth of 60 meshes may be used, except during period when larger mesh size is required to minimize the catch of Early Stuart or Late-run Sockeye salmon stocks (see below). Drift nets with a minimum mesh size of 20 cm/8 in, a maximum length of 50 fathoms, and a maximum depth of 60 meshes may be used during the period when Early Stuart Sockeye salmon are migrating through the TFN fishing areas (approximately 27 June – 19 July 2018) or during other periods when there are conservation concerns for Fraser Sockeye stocks.

Size: No Chinook salmon with less than 30 cm/12 in in nose-fork length will be harvested, other than as bycatch after all efforts have been made to release salmon unharmed have been taken.

Expectation: The expected harvest level for 2018 is 625 Chinook salmon.

Sturgeon and Steelhead

Conservation: Conservation concerns have been identified for Fraser River White sturgeon and Steelhead in the TFA. TFN will be consulted on any updated conservation measures for Steelhead prior to the start of the salmon fisheries.

TFN Fishery: All live White sturgeon and wild Steelhead caught in TFN FSC fisheries will be immediately released. No TFN fisheries will target White sturgeon or Steelhead (wild or hatchery-marked) in 2018. Currently, harvest documents for salmon read “All efforts and attempts shall be made to return all non-target species including Steelhead and sturgeon alive and unharmed. However, in the event a White sturgeon or Wild Steelhead caught in a TFN fishery is dead or a mortal wound is obvious, TFN’s preference is to retain the fish as per the generally agreed upon practice for other Fraser River First Nation FSC fisheries. TFN is currently awaiting approval (from the Province and DFO) on the retention of hatchery-marked Steelhead in the TFN FSC fisheries that target other species (bycatch). Further discussion on the retention of White sturgeon or Steelhead (dead or alive) will occur at the next JFC/JTC meeting in 2108. No bycatch of Steelhead or sturgeon would be retained in TFN commercial fisheries.

Timing: NA

Gear: NA

Size: NA

Marine Aquatic Plants

Conservation: No conservation concerns have been identified for marine aquatic plants in the TFA.

TFN Fishery: Tsawwassen members may harvest marine aquatic plants for FSC purposes (from the 9 classified groups) in the TFA as outlined in the harvest document.

Tsawwassen First Nation will submit an aquatic plant commercial harvesting application before the submission deadline (1 October 2018) for the 2019 commercial harvest season to the Ministry of Forest, Lands and Natural Resource Operations (FLNRO).

Timing: From 1 April 2018 through 31 March 2019, 24 hours per day, every day.

Gear: TFN members propose to use hand picking methods, using a sharp cutting instrument, to harvest marine aquatic plants for FSC purposes.

Expectation: In 2016 and 2017, BC Minister issued the Harvest Document without a harvest limit. The Province of BC will revisit the necessity of a harvest limit at some point in the future, should the need arise. The same exception will hold for 2018.

Note: Sockeye salmon, Pink salmon, Chum salmon, Coho salmon, crab, intertidal bivalves, shrimp and prawns, groundfish, sturgeon, and Steelhead, and marine aquatic plants will be updated at a later date.



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TSAWWASSEN FIRST NATION

Fisheries Department

FINAL

TSAWWASSEN ANNUAL FISHING PLAN – FINAL OCTOBER 2018

This fishing plan has been prepared by Tsawwassen First Nation (TFN) for submission to the Joint Fisheries Committee to assist in the planning for Tsawwassen fisheries to be conducted after the Effective Date (between 1 April 2018 and 31 March 2019). A list of TFN's designated fishers and their designation numbers is provided to Fisheries and Oceans Canada (DFO) annually.

The following sections provide the proposed harvest plans and harvest expectations for each salmon species, based on pre-season run size forecasts, to ensure that the DFO is aware of potential TFN's harvest levels and preferred harvest times, areas, and methods for each species or species group. However, the Tsawwassen Annual Fishing Plan (TAFP) is subject to identified and documented conservation concerns. *This document does not include sections related to Eulachon, Chinook salmon, Marine Plants, Steelhead, and sturgeon because they were previously finalized in a separate document.*

General

Tsawwassen fisheries will be conducted in a manner consistent with the Tsawwassen First Nation Final Agreement, Tsawwassen First Nation Harvest Agreement (THA), Harvest Documents (HD), Tsawwassen Fisheries Operational Guidelines (FOG) document, Tsawwassen Law, Federal Laws, and British Columbia Law. As indicated in the Tsawwassen Final Agreement, Tsawwassen fisheries will be conducted within the Tsawwassen Fishing Area (TFA) or Tsawwassen Intertidal Bivalve Fishing Area, unless otherwise permitted in HD or licences issued by DFO. The specific catch monitoring requirements and plans for each species are defined in the Tsawwassen FOG document. The following species-specific plans summarize the conservation issues and provide details on Tsawwassen proposed fishing times, gear and size restrictions for each species. Where conservation concerns have been identified licence conditions will identify those species that should be released alive and unharmed.

Sockeye Salmon

Conservation¹: Conservation concerns are anticipated for several of the components of the 2018 Sockeye salmon return to the Fraser River: the Early Stuart stock, some Early Summer stocks, and some the Late-run stocks (e.g., Cultus Lake stock). The final IFMP indicates that there will be an Early Stuart and early-timed Early Summer Sockeye salmon closure in Area 29 from 27 June until noon on 20 July. The window closure will depend on in-season assessments. In some years when there has been concern regarding the return strength of the early timed component of the Early Summer run, a one-week extension to the Early Stuart closure window has been implemented to protect these stocks. Depending on in-season information, this approach or other actions may be considered to support meeting management objectives for this stock group. If, however, the in-season information indicates above average run size, warranting directed fisheries on the Early Stuart stock, then TFN intends to fish.

From late July 2018 through mid-August 2018 most of the Sockeye salmon migrating through the TFN salmon fishing area are expected to be originating from the Early Summer stocks. After mid-August 2018, the Late-run stocks (including Cultus Lake) could begin to enter the Fraser River in significant numbers depending on the extent to which these fish delay in the lower Georgia Strait. The midpoint pre-season forecasts for the total return of Fraser Sockeye salmon in 2018 is 13,991,000 (84,000 Early Stuart, 2,155,000 Early Summers, 4,344,000 Summers, and 7,398,000 Lates). These estimates represent the 50% probability level for each timing group (i.e., there is a 50% probability that the run could be lower than these estimates).

TFN Fishery: Sockeye salmon may be harvested for FSC purposes by any designated TFN fishers at the times and locations defined in a Tsawwassen HD. Once the first in-season Canadian Commercial Total Allowable Catch has been determined for Fraser Sockeye salmon, TFN will be issued licences by DFO for the Tsawwassen commercial allocation for Fraser River Sockeye salmon, as defined in the TFN Harvest Agreement. TFN will work with DFO to determine the timing, location and other details related to TFN commercial harvest opportunities. TFN fishers and the TFN Fisheries Department will endeavor to minimize the encounter rate and harvest for non-target species (i.e., species without directed fishing effort during the Sockeye salmon fishing periods). A portion of the TFN FSC Sockeye salmon allocation may be retained to be taken as bycatch in TFN FSC fisheries conducted in August to harvest the TFN allocation for Chinook salmon.

Timing: If any inter-First Nation FSC sharing arrangement fisheries are permitted to target Early Stuart Sockeye salmon, TFN expects that its members will be provided an

¹ The run timing for the various Fraser Sockeye salmon stock timing groups are not final (based on the final IFMP).

opportunity to harvest some Sockeye salmon during the period when Early Stuart Sockeye salmon are migrating through the TFA. These fisheries would typically start on Friday. The duration and timing of these fisheries will be determined in weekly consultations with DFO, typically on the Wednesday prior.

From 20 July through 7 August 2018 the TFN's proposed Sockeye salmon fishing is 48 hours per week, subject to conservation; and these weekly fisheries will start on Friday at a time that will be determined in weekly consultations with DFO on the Wednesday prior.

From 8 August through 3 September 2018 the TFN's proposed Sockeye salmon fishing is 48 hours per week (subject to conservation), if required to achieve the TFN Sockeye salmon allocation. These weekly fisheries will start on Friday or Saturday at a time that will be determined in weekly consultations with DFO on the Wednesday prior. Note the end dates for Sockeye salmon fisheries depend on the timing of Interior Fraser River (IFR) Coho window closures currently scheduled for 4 September to 5 October 2018.

- Gear:** Approved selective fishing methods may be used during any fishing period, if identified on the HD.
- Drift nets with a minimum mesh size of 10 cm/4 in to a maximum of 15 cm/5-7/8 in, a maximum length of 50 fathoms, and a maximum depth of 60 meshes may be used.
- Size:** No Sockeye salmon less than 30 cm/12 in in nose-fork length will be harvested, other than bycatch after all efforts have been made to release salmon unharmed have been taken.
- Expectation²:** Based on escapement plan options outlined in the final IFMP and the pre-season (50% probability) run size forecast, the Canadian Total Allowable Catch (CTAC) is estimated to be above 3 million Sockeye salmon. Therefore, the expected harvest level for the 2018 TFN FSC Sockeye salmon fisheries will be 15,226 based on a projected Fraser Sockeye TAC of over 9 million. TFN's commercial allocation for Sockeye salmon is 0.78% of the Canadian Commercial Total Allowable Catch (CCTAC) of Fraser River Sockeye salmon. The harvest level for the 2018 TFN commercial Sockeye salmon fisheries will be determined as soon as the CCTAC has been defined for Fraser River Sockeye salmon. Both the TFN FSC and commercial allocations may change during the fishing season with changes in the returning abundance of Fraser River Sockeye salmon.

² CTAC and TFN's FSC allocation is based on pre-season estimates (final salmon IFMP) and will continue to change in-season.

Pink Salmon

Conservation: Even year returns of Fraser River Pink salmon are typically too small to warrant any direct harvest of these stocks.

TFN Fishery: N/A

Timing: N/A

Gear: N/A

Size: N/A

Expectation: N/A

Chum Salmon

Conservation: Fraser River Chum is expected to be abundant in 2018 (final IFMP). However, conservation concerns related to Interior Fraser Steelhead, Lower Fraser Coho salmon, and Interior Fraser Coho salmon could affect the timing and fishing methods permitted for commercial fisheries that target Fraser Chum salmon stocks. The IFMP defines the decision guidelines for fisheries that target Fraser River Chum salmon stocks. TFN recommends that no commercial fisheries be permitted to harvest Fraser Chum salmon until a TAC has been determined. The first in-season estimate of the return and terminal TAC for Fraser Chum salmon should be available mid-October 2018.

TFN Fishery: Chum salmon may be harvested for FSC purposes by any designated TFN fishers at the times and locations defined in a Tsawwassen HD. Once the first in-season Canadian Commercial Total Allowable Catch has been determined for Fraser Chum salmon, TFN will be issued a HD by DFO for the Tsawwassen commercial allocation for Fraser River Chum salmon, as defined in the TFN Harvest Agreement. TFN will work with DFO to determine the timing, location and other details related to TFN commercial harvest opportunities. TFN fishers and the TFN Natural Resource Department will endeavor to minimize the encounter rate for non-target species (e.g., Steelhead, sturgeon, Lower Fraser Coho salmon, Interior Fraser Coho salmon).

Timing:³ From early October through 30 November 2018, based on the proposed IFR Coho salmon window closure (4 September–5 October) TFN's proposed Chum salmon fishery is 24 hours for the first week and 48 hours per week thereafter, and these weekly fisheries will start on Friday or Saturday at a time that will be determined in weekly consultations with DFO on the Wednesday prior.

If TFN has a commercial Chum salmon allocation in 2018, TFN proposes to use their standard Chum salmon drift nets during similar time periods when Area E and other

³ Timing dates for FSC Chum salmon fisheries based on final salmon IFMP.

Fraser First Nations are permitted to conduct commercial fisheries that target Fraser Chum salmon (should they sign Economic Access Agreements with the Department) and to conduct an experimental selective fishery to harvest the portion of their commercial Chum salmon allocation that was not harvested using their standard Chum salmon drift nets. The timing for these commercial fisheries is expected to be in late October to mid-November. All fishery time frames are estimates and final dates will be determined according to in-season migration timing information.

Gear: Previously approved selective fishing methods may be used during any fishing period, if identified in the HD.

Drift nets with a minimum mesh size of 15.8 cm/6-1/4 in, a maximum length of 50 fathoms, and a maximum depth of 60 meshes may be used during the period of approximately early October through 30 November 2018. Revival boxes will be present on vessels greater than thirty feet – representing about 19% of TFN's fleet.

Size: No Chum salmon less than 30 cm/12 in in nose-fork length will be harvested other than as bycatch when a mortal wound is obvious.

Expectation: TFN Chum salmon allocation for FSC fisheries would be 2,576 Chum salmon assuming Terminal Surplus is greater than 100,000 in 2018.

TFN's commercial allocation for Chum salmon is 3.27% of the Terminal Commercial Catch (TCC) of Fraser River Chum salmon. The LFFA has submitted a Commercial Salmon Allocation Framework (CSAF) proposal requesting that the 12.9% of the TCC for Fraser Chum be allocated to Lower Fraser First Nations, including TFN, prior to the fishing season so each First Nation can make the necessary plans for their fisheries. If this is approved by DFO, TFN's share of the TCC for Fraser Chum could increase. The TCC will be determined in-season (mid-October). The TFN commercial allocations may change during the fishing season with changes in the returning abundance of Fraser River Chum salmon.

Coho Salmon

Conservation: Conservation concerns have been identified for Interior Fraser Coho salmon and Lower Fraser Coho salmon. The preliminary outlook for 2018 is for continued low abundance due to low parental escapement and the current generally unfavorable marine conditions. Sustained improvement in marine conditions will be required to improve outlook and rebuild abundance. A formal forecast will be presented in Spring 2018. All Lower Fraser Coho and Interior Fraser Coho stocks are in Outlook Category 1 (Stock of Concern) for 2018. Therefore, regardless of the exploitation rate selected for the 2018 fishing season, First Nations fisheries both off the mouth of, and in, the Fraser River will likely continue be affected to some degree during IFR Coho window closures and IFR Steelhead closures currently scheduled for 4 September to 24 October 2018.

- TFN Fishery:** Coho salmon may be harvested for FSC purposes, consistent with relevant provisions laid out in the IFMP, by any designated TFN fishers at the times and locations defined in a Tsawwassen HD. TFN fishers and the TFN Fisheries Department will endeavor to minimize the encounter rate for non-target species (e.g., sturgeon and Steelhead).
- Timing:⁴** From approximately early October through 30 November 2018, TFN may harvest Coho salmon captured in their Chum salmon FSC fisheries up to a pre-determined maximum of 500 pieces. The Department will work with TFN to provide access to Coho salmon in times and areas with minimal impact on stocks of concern, and consistent with the overall 2018 IFR Coho salmon and Steelhead management approach.
- Gear:** Approved selective fishing methods may be used during any fishing period, if identified in the harvest documents.
- Drift nets with a minimum mesh size of 15.8 cm/6-1/4 in, a maximum length of 50 fathoms, and a maximum depth of 60 meshes may be used during the period of early October through 30 November 2018.
- Size:** No Coho salmon less than 30 cm/12 in in nose-fork length will be harvested other than as bycatch when a mortal wound is obvious.
- Expectation:** As outlined in Appendix J-2 of the TFA, TFN's Coho salmon allocation for FSC fisheries will be **500 Coho salmon** (hatchery-marked or unmarked) in 2018 and will be harvested:
- a. Incidentally in FSC fisheries that target other species; or
 - b. Using selective harvesting techniques to capture specific Coho salmon stocks.
- If other Fraser River First Nations are permitted to harvest unmarked Coho salmon in non-selective fisheries within the Fraser River, TFN expects the DFO will permit TFN members to harvest a portion of the TFN Coho salmon allocation in non-selective fisheries.

Crab

Conservation: The following conservation issues have been identified by DFO:

- There is a concern that undersized, female and soft-shell crab are being removed through either illegal harvests or incidental mortality due to intensive fishing. Due to increased injury and mortality, the capture and handling of undersized, female, and soft-shell crab is a conservation concern.
- Illegal crab trap gear continues to be a conservation concern. Crab traps having undersized, missing, or closed escape rings contribute to higher undersized, female,

⁴ Timing dates for harvesting FSC Coho salmon are based on final salmon IFMP.

and soft-shell mortalities. If lost, these traps can continue to fish until they structurally deteriorate or become buried in the substrate.⁵

- All harvesters (Commercial, First Nation, and Recreational) should have the same minimum size limit for conservation of male crab.
- Commercial and recreational harvesters must release all females regardless of size. Tsawwassen First Nation crab harvesters will be required to release all female crabs. Mandatory release of female crabs will be included as a condition in the harvest document.
- Crab harvesting during “soft shell” periods is not authorized for commercial harvesters for conservation reasons. Crabs with soft shells are susceptible to significant mortality during the fishing and handling process required for release of female and undersized crabs. At this time First Nation harvesting for domestic purposes is allowed during the commercial closed period for soft shell (December to mid-June in Areas 28 and 29, and December to mid-July in Boundary Bay).
- It is recommended that TFN crab harvesters reduce fishing effort during the soft-shell period to reduce mortalities of undersized crabs. In Areas 28 and 29, the soft-shell or moulting period is from April to mid-June (May to mid-July in Boundary Bay).

TFN Fishery: Crab may be harvested for FSC purposes by any designated TFN fisher at the times and locations defined in a Tsawwassen Harvest Document. TFN fishers and the TFN Fisheries Department will endeavor to minimize the encounter rate and harvest for non-target species. TFN has communal commercial access to crab, however the commercial fishery is subject to separate licence conditions and is not discussed in this document.

Timing: From 1 April 2018 through 31 March 2019, 24 hours per day, every day.

Location: The fishing area listed in the harvest document is as follows: The waters of the Strait of Georgia bounded by a line commencing at 49° 11' 3.1524" N latitude and 123° 12' 26.08868" W longitude then to 49° 7' 48.216" N latitude and 123° 19' 50.4228" W longitude then to 49° 5' 15.6948" N latitude and 123° 18' 36.8958" W longitude then to 49° 0' 8.0028" N latitude and 123° 18' 5.1156" W longitude then to 49° 0' 7.5564" N latitude and 123° 5' 27.528" W longitude and the waters of Boundary Bay bounded by a line commencing at 49° 0' 7.5198" N latitude and 123° 2' 6.5898" W longitude then to 49° 0' 7.5414" N latitude and 122° 49' 10.8552" W longitude then to 49° 1' 15.2256" N latitude and 122° 48' 20.7858" W longitude. Portions of DFO Management Subareas 29-6, 29-7, 29-8, 29-9, 29-10.

⁵ Integrated Fisheries Management Plan, Crab by trap 2018

As noted in the Tsawwassen FOG document, crab buoys are not permitted in the portion of the TFA defined as the “Navigational No Float Zone”. TFN fishers are permitted to fish for crab in this zone, but any buoys associated with crab traps must remain outside this zone.

Gear: Each TFN vessel may use up to a maximum of 50 traps to harvest crab for FSC purposes. The following requirements apply to all traps used to catch crabs:

- Biodegradable escapement mechanisms are required on each trap in the form of a rot cord (untreated cotton twine no greater than No. 120), rot panel or rot panel alternative. These mechanisms are designed to minimize the effects of ghost fishing by traps.
- All crab traps must be fitted with at least two escape holes (at least 105 mm in diameter) that are not more than 100 mm below the top of the frame.
- Unique plastic trap tags will be applied to each TFN each crab trap used in the FSC fishery to facilitate the identification of TFN traps and enforcement of fisheries regulations. Each harvester will also receive 10 extra tags in case they lose some of the 50 tags that can be fished per vessel. The trap tags will be replaced on a two-year basis.
- If a harvester loses 10 or more plastic trap tags, the harvester should contact the TFN Natural Resource Enforcement officer to obtain a replacement set of trap tags (marked specifically as replacement tags). The regular tags must be removed from the traps, returned to the TFN Natural Resource Enforcement officer, and replaced with the new replacement set.
- TFN will provide DFO will a list of the plastic trap tags numbers have been distributed to which harvesters, as well as the vessels designated to fish crab. The list will be updated as needed, for example when additional harvesters request crab tags, when new vessels enter the fishery, when harvesters received replacement tags, or when new tags are issued each year. Updated lists will be sent to DFO as they are updated or on a monthly basis.
- Traps set individually will attach a floating buoy legibly marked with Tsawwassen First Nation, participant’s name and the identification number for the vessel used. Multiple traps set in a string will have a floating buoy legibly marked with Tsawwassen First Nation, participant’s name and the identification number for the vessel used attached to both ends of each string. The floats must be large enough so that they will not go underwater with tide or current changes.

Size: The minimum size for Dungeness crab is 16.5 cm/6-1/2 in and for Red rock crab are 11.5 cm/4-1/2 in, both measured in a straight line across the widest part of the carapace, or shell. All crab less than the minimum size limit shall be immediately released to the area of capture.

Intertidal Bivalves

Conservation: No conservation concerns have been identified for intertidal bivalves in the Tsawwassen Intertidal Bivalve Fishing Area.

TFN Fishery: TFN currently does not have a harvest document for bivalves, but is working with Federal and Provincial government agencies, the Canadian Shellfish Sanitation Program (CSSP) and South Coast First Nations to establish harvesting locations within the Tsawwassen Intertidal Bivalve Harvest Area (Southern Gulf Islands). Once locations have been determined and South Coast First Nations have been contacted, intertidal bivalves may be harvested for FSC purposes by any designated TFN fishers at the times and locations defined in a Tsawwassen Harvest Document.

Timing: To be determined.

Location: As described in the Tsawwassen FOG document:

- Where the Tsawwassen Intertidal Bivalve Fishing Area overlaps with a National Park Reserve or a National Marine Conservation Area, terms and conditions governing harvest will be developed following consultations with Parks Canada.

Sanitary and Biotoxin Closures:

- Collection of bivalves from areas in closed status for sanitary contamination under the Management of Contaminated Fisheries Regulations is not authorized. All clam harvesters are advised to check for both bivalve shellfish biotoxin (PSP/Redtide, ASP, DSP) sanitary (emergency, annual, seasonal) contamination closures, prior to any harvest or consumption. Information on in-season closures due to biotoxins and on annual sanitary (human and animal waste) contamination closures is available at local DFO offices, by calling the toll-free information line at 1-866-431-3474, or on the Internet at www.pac.dfo-mpo.gc.ca/psp.

Gear: TFN members propose to use typical hand pick harvesting techniques (shoves, rakes, and buckets) to harvest intertidal bivalves for FSC purposes.

Size: There are currently no size restrictions for FSC harvests of intertidal bivalves.

Shrimp and Prawns

Conservation: No conservation concerns have been identified for shrimp and prawns in the TFA.

TFN Fishery: TFN currently does not hold a harvest document for Shrimp and Prawns. Upon request by TFN, shrimp and prawns may be harvested for FSC purposes by any designated TFN fishers at the times and locations defined in a Tsawwassen Harvest Document. TFN fishers and the TFN Fisheries Department will endeavor to minimize the encounter rate and harvest for non-target species.

- Timing:** From a date that is established in a Tsawwassen Harvest Document through 31 March 2019, 24 hours per day, everyday.
- Location:** As noted in the Tsawwassen FOG document, buoys are not permitted in the portion of the TFA defined as the “Navigational No Float Zone”. As indicated for crab, when a harvest document for shrimp and prawns is issued, TFN fishers will be permitted to fish for shrimp and prawns in this zone, but buoys for their shrimp and prawn traps must remain outside this zone.
- Gear:** TFN fishers propose to use standard shrimp and prawn traps to harvest shrimp and prawns for FSC purposes. Number of traps will be determined.
- Size:** There are currently no size restrictions for FSC shrimp and prawn harvests.

Rockfish, Lingcod, Halibut, Dogfish, and Sole

- Conservation:** Monitoring and research programs have indicated that inshore rockfish stocks (Yelloweye, Quillback, Copper, China, and Tiger) and Lingcod in the Strait of Georgia are at low levels of abundance. The management objective for inshore rockfish species (which include Yelloweye, Quillback, Copper, China, and Tiger) is to continue conservation strategies that will ensure stock rebuilding over time. However, at this time, FSC fishing for rockfish and Lingcod will continue to be permitted. There are currently no conservation concerns for halibut, dogfish, or sole in the TFN fishing area.”
- TFN Fishery:** Rockfish, Lingcod, halibut, dogfish, sablefish, and flatfish may be harvested for FSC purposes by any designated TFN fishers at the times and locations defined in a Tsawwassen Harvest Document. TFN fishers and the Tsawwassen Natural Resource Department will endeavor to minimize the encounter rate and harvest for non-target species.
- Timing:** From 1 April 2018 through 31 March 2019, 24 hours per day, every day.
- Gear:** TFN members will use long line gear and rod and reel to harvest rockfish, Lingcod, halibut, dogfish, and sole for FSC purposes.
- Size:** There are currently no size restrictions for FSC harvests of rockfish, Lingcod, halibut, dogfish, and sole.
- Expectation:** Fisheries and Oceans Canada has been asked to provide information on the status of groundfish species found in the TFA and any closures for groundfish species in the TFA.

APPENDIX B
Examples of Harvest Documents



Licence Number: XHD 8 2018

File Number: LFA-18-HD 410/TSAWWASSEN

Valid From: 27-Apr-2018

Expiry Date: 29-Apr-2018

This licence and/or permit is issued under the authority of SECTION 4 OF THE ABORIGINAL COMMUNAL FISHING LICENCES REGULATIONS.

This licence and/or permit authorizes the person(s) listed below, subject to the following terms and conditions, to collect the species and quantity of fish identified below for: Food, Social, and Ceremonial purposes. Non-compliance with any condition of this licence and/or permit may result in the cancellation of this licence and/or permit.

Licence/Permit Activity Description:

HARVEST DOCUMENT FOR TSAWWASSEN FIRST NATION FOR SALMON

Whereas a final agreement with Tsawwassen First Nation is now in effect;

And whereas the final agreement describes a fishing right and provides for the issuance of harvest documents for the fishing right.

And whereas, under the final agreement, a harvest document may be, among other things, a licence or other document, or amendment thereto, issued by the Minister under Federal Law or Provincial Law in respect of the fishing right;

Now therefore, this harvest document is issued under the authority of section 7 of the Fisheries Act and section 4 of the Aboriginal Communal Fishing Licences Regulations.

This harvest document is issued to Tsawwassen First Nation in accordance with the final agreement and confers, subject to the Fisheries Act and regulations thereunder, the authority to fish for the following purposes: Food, Social and Ceremonial.

Period of Activity:

Subject to amendments to the conditions of this harvest document and subject to close times as may be varied by the Director General, Pacific Region, DFO in accordance with the Fishery (General) Regulations, species of fish set out in this harvest document may be harvested under this licence. Subject to closures and other terms and conditions of this licence, the authority to fish under this licence will expire on April 29, 2018 or earlier if DFO, after consultation with Tsawwassen First Nation has determined there is a conservation concern.

Licence Holder:

FIN: 108234

TSAWWASSEN FIRST NATION

Allowable Fishing Times:

Fishing periods defined for a species supersede all periods defined in this section.

Start: Friday, April 27, 2018 at 18:00

End: Sunday, April 29, 2018 at 06:00

Species, Quantity of Fish, Area(s) and Gear:

Species: CHINOOK SALMON (*Oncorhynchus tshawytscha*)

Allowable Start: Friday, April 27, 2018 at 18:00

Fishing End: Sunday, April 29, 2018 at 06:00

Times:

Gear: Gillnet, Drift

Gillnet, Set, Anchored

Licence Area: TSAWWASSEN TREATY FISHING AREA



Licence Number: XHD 8 2018

File Number: LFA-18-HD 410/TSAWWASSEN

Valid From: 27-Apr-2018

Expiry Date: 29-Apr-2018

Additional Information:

Additional Information:

Drift Nets on condition that: i. Nets do not exceed a maximum of 50 fathoms or 300 feet in length and a maximum depth of 60 meshes. ii. Each Participant fishes only one net, iii. Only one net is fished from any vessel, iv. Each net is attended at all times by the Participant who is fishing the net. v. No vessel fishing under the authority of this harvest document has on board, in a hung condition, any net that does not meet the conditions in (i) above, and vi. Spare nets on board a vessel actively fishing are kept in a stowed condition.

Set Nets on condition that: i. Nets do not exceed a maximum of 10 fathoms or 60 feet and a maximum depth of 60 meshes, ii. All Set Nets are identified by a floating buoy prominently displaying the Participant's designation number, and the Participant's designation number is the only number displayed on the buoy, and, iii. All Set Nets fished from poles have buoys attached to the end of the net farthest from the beach by means of a tag line of sufficient length to allow the buoys to be on the surface of the water and clearly visible for inspection at all times.

AREA: Fishing is permitted in the following area: Those waters of the main arm of the Fraser River westerly of the power lines immediately downstream of the Port Mann Bridge, the waters of the North Arm of the Fraser River from the junction of the main arm downstream to the Arthur Laing Bridge, the waters of the Middle arm of the Fraser River, the waters of the Strait of Georgia bounded by a line commencing at 49° 11' 3.1524" N latitude and 123° 12' 26.08868" W longitude then to 49° 7' 48.216" N latitude and 123° 19' 50.4228" W longitude then to 49° 5' 15.6948" N latitude and 123° 18' 36.8958" W longitude then to 49° 0' 8.0028" N latitude and 123° 18' 5.1156" W longitude then to 49° 0' 7.5564" N latitude and 123° 5' 27.528" W longitude and the waters of Boundary Bay bounded by a line commencing at 49° 0' 7.5198" N latitude and 123° 2' 6.5898" W longitude then to 49° 0' 7.5414" N latitude and 122° 49' 10.8552" W longitude then to 49° 1' 15.2256" N latitude and 122° 48' 20.7858" W longitude. Portions of DFO Management Sub-areas 29-6, 29-7, 29-8, 29-9, 29-10, 29-11, 29-12, 29-13, 29-14, 29-17.

Terms and Conditions:

Definitions

"Drift Net" means a gillnet free floating in the water, not attached in any manner to the shore, operated from a boat.

"DFO" means the Department of Fisheries and Oceans.

"Fishery" means fishing under the authority of this harvest document.

"Identification Number" in respect of a vessel means

(a) in the case of a registered commercial fishing vessel, the vessel registration number, and

(b) in the case of a vessel that is not a registered commercial fishing vessel, the number of the vessel identification decal issued by Tsawwassen First Nation.

"Observer" means an observer designated under section 39 of the Fishery (General) Regulations.

"Participant" means an individual carrying on fishing or any related activity, including transporting fish caught under the authority of this harvest document.

"Set Net" means a gillnet that is either tied to shore at one end and anchored in the river at the other end, or anchored in the river at both ends, or tied to the shore at one end and tied to a net pole at the other end.

"TFN" means Tsawwassen First Nation

"TFD" means Tsawwassen Fishing Department located at 1926 Tsawwassen Drive, V4M 4G2 604-943-2112.

Species and Quantity

The Fishery is limited to a harvest of Chinook salmon.



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Valid From: 27-Apr-2018

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All efforts and attempts shall be made to return all non-target species including steelhead and sturgeon alive and unharmed.

Steelhead and Sturgeon must not be retained.

Use of Fish

Fish caught under this licence are for food, social and ceremonial purposes. Without prejudice to future agreements or regulations, sale of Fish caught under this licence is **not** permitted.

Designation of Individuals and Vessels Tsawwassen First Nation may not designate individuals who are not Tsawwassen Members to harvest salmon.

Where Tsawwassen First Nation designates an individual; a Tsawwassen fishing licence will be issued. An individual fishing under this harvest document must carry their Tsawwassen fishing licence at all times while participating in the Fishery or while transporting fish harvested in the Fishery and must present it to any DFO Fishery Officer, DFO Fishery Guardian or Aboriginal Fishery Officer upon request.

A vessel used in the Fishery must be identified by affixing a vessel identification decal issued by Tsawwassen First Nation. The decal must be affixed to the vessel so that the decal is legible and unobstructed when viewed from another vessel or from shore. Where the vessel is not a registered commercial vessel, the decal must be uniquely numbered. Where the vessel is a registered commercial vessel, the decal must not be numbered.

Prior to each fishing period, the Tsawwassen First Nation will provide to DFO a list of Tsawwassen First Nation members and vessels designated to fish under this Harvest Document and, in the case of a vessel, the vessel's Identity Number, and will immediately inform DFO of any changes to the list.

Catch Monitoring and Harvest Reporting

1.1 Participant and Interview Data

Participants are required to notify the TFD of their intentions to harvest fish prior to their participation in each fishing period and report their catch and fishing effort information to the TFD after completion of each fishing period. These notifications and reports can be provided by phone to the TFD or by interview to an on-duty member of the TFN catch monitoring crew. Interviewers will record Salmon catch and effort information on the "TFN Salmon Fisheries Interview Data Form".

1.2 Daily Fishing Logs

Each Participant will maintain a daily fishing log using the "TFN Salmon Fisheries Log Data Form". Upon completion of each fishing period, each Participant will submit logs to monitors at landing sites or directly to the TFD office.

1.3 Validation

TFN will conduct on-water catch monitoring surveys or TFN fisheries officer patrols at least once every day during fishing period and, will record vessels participating in the Fishery. TFN will compare these records with the list of vessels designated to fish under this harvest document, will observe catches and compare it with catch reported orally to the TFD or recorded in daily logs.

Catch per vessel data will be verified through a random and representative sampling of a percentage of vessel landings by TFN shore based monitors. Efforts should be made to provide a representative sample of the various vessel types, fishing locations and gear observed in the Fishery in these validation activities. During landing validation TFN monitors will interview the Participants to obtain hours fished, number and species of Salmon and other species



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retained and released and perform a count the vessel's catch. The percentage of vessels needing validation will vary dependent on the type of fishery and will be discussed at joint technical committee meetings or in season as needed but it is proposed that coverage should be in the range of 20%.

1.4 Reporting

Within 24 hours of the close of a fishing period, TFN will provide a preliminary catch report to DFO, including the names and the Vessel Identification Numbers that participated in the Fishery, the gear used, hours fished, status of the report (final or preliminary), number and species of Salmon and other species retained, and number and species of Salmon and other species released. Along with reported catch information, TFN will submit a report of validations conducted during the opening, including Vessel Identification Numbers, gear type, hours fished, number and species of Salmon and other species kept and number and species of Salmon and other species released. TFN will contact Participants who did not report after the Fishing period to determine whether they did participate, and if so, collect the requisite information. The preliminary catch report will be finalized within 48 hours of the close of the Fishing period.

Compliance with the Fisheries Act

Pursuant to subsection 22(6) of the Fishery (General) Regulations, compliance with the Fisheries Act and the regulations made under the Act is a condition of this licence.

Licence Issued: 26 April 2018

Licence Printed: 26 April 2018

Licence Issued By: BRIAN MATTS, Fisheries and Oceans Canada



Licence Number: XHD 1 2018

File Number: LFA-18-HD401/TSAWWASSEN

Valid From: 01-Jan-2018

Expiry Date: 31-Mar-2018

HARVEST DOCUMENT FOR TSAWWASSEN FIRST NATION FOR CRAB

Whereas a final agreement with Tsawwassen First Nation is now in effect;

And whereas the final agreement describes a fishing right and provides for the issuance of harvest documents for the fishing right.

And whereas, under the final agreement, a harvest document may be, among other things, a licence or other document, or amendment thereto, issued by the Minister under Federal Law or Provincial Law in respect of the fishing right;

Now therefore, this harvest document is issued under the authority of section 7 of the Fisheries Act and section 4 of the Aboriginal Communal Fishing Licences Regulations.

This harvest document is issued to Tsawwassen First Nation in accordance with the final agreement and confers, subject to the Fisheries Act and regulations thereunder, the authority to fish for the following purposes: Food, Social and Ceremonial.

Period of Activity:

Subject to amendments to the conditions of this harvest document and subject to close times as may be varied by the Director General, Pacific Region, DFO in accordance with the Fishery (General) Regulations, species of fish set out in this licence may be harvested under this licence. Subject to closures and other terms and conditions of this licence, the authority to fish under this licence will expire on March 31, 2018 or earlier if DFO, after consultation with the First Nation has determined that the maximum quantity has been reached.

Licence Holder:

FIN: 108234
1926 TSAWWASSEN DRIVE
TSAWWASSEN BC V4M 4G2

TSAWWASSEN FIRST NATION

Contact Number: 604-943-4199
Fax Number: 604-943-9226

Allowable Fishing Times:

Fishing periods defined for a species supersede all periods defined in this section.

Start: Monday, January 1, 2018 at 00:01

End: Saturday, March 31, 2018 at 23:59

Individuals or groups assisting with the authorized activity:

Tsawwassen First Nation may not designate individuals who are not Tsawwassen Members to harvest crab.

Where Tsawwassen First Nation designates an individual, a Tsawwassen fishing licence will be issued. The Tsawwassen fishing licence must be carried at all times while participating in the Fishery or while transporting fish harvested in the Fishery and must be presented to any DFO Fishery Officer, DFO Fishery Guardian or Aboriginal Fishery Officer upon request.

A vessel used in the Fishery must be identified by affixing a vessel identification decal issued by Tsawwassen First Nation. The decal must be affixed to the vessel so that the decal is legible and unobstructed when viewed from another vessel or from shore. Where the vessel is not a registered commercial vessel, the decal must be uniquely numbered. Where the vessel is a registered commercial vessel, the decal must not be numbered.

Before the Fishery commences, Tsawwassen First Nation will provide to DFO a list of Tsawwassen First Nation members and vessels designated to fish under this Harvest Document and, in the case of a vessel, the vessel's Identity Number, and will immediately inform DFO of any changes to the list.



Species, Quantity of Fish, Area(s) and Gear:

Species: DUNGENESS CRAB (*Metacarcinus magister*); GRACEFUL CRAB (*Cancer gracilis*); RED ROCK CRAB (*Cancer productus*);

Gear: Hand Picking
Lift Net
Trap, Crab

Licence Area: See Additional Description

Additional Descriptions:

Fishing is permitted in the following area(s): The waters of the Strait of Georgia bounded by a line commencing at 49° 11' 3.1524" N latitude and 123° 12' 26.08868" W longitude then to 49° 7' 48.216" N latitude and 123° 19' 50.4228" W longitude then to 49° 5' 15.6948" N latitude and 123° 18' 36.8958" W longitude then to 49° 0' 8.0028" N latitude and 123° 18' 5.1156" W longitude then to 49° 0' 7.5564" N latitude and 123° 5' 27.528" W longitude and the waters of Boundary Bay bounded by a line commencing at 49° 0' 7.5198" N latitude and 123° 2' 6.5898" W longitude then to 49° 0' 7.5414" N latitude and 122° 49' 10.8552" W longitude then to 49° 1' 15.2256" N latitude and 122° 48' 20.7858" W longitude. Portions of DFO Management Subareas 29-6, 29-7, 29-8, 29-9, 29-10.

Species and Quantity:

The Fishery is limited to a harvest of: Dungeness Crab, Graceful Crab and Red Rock Crab.

The minimum size for Dungeness Crab is 165 mm and for Red Rock Crab is 115 mm, both measured in a straight line across the widest part of the carapace, or shell.

All female crabs and crabs less than the minimum size limit shall be immediately released to the area of capture in a manner that causes least harm. No female or undersized crabs shall be retained.

Soft-Shell Periods: Fishers are reminded that there is increased mortality during the crab soft-shell periods and are encouraged to carry out their fishing activity, as much as possible, during other time periods. The legal-sized male crab soft-shell periods are April to mid-June in the Fraser River estuary and May to mid-July in Boundary Bay.

The following gear is permitted to be used:

Hand-picking, Dip Net, Ring Net, and Traps, on condition that:

(i) Traps set individually each have attached a floating buoy legibly marked with the name of the First Nation and Participant and with the Identification Number for the vessel used; and multiple traps set in a string have a floating buoy legibly marked with the name of the First Nation and Participant and with the Identification Number for the vessel used attached to both ends of each string. All submerged fishing gear must have a float of sufficient size such that it will not submerge with tidal or current change.

(ii) All buoy lines must be of a non-floating material so that the lines remain below the surface of the water while fishing, in order to minimize navigational hazards.

(iii) All crab traps must be fitted with at least one escape hole (ring) that is at least 100mm in diameter and that is not more than 100 mm below the top of the frame.



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(iv) All traps have a section in the top or side that has been secured by a length of untreated cotton twine no greater than No. 120. On deterioration this must produce arectangular opening with a minimum size of 7 cm x 20 cm, or a square opening with a minimum size of 11 cm x 11 cm.

(v) A maximum of 50 traps may be fished per vessel.

(vi) Each trap shall have a plastic trap tag attached to it. Each fisherman is issued 50 trap tags and 10 extra trap tags (in case some traps are lost).

(vii) If a harvester loses 10 or more plastic trap tags, the harvester should contact the Tsawwassen fisheries department to obtain a replacement set of trap tags (marked specifically as replacement tags). The regular tags must be removed from the traps, returned to the Tsawwassen fisheries department, and replaced with the new replacement set.

(viii) Floating buoys must remain at all times outside of the Navigational No Float Zone shown on the map in Schedule A to this harvest document. Any floating buoys placed in the Navigational No Float Zone are subject to removal under authority of the Navigable Waters Protection Act.

Additional Information:

Commercial Fishing Vessels

Any commercial fishing vessels participating in the Tsawwassen FSC crab fishery must be available for inspection prior to engaging in the Area I commercial fishery. No fish harvested under the authority of this licence may be on board a vessel engaged in commercial fishing operations. Commercial and FSC crab fishing trips must be conducted separately.

Terms and Conditions:

Definitions

"Commercial Fishing Gear" means power assisted gear commonly used in the commercial fishery including, but not limited to, hydraulic gurdies and trap haulers, powered drums, blocks or live rollers.

"Commercial Fishing Vessel" means a vessel that is registered according to the Pacific Fishery Regulations, 1993 and is used to fish for a species of fish which is authorized by a commercial fishing licence (including a "communal commercial fishing licence" issued under the Aboriginal Communal Fishing Licences Regulations). This does not include vessels without commercial fishing licences fishing for food, social and ceremonial ("FSC") purposes.

"DFO" means the Department of Fisheries and Oceans.

"First Nation" means the Tsawwassen First Nation.

"Fish" means those species of fish listed in Parts I & II of Schedule I of the Pacific Fishery Regulations, 1993, including herring spawn.

"Fishery" means fishing under the authority of this harvest document.

"Identification Number" in respect of a vessel means



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- (a) in the case of a registered commercial fishing vessel, the vessel registration number, and
- (b) in the case of a vessel that is not a registered commercial fishing vessel, the number of the vessel identification decal issue by Tsawwassen First Nation.

"Management Area" means a management area as defined in the Pacific Fishery Management Area Regulations.

"Observer" means an observer designated under section 39 of the Fishery (General) Regulations.

"Participant" means an individual carrying on fishing or any related activity, including transporting fish, caught under the authority of this harvest document.

"Subarea" means a Subarea as defined in the Pacific Fishery Management Area Regulations.

"Vessel Master" means the individual embarked on the vessel and responsible for the operation of the vessel and the fishing activities carried out under authority of this licence.

Use of Fish

Fish caught under this licence are for food, social and ceremonial purposes. Without prejudice to future agreements or regulations, sale of Fish caught under this licence is **not** permitted.

Catch Monitoring and Harvest Reporting

Participants will notify the Tsawwassen fisheries department before they initiate fishing efforts and will report their catch and fishing effort information after each fishing trip. These notifications and reports may be reported directly to the Tsawwassen fishing department or by interview to an on-duty member of the Tsawwassen fisheries department catch monitoring crew. The Tsawwassen fisheries department will record catch and effort information on the "TFN Crab Fishery Interview Data Form".

Within 72 hours of the end of each month, Tsawwassen First Nation will provide DFO with a list of all Participants and vessels that participated in the Fishery and a preliminary estimate of the total catch by species for that month.

Each Participant will maintain a daily fishing log for crab fishing efforts using the "TFN Crab Fisheries Log Data Form".

Validation

Tsawwassen First Nation will conduct on-water catch monitoring surveys or Tsawwassen First Nation's fisheries officer patrols at random intervals during the Fishery and will record Fishery participants and observe catches for comparison with reported list of Fishery participants and the catch reported in daily logs. Tsawwassen First Nation will conduct interviews, after completed fishing trips of fishers to obtain data that to validate the information recorded in the harvest logs.

Reporting

Within 72 hours of the end of each month, Tsawwassen First Nation will provide to Karen Burnett, DFO Management Biologist (telephone: 604 666-4819, fax:604-666-7112) a summary table showing the number of Participants interviewed after a fishing trip, the catch and effort observed and the catch and effort reported directly to Tsawwassen fisheries department and recorded in the daily fishing logs.

Key Contacts for this Licence

Contact Information for Fisheries and Oceans Canada (DFO) staffed positions identified within this licence are provided below:



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File Number: LFA-18-HD401/TSAWWASSEN

Valid From: 01-Jan-2018

Expiry Date: 31-Mar-2018

“DFO Resource Manager” Anna Magera, Phone: 604-916-6743, and Email: Anna.Magera@dfo-mpo.gc.ca.

“DFO Conservation and Protection Office - Steveston” Phone 604-664-9250, Fax: 604-664-9255

“DFO Conservation and Protection Office - Langley” Phone 604-607-4150, Fax: 604-607-4199

“DFO Management Biologist, Catch Monitoring” Karen Burnett, Phone 604-666-4819, Fax 604-666-7112, and Email: Karen.Burnett@dfo-mpo.gc.ca.

Compliance with the Fisheries Act

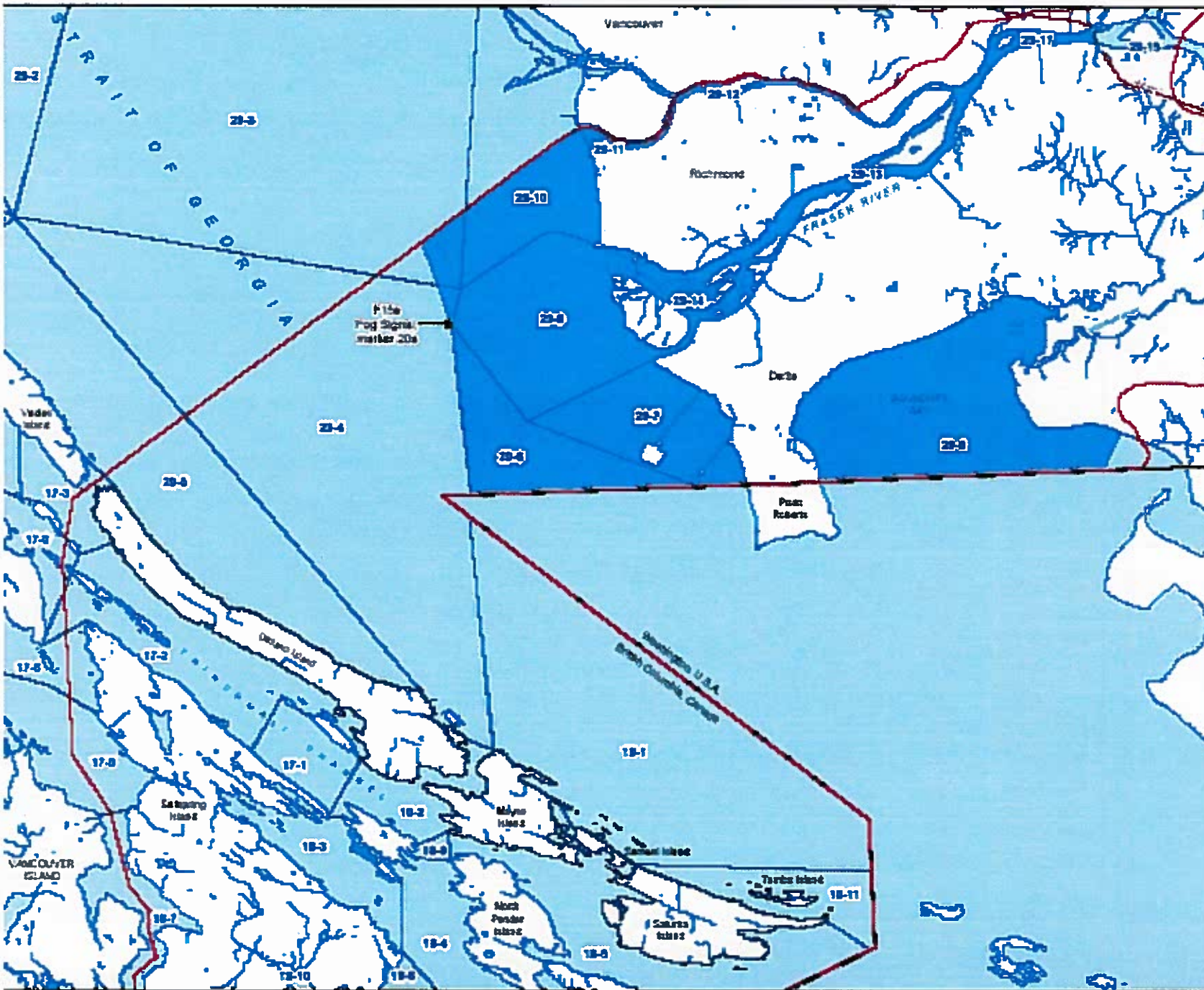
Pursuant to subsection 22(6) of the Fishery (General) Regulations, compliance with the Fisheries Act and the regulations made under the Act is a condition of this licence.

Licence Issued: 28 December 2017

Licence Printed: 28 December 2017

Licence Issued By: ANNA MAGERA, Fisheries and Oceans Canada

Appendix J-1: Tsawwassen Fishing Area and Tsawwassen Intertidal Bivalve Fishing Area



Legend

- Tsawwassen fishing Area
- Tsawwassen Intertidal Bivalve Area
- Tsawwassen Territory
- DFO Sub-area
- Water Body
- Watercourse
- Highway 1

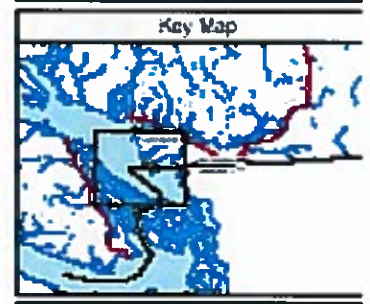
THE OFFICIAL VERSION OF THIS MAP IS HELD BY THE BC GOVERNMENT AND THE TERRITORIES OF CANADA AND THE PROVINCES OF BRITISH COLUMBIA. THIS MAP IS FOR ILLUSTRATIVE PURPOSES ONLY.

1:50,000

0 5 10

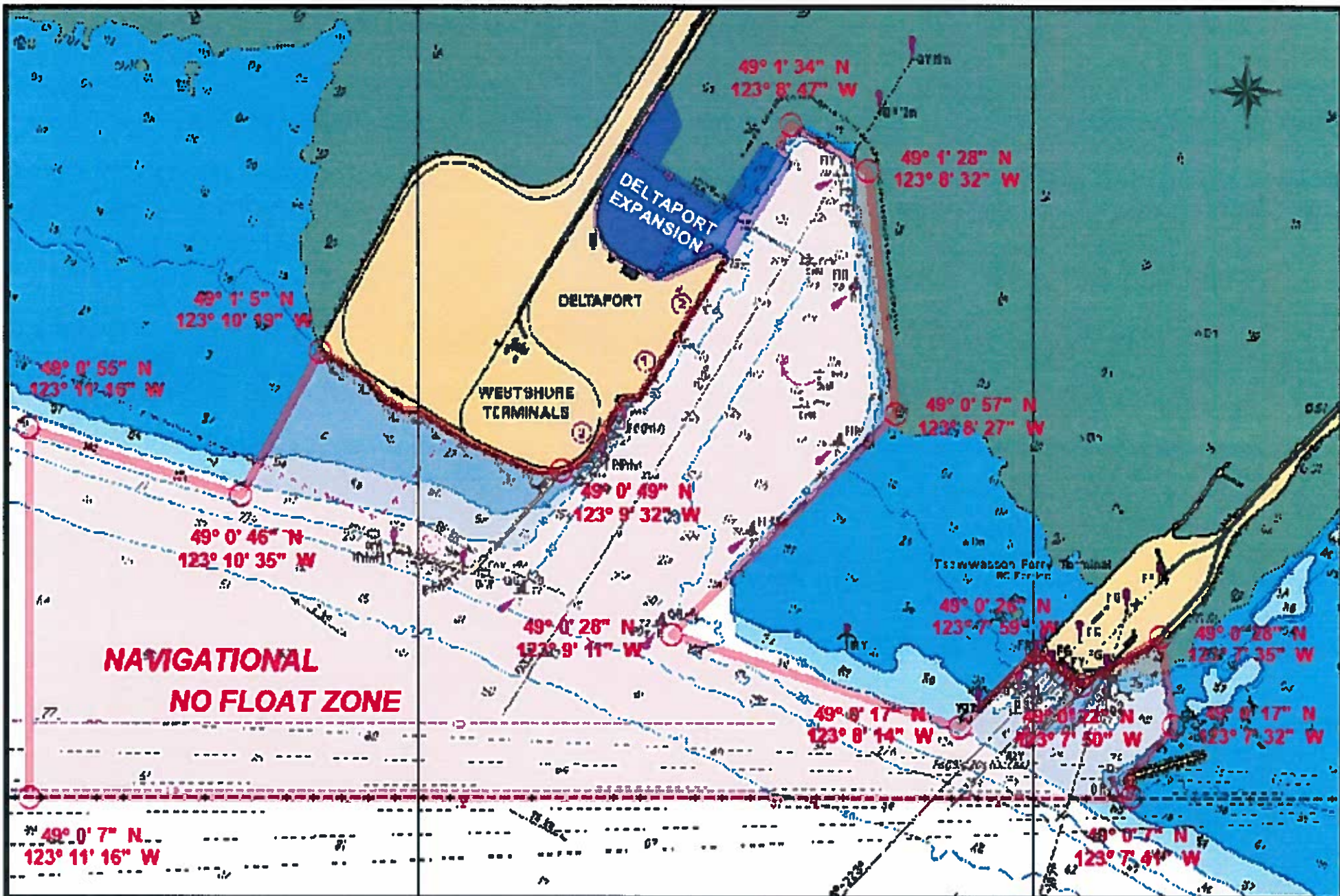
1 Kilometre

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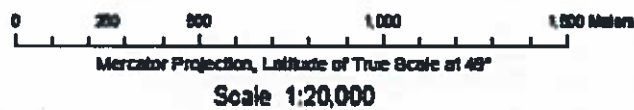


Produced November 22, 2005
 Data map derived from 1:25,000 TFSW data

Tsawwassen First Nation



ROBERTS BANK
NAVIGATIONAL NO FLOAT ZONE
FIRST NATIONS



-  Deltaport Expansion
-  No Crab Fishing

Map created on October 10, 2008.



Licence Number: XHD 5 2018
File Number: LFA-18-HD-LP 401/TSAWWASSEN
Valid From: 07-Apr-2018
Expiry Date: 11-Apr-2018

This licence and/or permit is issued under the authority of SECTION 4 OF THE ABORIGINAL COMMUNAL FISHING LICENCES REGULATIONS.

This licence and/or permit authorizes the person(s) listed below, subject to the following terms and conditions, to collect the species and quantity of fish identified below for: Food, Social, and Ceremonial purposes. Non-compliance with any condition of this licence and/or permit may result in the cancellation of this licence and/or permit.

Licence/Permit Activity Description:

HARVEST DOCUMENT FOR TSAWWASSEN FIRST NATION FOR EULACHON

Whereas a final agreement with Tsawwassen First Nation is now in effect;

And whereas the final agreement describes a fishing right and provides for the issuance of harvest documents for the fishing right.

And whereas, under the final agreement, a harvest document may be, among other things, a licence or other document, or amendment thereto, issued by the Minister under Federal Law or Provincial Law in respect of the fishing right;

Now therefore, this harvest document is issued under the authority of section 7 of the Fisheries Act and section 4 of the Aboriginal Communal Fishing Licences Regulations.

This harvest document is issued to Tsawwassen First Nation in accordance with the final agreement and confers, subject to the Fisheries Act and regulations thereunder, the authority to fish for the following purposes: Food, Social and Ceremonial.

Period of Activity:

Subject to amendments to the conditions of this harvest document and subject to close times as may be varied by the Director General, Pacific Region, DFO in accordance with the Fishery (General) Regulations, species of fish set out in this harvest document may be harvested under this licence. Subject to closures and other terms and conditions of this licence, the authority to fish under this licence will expire on Wednesday, April 11, 2018 or earlier if DFO, after consultation with Tsawwassen First Nation has determined there is a conservation concern.

Licence Holder:

FIN: 108234

TSAWWASSEN FIRST NATION

Allowable Fishing Times:

Fishing periods defined for a species supersede all periods defined in this section.

| | | | |
|--------------------|----------------------------------|------------------|------------------------------------|
| Start Date: | Saturday, April 7, 2018 | End Date: | Sunday, April 8, 2018 |
| Times: | 14:00 - 22:00 daily | | |
| Start: | Monday, April 9, 2018 at 20:00 | End: | Tuesday, April 10, 2018 at 04:00 |
| Start: | Tuesday, April 10, 2018 at 20:00 | End: | Wednesday, April 11, 2018 at 04:00 |

Individuals or groups assisting with the authorized activity:

TFN has designated the following individuals to participate in this fishery:

M/V-'Raven Lynn' Skipper-Nathan Wilson (April 7+8, 2018)

M/V-'Salish Challenger' Skipper- Riley Baird (April 9-11, 2018)



Licence Number: XHD 5 2018

File Number: LFA-18-HD-LP 401/TSAWWASSEN

Valid From: 07-Apr-2018

Expiry Date: 11-Apr-2018

Designations are personal and non-transferable. Participants who fish under this licence shall carry their Designation or Band Card to establish their membership in the First Nation while participating in the Fishery and while transporting fish harvested in the Fishery and will present such documentation on request by any fishery officer or fishery guardian.

Species, Quantity of Fish, Area(s) and Gear:

Species: EULACHON (Thaleichthys pacificus)
Allowable Fishing Times: Start Date: Saturday, April 7, 2018
End Date: Sunday, April 8, 2018
Times: 14:00 - 22:00 daily

Start: Monday, April 9, 2018 at 20:00
End: Tuesday, April 10, 2018 at 04:00

Start: Tuesday, April 10, 2018 at 20:00
End: Wednesday, April 11, 2018 at 04:00

Gear: Gillnet (unspecified)
Licence Area: TSAWWASSEN TREATY FISHING AREA
To be Retained: 518 Pounds

Additional Information:

Drift Nets on condition that:

- i. Each Participant may fish using one drift net.
- ii. Drift nets shall be no more than one hundred (100) metres in length and shall have a mesh size of no less than twenty-five (25) millimetres and no greater than fifty (50) millimetres.
- iii. This fishery will be monitored by TFN Enforcement staff.

AREA:

Drift fishing is permitted in the following area: Those waters of the main arm of the Fraser River westerly of the power lines immediately downstream of the Port Mann Bridge, the waters of the North Arm of the Fraser River from the junction of the main arm downstream to the Arthur Laing Bridge, the waters of the Middle arm of the Fraser River, the waters of the Strait of Georgia bounded by a line commencing at 49° 11' 3.1524" N latitude and 123° 12' 26.08868" W longitude then to 49° 7' 48.216" N latitude and 123° 19' 50.4228" W longitude then to 49° 5' 15.6948" N latitude and 123° 18' 36.8958" W longitude then to 49° 0' 8.0028" N latitude and 123° 18' 5.1156" W longitude then to 49° 0' 7.5564" N latitude and 123° 5' 27.528" W longitude and the waters of Boundary Bay bounded by a line commencing at 49° 0' 7.5198" N latitude and 123° 2' 6.5898" W longitude then to 49° 0' 7.5414" N latitude and 122° 49' 10.8552" W longitude then to 49° 1' 15.2256" N latitude and 122° 48' 20.7858" W longitude. Portions of DFO Management Sub-areas 29-6, 29-7, 29-8, 29-9, 29-10, 29-11, 29-12, 29-13, 29-14, 29-17.

Terms and Conditions:



Licence Number: XHD 5 2018

File Number: LFA-18-HD-LP 401/TSAWWASSEN

Valid From: 07-Apr-2018

Expiry Date: 11-Apr-2018

Definitions

"Drift Net" means a gillnet free floating in the water, not attached in any manner to the shore, operated from a boat.

"DFO" means the Department of Fisheries and Oceans.

"Eulachon" means *Thaleichthys pacificus*

"Fishery" means fishing under the authority of this harvest document.

"Identification Number" in respect of a vessel means

(a) in the case of a registered commercial fishing vessel, the vessel registration number, and

(b) in the case of a vessel that is not a registered commercial fishing vessel, the number of the vessel identification decal issued by Tsawwassen First Nation.

"Observer" means an observer designated under section 39 of the Fishery (General) Regulations.

"Participant" means an individual carrying on fishing or any related activity, including transporting fish caught under the authority of this harvest document.

"TFN" means Tsawwassen First Nation

"TFD" means Tsawwassen Fishing Department located at 1926 Tsawwassen Drive, V4M 4G2 604-943-2112.

Species and Quantity

The Fishery is limited to the harvest of 518 lbs Eulachon (*Thaleichthys pacificus*).

All efforts and attempts shall be made to return all non-target species including Chinook salmon, Steelhead salmon and Sturgeon to the water alive and unharmed.

Chinook salmon, Steelhead salmon and Sturgeon must not be retained.

Use of Fish

Fish caught under this licence are for food, social and ceremonial purposes. Without prejudice to future agreements or regulations, sale of Fish caught under this licence is not permitted.

Designation of Individuals and Vessels

Tsawwassen First Nation may not designate individuals who are not Tsawwassen Members to harvest Eulachon.

Where Tsawwassen First Nation designates an individual; a Tsawwassen fishing licence will be issued. An individual fishing under this harvest document must carry their Tsawwassen fishing licence at all times while participating in the Fishery or while transporting fish harvested in the Fishery and must present it to any DFO Fishery Officer, DFO Fishery Guardian or Aboriginal Fishery Officer upon request.

A vessel used in the Fishery must be identified by affixing a vessel identification decal issued by Tsawwassen First Nation. The decal must be affixed to the vessel so that the decal is legible and unobstructed when viewed from another vessel or from shore. Where the vessel is not a registered commercial vessel, the decal must be uniquely numbered. Where the vessel is a registered commercial vessel, the decal must not be numbered.

Catch Monitoring and Harvest Reporting

1.0 Participant and Interview Data

Participants are required to notify the TFD of their intentions to harvest fish prior to their participation in each fishing period and report their catch and fishing effort information to the TFD after completion of each fishing period. These notifications and reports can be provided by phone to the TFD or by interview to an on-duty member of the TFN catch monitoring crew. Interviewers will record Eulachon catch and effort information on the "TFN Eulachon Fisheries Interview Data Form".



Licence Number: XHD 5 2018

File Number: LFA-18-HD-LP 401/TSAWWASSEN

Valid From: 07-Apr-2018

Expiry Date: 11-Apr-2018

1.1 Reporting

Within 24 hours of the close of a fishing period, TFN will provide a preliminary catch report to DFO, including the names and the Vessel Identification Numbers that participated in the Fishery, the gear used, hours fished, status of the report (final or preliminary), number of Eulachon retained, and the number of other species released. Along with reported catch information, The preliminary catch report will be finalized within 48 hours of the close of the Fishing period.

Compliance with the Fisheries Act

Pursuant to subsection 22(6) of the Fishery (General) Regulations, compliance with the Fisheries Act and the regulations made under the Act is a condition of this licence.

Licence Issued: 06 April 2018

Licence Printed: 06 April 2018

Licence Issued By: BRIAN MATTS, Fisheries and Oceans Canada



Licence Number: XHD 25 2018

File Number: LFA-18-HD 450/TSAWWASSEN

Valid From: 07-Aug-2018

Expiry Date: 07-Aug-2018

This licence and/or permit is issued under the authority of SECTION 4 OF THE ABORIGINAL COMMUNAL FISHING LICENCES REGULATIONS.

This licence and/or permit authorizes the person(s) listed below, subject to the following terms and conditions, to collect the species and quantity of fish identified below for: Food, Social, and Ceremonial purposes. Non-compliance with any condition of this licence and/or permit may result in the cancellation of this licence and/or permit.

Licence/Permit Activity Description:

HARVEST DOCUMENT FOR TSAWWASSEN FIRST NATION FOR SALMON

Whereas a final agreement with Tsawwassen First Nation is now in effect;

And whereas the final agreement describes a fishing right and provides for the issuance of harvest documents for the fishing right.

And whereas, under the final agreement, a harvest document may be, among other things, a licence or other document, or amendment thereto, issued by the Minister under Federal Law or Provincial Law in respect of the fishing right;

Now therefore, this harvest document is issued under the authority of section 7 of the Fisheries Act and section 4 of the Aboriginal Communal Fishing Licences Regulations.

This harvest document is issued to Tsawwassen First Nation in accordance with the final agreement and confers, subject to the Fisheries Act and regulations thereunder, the authority to fish for the following purposes: Food, Social and Ceremonial.

Period of Activity:

Subject to amendments to the conditions of this harvest document and subject to close times as may be varied by the Director General, Pacific Region, DFO in accordance with the Fishery (General) Regulations, species of fish set out in this harvest document may be harvested under this licence. Subject to closures and other terms and conditions of this licence, the authority to fish under this licence will expire on August 7, 2018 or earlier if DFO, after consultation with Tsawwassen First Nation has determined there is a conservation concern.

Licence Holder:

FIN: 108234

TSAWWASSEN FIRST NATION

Allowable Fishing Times:

Fishing periods defined for a species supersede all periods defined in this section.

Start: Tuesday, August 7, 2018 at 09:00

End: Tuesday, August 7, 2018 at 21:00

Species, Quantity of Fish, Area(s) and Gear:

Species: SOCKEYE SALMON (*Oncorhynchus nerka*)

Allowable Start: Tuesday, August 7, 2018 at 09:00

Fishing End: Tuesday, August 7, 2018 at 21:00

Times:

Gear: Gillnet, Drift

Gillnet, Set, Anchored

Licence Area: TSAWWASSEN TREATY FISHING AREA



Additional Information:

Additional Information:

Drift Nets on condition that:

- i. Nets do not exceed a maximum of 50 fathoms or 300 feet in length and a maximum depth of 60 meshes with a maximum mesh size of five and seven-eighths (5 7/8") inches with 3:1 hang ratio.
- ii. Each Participant fishes only one net.
- iii. Only one net is fished from any vessel.
- iv. Each net is attended at all times by the Participant who is fishing the net.
- v. No vessel fishing under the authority of this harvest document has on board, in a hung condition, any net that does not meet the conditions in (i) above, and vi. Spare nets on board a vessel actively fishing are kept in a stowed condition.

Set Nets on condition that:

- i. Nets do not exceed a maximum of 10 fathoms or 60 feet and a maximum depth of 60 meshes with a maximum mesh size of five and seven-eighths (5 7/8") inches with 3:1 hang ratio.
- ii. All Set Nets are identified by a floating buoy prominently displaying the Participant's designation number, and the Participant's designation number is the only number displayed on the buoy; and,
- iii. All Set Nets fished from poles have buoys attached to the end of the net farthest from the beach by means of a tag line of sufficient length to allow the buoys to be on the surface of the water and clearly visible for inspection at all times.

AREA: Fishing is permitted in the following area:

Those waters of the main arm of the Fraser River westerly of the power lines immediately downstream of the Port Mann Bridge, the waters of the North Arm of the Fraser River from the junction of the main arm downstream to the Arthur Laing Bridge, the waters of the Middle arm of the Fraser River, the waters of the Strait of Georgia bounded by a line commencing at 49° 11' 3.1524" N latitude and 123° 12' 26.08868" W longitude then to 49° 7' 48.216" N latitude and 123° 19' 50.4228" W longitude then to 49° 5' 15.6948" N latitude and 123° 18' 36.8958" W longitude then to 49° 0' 8.0028" N latitude and 123° 18' 5.1156" W longitude then to 49° 0' 7.5564" N latitude and 123° 5' 27.528" W longitude and the waters of Boundary Bay bounded by a line commencing at 49° 0' 7.5198" N latitude and 123° 2' 6.5898" W longitude then to 49° 0' 7.5414" N latitude and 122° 49' 10.8552" W longitude then to 49° 1' 15.2256" N latitude and 122° 48' 20.7858" W longitude. Portions of DFO Management Subareas 29-6, 29-7, 29-8, 29-9, 29-10, 29-11, 29-12, 29-13, 29-14, 29-17.

Terms and Conditions:

Definitions

"Drift Net" means a gillnet free floating in the water, not attached in any manner to the shore, operated from a boat.

"DFO" means the Department of Fisheries and Oceans.

"Fishery" means fishing under the authority of this harvest document.

"Identification Number" in respect of a vessel means

(a) in the case of a registered commercial fishing vessel, the vessel registration number, and

(b) in the case of a vessel that is not a registered commercial fishing vessel, the number of the vessel identification decal issued by Tsawwassen First Nation.

"Observer" means an observer designated under section 39 of the Fishery (General) Regulations.

'Landing Site' means a site designated by DFO and the Monitoring and Enforcement Committee that has a monitor on duty during the Fishery. For this licence, the landings sites are located at: **1) Shearer Seafoods (Annieville)**



Licence Number: XHD 25 2018

File Number: LFA-18-HD 450/TSAWWASSEN

Valid From: 07-Aug-2018

Expiry Date: 07-Aug-2018

2) Packer vessel- M/V "Kaitlin" (Captains Cove) **3)** Packer vessel- M/V-"Ocean Ranger" **4)** Ladner Harbour (landing site) **5)** Steveston Dock-Trites.

"Participant" means an individual carrying on fishing or any related activity, including transporting fish caught under the authority of this harvest document.

"Set Net" means a gillnet that is either tied to shore at one end and anchored in the river at the other end, or anchored in the river at both ends, or tied to the shore at one end and tied to a net pole at the other end.

"TFN" means Tsawwassen First Nation

"TFD" means Tsawwassen Fishing Department located at 1926 Tsawwassen Drive, V4M 4G2 604-943-2112.

Species and Quantity

The Fishery is limited to a harvest of sockeye salmon.

All efforts and attempts shall be made to return all non-target species including chinook salmon, steelhead and sturgeon alive and unharmed.

Chinook salmon, steelhead and sturgeon must not be retained.

Use of Fish

Fish caught under this licence are for food, social and ceremonial purposes. Without prejudice to future agreements or regulations, sale of Sockeye salmon caught under this licence is permitted.

Designation of Individuals and Vessels

Tsawwassen First Nation may not designate individuals who are not Tsawwassen Members to harvest salmon.

Tsawwassen First Nation may not designate individuals who are not Tsawwassen Members to harvest salmon. Where Tsawwassen First Nation designates an individual; a Tsawwassen fishing licence will be issued. An individual fishing under this harvest document must carry their Tsawwassen fishing licence at all times while participating in the Fishery or while transporting fish harvested in the Fishery and must present it to any DFO Fishery Officer, DFO Fishery Guardian or Aboriginal Fishery Officer upon request.

A vessel used in the Fishery must be identified by affixing a vessel identification decal issued by Tsawwassen First Nation. The decal must be affixed to the vessel so that the decal is legible and unobstructed when viewed from another vessel or from shore. Where the vessel is not a registered commercial vessel, the decal must be uniquely numbered. Where the vessel is a registered commercial vessel, the decal must not be numbered.

Prior to each fishing period, the Tsawwassen First Nation will provide to DFO a list of Tsawwassen First Nation members and vessels designated to fish under this Harvest Document and, in the case of a vessel, the vessel's Identity Number, and will immediately inform DFO of any changes to the list.

Catch Monitoring and Harvest Reporting

1.1 Participant and Interview Data

Participants are required to notify the TFD of their intentions to harvest fish prior to their participation in each fishing period and report their catch and fishing effort information to the TFD after completion of each fishing period. These



Licence Number: XHD 25 2018

File Number: LFA-18-HD 450/TSAWWASSEN

Valid From: 07-Aug-2018

Expiry Date: 07-Aug-2018

notifications and reports can be provided by phone to the TFD or by interview to an on-duty member of the TFN catch monitoring crew. Interviewers will record Salmon catch and effort information on the "TFN Salmon Fisheries Interview Data Form".

1.2 Daily Fishing Logs

Each Participant will maintain a daily fishing log using the "TFN Salmon Fisheries Log Data Form". Upon completion of each fishing period, each Participant will submit logs to monitors at landing sites or directly to the TFD office.

1.3 Validation

TFN will conduct on-water catch monitoring surveys or TFN fisheries officer patrols at least once every day during fishing period and, will record vessels participating in the Fishery. TFN will compare these records with the list of vessels designated to fish under this harvest document, will observe catches and compare it with catch reported orally to the TFD or recorded in daily logs.

Catch per vessel data will be verified through a random and representative sampling of a percentage of vessel landings by TFN shore based monitors. Efforts should be made to provide a representative sample of the various vessel types, fishing locations and gear observed in the Fishery in these validation activities. During landing validation TFN monitors will interview the Participants to obtain hours fished, number and species of Salmon and other species retained and released and perform a count the vessel's catch. The percentage of vessels needing validation will vary dependent on the type of fishery and will be discussed at joint technical committee meetings or in season as needed but it is proposed that coverage should be in the range of 20%.

1.4 Reporting

Within 24 hours of the close of a fishing period, TFN will provide a preliminary catch report to DFO, including the names and the Vessel Identification Numbers that participated in the Fishery, the gear used, hours fished, status of the report (final or preliminary), number and species of Salmon and other species retained, and number and species of Salmon and other species released. Along with reported catch information, TFN will submit a report of validations conducted during the opening, including Vessel Identification Numbers, gear type, hours fished, number and species of Salmon and other species kept and number and species of Salmon and other species released. TFN will contact Participants who did not report after the Fishing period to determine whether they did participate, and if so, collect the requisite information. The preliminary catch report will be finalized within 48 hours of the close of the Fishing period.

Landing Slips

All fish caught by a Participant under the authority of this licence must be inspected by an Observer, Monitor, DFO fishery officer, or Aboriginal Fisheries Officer at the Participant's Landing Site, and such person shall issue a landing slip ('Landing Slip') to the Participant. The Participant must obtain a Landing Slip each and every time that salmon caught under the authority of this Licence are landed. The Landing Slip will specify:

- the Landing Site;
- the date and time of landing;
- the Participant's name and designation number;
- the number of salmon landed for each species of salmon;
- the name and signature of the inspecting Observer, Monitor, DFO fishery officer, or Aboriginal Fisheries Officer ; and
- in the case of drift net fishing, the vessel name, commercial fishing vessel number or Ministry of Transport identification number.

Proof of Landing



Licence Number: XHD 25 2018

File Number: LFA-18-HD 450/TSAWWASSEN

Valid From: 07-Aug-2018

Expiry Date: 07-Aug-2018

Except where fishing or transporting salmon to a Landing Site, a Participant having possession of salmon caught under the authority of this Licence must carry a Landing Slip for the salmon. The Participant shall show Landing Slips to any DFO Fishery Officer, Aboriginal Fisheries Officer, Monitor or Observer upon request.

Transportation of Salmon

A Participant will transport all fish caught under the Communal Commercial Licence from the fishing site where, or the boat from which, the fish were caught immediately and directly to a Landing Site for inspection and counting by species within one hour after the closing time as set out by the Communal Commercial Licence. A Participant may identify to the First Nation a second Participant who may transport the salmon to the Landing Site. No Participant will be authorized to transport salmon on behalf of more than three Participants in addition to him/herself. A Participant must inform the First Nation of such arrangements at least forty-eight hours prior to the start of a Fishery opening. The First Nation will provide DFO with a list of Participants authorized to transport salmon on behalf of other Participants during normal office hours of 0800 hours to 1600 hours, Monday to Thursday and prior to 1300 hours on Friday, and not less than six hours before the start of the Fishery opening.

Compliance with the Fisheries Act

Pursuant to subsection 22(6) of the Fishery (General) Regulations, compliance with the Fisheries Act and the regulations made under the Act is a condition of this licence.

Licence Issued: 04 August 2018

Licence Printed: 04 August 2018

Licence Issued By: BRIAN MATTS, Fisheries and Oceans Canada



Licence Number: XHD 2 2018

File Number: LFA-18-HD 400/TSAWWASSEN

Valid From: 01-Jan-2018

Expiry Date: 31-Mar-2018

This licence and/or permit is issued under the authority of SECTION 4 OF THE ABORIGINAL COMMUNAL FISHING LICENCES REGULATIONS.

This licence and/or permit authorizes the person(s) listed below, subject to the following terms and conditions, to collect the species and quantity of fish identified below for: Food, Social, and Ceremonial purposes. Non-compliance with any condition of this licence and/or permit may result in the cancellation of this licence and/or permit.

Licence/Permit Activity Description:

HARVEST DOCUMENT FOR TSAWWASSEN FIRST NATION FOR GROUND FISH

Whereas a final agreement with Tsawwassen First Nation is now in effect;

And whereas the final agreement describes a fishing right and provides for the issuance of harvest documents for the fishing right.

And whereas, under the final agreement, a harvest document may be, among other things, a licence or other document, or amendment thereto, issued by the Minister under Federal Law or Provincial Law in respect of the fishing right;

Now therefore, this harvest document is issued under the authority of section 7 of the Fisheries Act and section 4 of the Aboriginal Communal Fishing Licences Regulations.

This harvest document is issued to Tsawwassen First Nation in accordance with the final agreement and confers, subject to the Fisheries Act and regulations thereunder, the authority to fish for the following purposes: Food, Social and Ceremonial.

Period of Activity:

Subject to amendments to the conditions of this harvest document and subject to close times as may be varied by the Director General, Pacific Region, DFO in accordance with the Fishery (General) Regulations, species of fish set out in this licence may be harvested under this licence. Subject to closures and other terms and conditions of this licence, the authority to fish under this licence will expire on March 31, 2018 or earlier if DFO, after consultation with the First Nation has determined that the maximum quantity has been reached.

Licence Holder:

FIN: 108234

1926 TSAWWASSEN DRIVE

TSAWWASSEN BC V4M 4G2

TSAWWASSEN FIRST NATION

Contact Number: 604-943-4199

Fax Number: 604-943-9226

Allowable Fishing Times:

Fishing periods defined for a species supersede all periods defined in this section.

Start: Monday, January 1, 2018 at 00:01

End: Saturday, March 31, 2018 at 23:59

Individuals or groups assisting with the authorized activity:

Tsawwassen First Nation may not designate individuals who are not Tsawwassen Members to harvest groundfish.

Where Tsawwassen First Nation designates an individual; a Tsawwassen fishing licence will be issued. The Tsawwassen fishing licence must be carried at all times while participating in the Fishery or while transporting fish harvested in the Fishery and must be presented to any DFO Fishery Officer, DFO Fishery Guardian or Aboriginal Fishery Officer upon request.



Licence Number: XHD 2 2018

File Number: LFA-18-HD 400/TSAWWASSEN

Valid From: 01-Jan-2018

Expiry Date: 31-Mar-2018

A vessel used in the Fishery must be identified by affixing a vessel identification decal issued by Tsawwassen First Nation. The decal must be affixed to the vessel so that the decal is legible and unobstructed when viewed from another vessel or from shore. Where the vessel is not a registered commercial vessel, the decal must be uniquely numbered. Where the vessel is a registered commercial vessel, the decal must not be numbered.

Before the Fishery commences, Tsawwassen First Nation will provide to DFO a list of Tsawwassen First Nation members and vessels designated to fish under this Harvest Document and, in the case of a vessel, the vessel's Identity Number, and will immediately inform DFO of any changes to the list.

Species, Quantity of Fish, Area(s) and Gear:

Species: PACIFIC HALIBUT (*Hippoglossus stenolepis*); SABLEFISH (*Anoplopoma fimbria*); DOGFISH SHARKS (*Squalidae*); LINGCOD (*Ophiodon elongatus*); FLATFISH; ROCKFISH;

Gear: Rod & Reel - Jigging
Longline (unspecified)

Licence Area: Tsawwassen First Nation fishing area in PFMA 29

Additional Descriptions: **The following gear is permitted to be used:**

1. Rod and Reel - Jigging

- Participants will notify the Tsawwassen fisheries department before they initiate fishing efforts and will record fishing effort and fish retained and released by species on the TFN monthly calendar. This calendar will be submitted to TFN at the end of each calendar month. These notifications and reports may be reported directly to the Tsawwassen fishing department or by interview to an on-duty member of the Tsawwassen fisheries department catch monitoring crew. The Tsawwassen fisheries department will record catch and effort information on the "TFN Other Fishery Interview Data Form".
- Each Participant will maintain a daily fishing log for groundfish fishing efforts using the "TFN Other Fisheries Log Data Form".

2. Longline Gear:

- Each vessel will be equipped with long lines from one to three miles (1.6-5km) long.
- The number of lines per vessel will not be limited; however, the number of hooks will not exceed 500/vessel.
- Each line will be baited then set and marked with floats, the lines will be checked at regular intervals.
- Prior to the fishery commencing the TFN will provide DFO with a list of TFN members and vessels (maximum 4 vessels) designated to fish under his Harvest Document and the vessels identity number. TFN will immediately inform DFO of any changes to the list.
- All members designated to fish will be informed that only one vessel is able to participate per day with a crew of up to four designated fishers.

Additional Information:



Licence Number: XHD 2 2018

File Number: LFA-18-HD 400/TSAWWASSEN

Valid From: 01-Jan-2018

Expiry Date: 31-Mar-2018

Fishing is permitted in the following area(s):

The waters of the Strait of Georgia bounded by a line commencing at 49°11' 3.1524" N latitude and 123° 12' 26.08868" W longitude then to 49° 7' 48.216" N latitude and 123°19' 50.4228" W longitude then to 49° 5' 15.6948" N latitude and 123° 18' 36.8958" W longitude then to 49° 0' 8.0028" N latitude and 123° 18' 5.1156" W longitude then to 49°0' 7.5564" N latitude and 123° 5' 27.528" W longitude and the waters of Boundary Bay bounded by a line commencing at 49 0' 7.519" N latitude a 123 2' 6.5898 W longitude then to 49 0' 7.5414 N latitude and 122 49' 10.8552" W longitude then to 49 1' 15.2256" N latitude and 122 48' 20.7858" W longitude. Portions of DFO Management Subareas 29-6, 29-7, 29-8, 29-9, 29-10.

Terms and Conditions:

Definitions

"DFO" means the Department of Fisheries and Oceans.

"First Nation" means the Tsawwassen First Nation.

"Fishery" means fishing under the authority of this harvest document.

"Identification Number" in respect of a vessel means:

- in the case of a registered commercial fishing vessel, the vessel registration number, and
- in the case of a vessel that is not a registered commercial fishing vessel, the number of the vessel identification decal issued by Tsawwassen First Nation.

"Longline" means a fishing technique that uses a longline, called the mainline, with baited hooks attached at intervals by means of branch lines called snoods (or gangions). A snood is a short length of line, attached to the main line by a clip or swivel, with the hook at the other end.

"Observer" means an observer designated under section 39 of the Fishery (General) regulations.

"Participant" means an individual carrying on fishing or any related activity, including transporting fish caught, under the authority of this harvest document.

"Rod and Reel - Jigging" means the practice of fishing with a jig, a type of fishing lure. Jigs are intended to create a jerky, vertical motion.

Species and Quantity

The Fishery is limited to the harvest of halibut, sablefish, dogfish, lingcod, flatfish, and rockfish.

All efforts and attempts shall be made to return all non-target species to the water alive and unharmed.

Use of Fish

Fish caught under this licence are for food, social and ceremonial purposes. Without prejudice to future agreements or regulations, sale of fish caught under this licence is **not** permitted.

Catch Monitoring and Harvest Reporting

Rod and Reel:

Participants will notify the Tsawwassen fisheries department before they initiate fishing efforts and will record fishing effort and fish retained and released by species on the TFN monthly calendar. This calendar will be submitted to TFN at the end of each calendar month. These notifications and reports may be reported directly to the Tsawwassen



Licence Number: XHD 2 2018

File Number: LFA-18-HD 400/TSAWWASSEN

Valid From: 01-Jan-2018

Expiry Date: 31-Mar-2018

fishing department or by interview to an on-duty member of the Tsawwassen fisheries department catch monitoring crew. The Tsawwassen fisheries department will record catch and effort information on the "TFN Other Fishery Interview Data Form".

Each Participant will maintain a daily fishing log for groundfish fishing efforts using the "TFN Other Fisheries Log Data Form".

Longline:

All vessels participating in this fishery will have a TFN monitor trained in groundfish identification onboard during all fishing activity. Participants will notify the Tsawwassen Fisheries Department (TFD) before they initiate fishing efforts to ensure an on-board monitor is present. Fishing times and locations will be provided to DFO prior to each fishing period so DFO monitoring or audits of fishing can occur.

The on-board TFN monitor will collect information on hours fished, location fished (PFMA subarea), number and species of groundfish and other species retained and released. The monitor will record this information on the "TFN Groundfish Fishery Interview Data Form".

Within 72 hours of the end of each month, Tsawwassen First Nation will provide to Karen Burnett (DFO Management Biologist : t 604-666-4819; fax 604-666-7112) a summary table showing the number of participants, catch and effort observed by and reported directly to the TFD staff (including patrol logs and daily fishing logs).

Compliance with the Fisheries Act

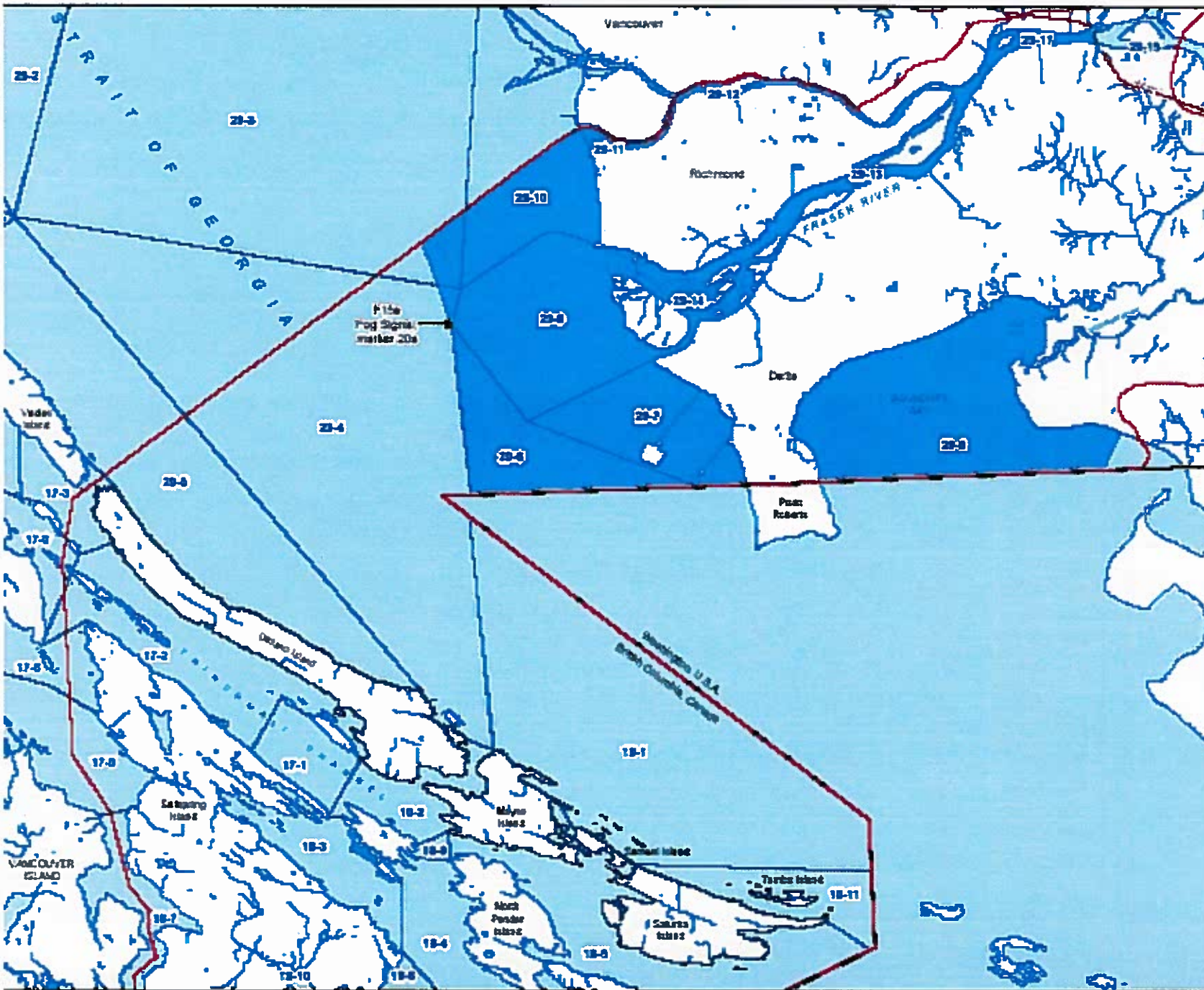
Pursuant to subsection 22(6) of the Fishery (General) Regulations, compliance with the Fisheries Act and the regulations made under the Act is a condition of this licence.

Licence Issued: 27 December 2017

Licence Printed: 27 December 2017

Licence Issued By: BRIAN MATTS, Fisheries and Oceans Canada

Appendix J-1: Tsawwassen Fishing Area and Tsawwassen Intertidal Bivalve Fishing Area

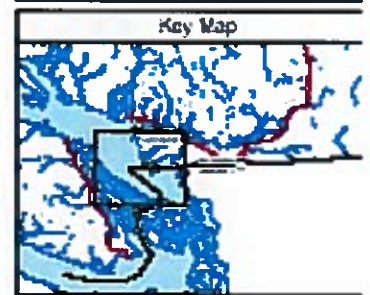


Legend

- Tsawwassen fishing Area
- Tsawwassen Intertidal Bivalve Area
- Tsawwassen Territory
- DFO Sub-area
- Water Body
- Watercourse
- Highway 1

THE OFFICIAL VERSION OF THIS MAP IS HELD BY DFO/CFM AND THE TERRITORIES OF CANADA AND THE PROVINCE OF BRITISH COLUMBIA. THIS MAP IS FOR ILLUSTRATIVE PURPOSES ONLY.

0 5 10
Kilometers



Produced November 22, 2005
 Data map derived from 1:25,000 TFSW data

Tsawwassen First Nation



Aquatic Plant Harvest Document for Tsawwassen First Nation

File No.: 20560-20-HD Tsawwassen
Harvest Document No.: Tsawwassen -03

Issued To: Attention: Hegus, Tsawwassen First Nation
Tsawwassen First Nation
1926 Tsawwassen Drive
Tsawwassen BC V4M 4G2

This Harvest Document is issued under the authority of Section 14 of the *Tsawwassen First Nation Final Agreement Act* and clauses 59 to 64 of Chapter 9 [Fisheries] of the *Tsawwassen First Nation Final Agreement*, for Aquatic Plant species managed by the Province of British Columbia. All terms used in this document have the same meaning as that contained in the *Tsawwassen First Nation Final Agreement* and applicable legislation.

Accordingly, this Harvest Document authorizes Tsawwassen First Nation to exercise their Tsawwassen Fishing Right to harvest Aquatic Plants for Domestic Purposes, in accordance with the following conditions:

Harvest Period: April 1, 2018 to March 31, 2019

Harvest Location: Tsawwassen Fishing Area

Harvestable Aquatic Plant Species:

- Group 1:** Giant kelp (*Macrocystis integrifolia*) / Bull kelp (*Nereocystis luetkeana*)
- Group 2:** Sugar kelp (*Saccharina* spp.) / Ribbon kelp (*Alaria* spp.) / Feather Boa kelp (*Egregia menziesii*) / *Eisenia arborea* / *Costaria costata* / *Agarum* spp. / Sea Cabbage (*Hedophyllum sessile*) / Three Ribbed kelp (*Cymathere triplicatei*) / *Pterygophora californica*
- Group 3:** *Gracilaria* spp. / *Gracilariopsis sjoestedtii* / *Gelidium* spp. / *Gymnogrongus* spp / *Ahnfeltia* spp. / Red Weed (*Agardhiella tenera*) / *Endocladia muricata* / *Gloiopeltis furcata*
- Group 4:** *Iridaea* spp. / Little Turkish Towel (*Gigartina* spp.)
- Group 5:** Rockweed (*Fucus* spp.) / *Sargassum muticum* / Chain Bladder (*Cystoseira geminata*)
- Group 6:** Nori (*Porphyra* spp.) / *Rhodomenia* spp. / Sea Lettuce (*Ulva* spp.) / Gut Weed (*Enteromorpha* spp.) / *Monostroma* spp.
- Group 7:** Eelgrass (*Zostera marina*) / Surfgrass (*Phyllospadix* spp.)
- Group 8:** Sea Asparagus (*Salicornia* spp.)
- Group 9:** Other marine plants not referenced above.

Monitoring & Reporting: As per the Tsawwassen Fisheries Operation Guidelines, and for greater clarity, Tsawwassen First Nation Harvesters are required to identify harvested plants by group in the Tsawwassen First Nation Aquatic Plant Harvest Log. Tsawwassen First Nation will submit the aggregate harvesting values to the Joint Fisheries Committee and CC. FLNRO at the conclusion of the Harvest Period defined in this Harvest document.

These conditions may be amended in accordance with Paragraph 63 and 64 of the Fisheries Chapter of the *Tsawwassen First Nation Final Agreement*.

Issued By:



Lesley Fettes
Section Head, Aquaculture
Minister of Forests, Lands and Natural Resource Operations

Issue Date: March 27, 2018

APPENDIX C
Dataforms

TSAWWASSEN FIRST NATION - SALMON FISHERIES LOG DATA FORM

Fisher Name/No. _____

Vessel Name/No: _____

Sheet ID : _____

| # | Fishing Location | Location Code | Net Length (feet) | Mesh Size (inches) | # of drifts | Data Recorded | | Net Set (Start of Fishing) | | Net Picked (End of Fishing) | | Fishing Effort (Hours) | Fish Kept | | | | | | Fish Released | Hailed in (Y/N) | | | |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------|--------------------|-------------|---------------|------|----------------------------|------|-----------------------------|---------------|------------------------|-----------|------|------|------|------|---------|---------------|-----------------|---------------|---|--|
| | | | | | | Date | Time | Date | Time | Date | Time | | Sock | Chin | Pink | Coho | Chum | Steelhd | Other | | (species & #) | | |
| | Canoe Pass | T3 | 300 | 4.5 | 3 | Apr 4 | 2100 | Apr 4 | 0900 | Apr 4 | 2000 | 1 | | 3 | | | | | | 1 | Sturgeon | Y | |
| 1 | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | | | | | | | |
| Fishing Areas | * T1 = Roberts Bank (29-6,29-7), T2 = Sandheads (29-9, 29-10), T3 = Canoe Pass to Deas (29-14), T4 = Steveston-Pattullo (29-13), T5 = Pattullo-Port Mann (29-17), T6 = North Arm (29-12). | | | | | | | | | | TOTALS | | | | | | | | | | | | |

Comments: _____

TSAWWASSEN FIRST NATION - CRAB FISHING INTERVIEW DATA FORM

Sheet ID: _____

Monitor's Name: _____

Location: _____

Date: _____

| # | TFN FISHER | | FISHING METHOD | STAT. AREA | HAULED | | SOAK TIME | DEPTH | SPECIES | CATCH INFO. | | Number of Traps Pulled | REMARKS OR COMMENTS |
|----|------------|-----|----------------|------------|--------|------|-----------|--------|---------|-------------|-----------------|------------------------|---------------------|
| | NAME | No. | (GL/SL) | (Area-Sub) | Date | Time | Hours | Meters | (DU/RR) | Number Kept | Number Released | | |
| 1 | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | |

Methods: GL = Ground Line, SL= Single Lines

Species: DU= Dungeness, RR=Red Rock, G=Graceful

TSAWWASSEN FIRST NATION - CRAB FISHING LOG DATA FORM

Sheet ID: _____

Fisher Name/No. _____

Vessel Name/No. _____

| # | FISHING METHOD | STAT. AREA | HAULED | | SOAK TIME | DEPTH | SPECIES | CATCH INFO. | | Number of Traps Pulled | REMARKS OR COMMENTS |
|----|----------------|------------|--------|------|-----------|-------|---------|-------------|-----------------|------------------------|------------------------|
| | (GL/SL) | (Area-Sub) | Date | Time | Hours | Feet | (DU/RR) | Number Kept | Number Released | | |
| | SL | 29-6 | Apr 20 | 1800 | 48 | 50 | DU | 8 | 2 | 2 | 2 female crab released |
| 1 | | | | | | | | | | | |
| 2 | | | | | | | | | | | |
| 3 | | | | | | | | | | | |
| 4 | | | | | | | | | | | |
| 5 | | | | | | | | | | | |
| 6 | | | | | | | | | | | |
| 7 | | | | | | | | | | | |
| 8 | | | | | | | | | | | |
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| 10 | | | | | | | | | | | |
| 11 | | | | | | | | | | | |
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| 14 | | | | | | | | | | | |
| 15 | | | | | | | | | | | |
| 16 | | | | | | | | | | | |
| 17 | | | | | | | | | | | |
| 18 | | | | | | | | | | | |
| 19 | | | | | | | | | | | |
| 20 | | | | | | | | | | | |

Methods: GL = Ground Line, SL= Single Lines

Species: DU= Dungeness, RR=Red Rock, G=Graceful

TSAWWASSEN FIRST NATION - OTHER FISHERIES INTERVIEW DATA FORM

Sheet ID: _____

Monitor's Name: _____

Location: _____

Date: _____

| # | TFN FISHER | | SPECIES (Code) | FISHING METHOD (Code) | STAT. AREA (Area-Sub) | LANDING | | FISHING TIME Hours | DEPTH Meters | CATCH INFO. | | Units (Code) | Number of Traps Pulled | REMARKS OR COMMENTS |
|----|------------|-----|-------------------|-----------------------------|-----------------------------|---------|------|--------------------------|-----------------|-------------|-----------------|-----------------|------------------------|---------------------|
| | NAME | No. | | | | Date | Time | | | Number Kept | Number Released | | | |
| 1 | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | |
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| 16 | | | | | | | | | | | | | | |
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| 18 | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | |

Species: RF= Rockfish, LC = Lingcod, HB=Halibut, DF=Dogfish, C=Clams, O= Oysters, P=Prawns, S=Shrimp

Methods: HL= Hook & Line, LL=Long-line, HP= Hand pick, T=Trap

Units: P = Pieces, KG=kilograms, LB=pounds, B=5 gallon bucket

TSAWWASSEN FIRST NATION - OTHER FISHERIES LOG DATA FORM

Sheet ID: _____

Fisher Name/No. _____

Vessel Name/No. _____

| # | SPECIES | FISHING METHOD | STAT. AREA | LANDING | | FISHING TIME | DEPTH | CATCH INFO. | | Units | Number of Traps Pulled | REMARKS OR COMMENTS |
|----|---------|----------------|------------|---------|------|--------------|--------|-------------|-----------------|--------|------------------------|---------------------|
| | (Name) | (Code) | (Area-Sub) | Date | Time | Hours | Meters | Number Kept | Number Released | (Code) | | |
| 1 | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | |
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| 12 | | | | | | | | | | | | |
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| 14 | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | |

Species: RF= Rockfish, LC = Lingcod, HB=Halibut, DF=Dogfish, FS=flounder/sole, C=Clams, O= Oysters, P=Prawns, S=Shrimp
 Methods: RR=Rod & Reel, LL=Long-line, HP= Hand pick, T=Trap
 Units: P = Pieces, KG=kilograms, LB=pounds, B=5 gallon bucket

TSAWWASSEN FIRST NATION AQUATIC PLANT HARVEST LOG

Name of Tsawwassen First Nation Harvester: _____

Harvest Document #: _____

| Date Harvested (yyyy/mm/dd) | DFO Stat Area and Subarea | Specific Area Description | Species Harvested | Quantity Harvested (Kg wet weight) | Initial of Harvester |
|---------------------------------------------------------|------------------------------|---------------------------|-------------------|---------------------------------------|-------------------------|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| Total Weight [Kilograms (Kg)] for this log sheet | | | | | |

I declare this harvest log to be correct and true to the best of my knowledge

Return this form to:
Tsawwassen First Nation
1926 Tsawwassen Drive
Tsawwassen BC V4M 4G2

Signature of Harvester: _____

Date: _____

Print name: _____

APPENDIX D
2018 Fraser River Sockeye In-season Status Report

File: 71007

**DRAFT AGENDA
PACIFIC SALMON COMMISSION
FRASER RIVER PANEL
Friday September 28, 2018 at 11:00 am.
Via Teleconference
1-888-299-2873 Canada
1-888-585-9008 United States
Conference Room 902-802-337**

- 1) Roll Call (Panel and Tech members, others pls email Julie (ehrmantraut@psc.org))
- 2) Agenda.
- 3) Total catches, Escapements and accounted-to-date relative to pre-season forecasts and in-season adopted run sizes and current TAC table PSC Staff
- 4) In-season data flow for updating objectives PSC staff
 - a) Test fishing catches and acoustics
 - b) Stock proportions?
 - c) Alternative Late-run upstream timing and associated DBE prediction PSC staff
- 5) Panel Management Actions Panel
- 6) Other Business
 - a) Upstream report DFO
- 7) Next Meeting, Tuesday January 15, 2019 in Vancouver Panel

2018 Run status of Fraser sockeye salmon

Date: Sep. 28, 2018

| Week of: Sep. 23 - Sep. 29, 2018 | Sockeye | | | | | Total Fraser |
|---------------------------------------------------|------------------|------------------|------------------|------------------|------------------------------------|-------------------|
| | Management Group | | | | | |
| | E.Stuart | E.Summer | Summer | Late | | |
| Mission passage (incls Pitt, Alouette, Coquitlam) | 121,400 | 1,131,700 | 2,104,800 | 1,944,600 | | 5,302,500 |
| Catch downstream of Mission | 1,800 | 651,800 | 2,006,000 | 2,295,200 | | 4,954,800 |
| Accounted Run To Date | 123,200 | 1,783,500 | 4,110,800 | 4,239,800 | | 10,257,300 |
| Run size adopted in-season¹ | 125,000 | 1,800,000 | 4,100,000 | 6,000,000 | | 12,025,000 |
| Run size forecasted pre-season | 84,000 | 2,155,000 | 4,344,000 | 7,398,000 | | 13,981,000 |
| Area 20 timing adopted in-season | 4/Jul | 6/Aug | 10/Aug | 19/Aug | | 15/Aug |
| Area 20 timing expected pre-season | 2/Jul | 8/Aug | 11/Aug | 17/Aug | | 14/Aug |
| Johnstone Str. Diversion Rate | | | | | Annual average to date | 33% |
| | | | | | Preseason forecast of annual rate: | 63% |

1 Run sizes are usually not adopted until after the peak of the run has passed through marine test fishery areas in Juan de Fuca and Johnstone Straits.

2018 Catch-to-date by fishery

Date: Sep. 28, 2018

| Week of: Sep. 23 - Sep. 29, 2018 | | Sockeye | |
|-------------------------------------------------------------|--------------------------------------------------|------------------|------------------|
| | | Total | Fraser |
| Canada | | 4,491,560 | 4,476,250 |
| Commercial | | 3,195,100 | 3,183,600 |
| | B Purse Seine | 1,904,700 | 1,897,000 |
| | D Gillnet | 479,200 | 475,400 |
| | E Gillnet | 601,800 | 601,800 |
| | G Troll | 29,900 | 29,900 |
| | H Troll | 179,500 | 179,400 |
| First Nations | | 1,184,230 | 1,180,590 |
| | Food, Social & Ceremonial (FSC) | 847,610 | 844,140 |
| | Marine | 283,800 | 280,400 |
| | Fraser R. | 563,800 | 563,750 |
| | Lower Fraser (LFA) | 339,120 | 339,070 |
| | BC Interior (BCI) | 224,680 | 224,680 |
| | Economic Opportunity (EO) & Demonstration (Demo) | 336,600 | 336,500 |
| | Marine | 29,800 | 29,700 |
| | Fraser R. | 306,900 | 306,800 |
| | Lower Fraser (LFA) | 241,200 | 241,100 |
| | BC Interior (BCI) | 65,600 | 65,600 |
| Escapement Surplus to Spawning Requirements (ESSR) | | 0 | 0 |
| Recreational | | 109,800 | 109,600 |
| | Marine | 42,600 | 42,400 |
| | Fraser R. * | 67,200 | 67,200 |
| Charter (Albion & A12 Chum test fishery) | | 2,430 | 2,430 |
| United States | | 993,100 | 989,500 |
| Commercial | | 983,800 | 980,200 |
| | Treaty Indian (TI) | 589,400 | 587,000 |
| | Areas 4B, 5, 6C | 54,600 | 54,200 |
| | Areas 6, 7, 7A | 534,900 | 532,900 |
| | All Citizen (AC) | 394,300 | 393,100 |
| | Purse Seine (PS) | 271,100 | 270,100 |
| | Gillnet (GN) | 79,900 | 79,700 |
| | Reefnet (RN) | 43,300 | 43,300 |
| Treaty Indian Ceremonial & Subsistence (C&S) | | 9,300 | 9,300 |
| | Areas 4B, 5, 6C | 200 | 200 |
| | Areas 6, 7, 7A | 9,100 | 9,100 |
| All Citizen Recreational | | 0 | 0 |
| Alaska ** | | na | na |
| Panel-approved Test Fisheries | | 113,050 | 111,950 |
| Panel Waters | | 71,220 | 70,790 |
| | Canada | 67,820 | 67,390 |
| | U.S. | 3,400 | 3,400 |
| Non-Panel Waters | | 41,830 | 41,160 |
| Total | | 5,597,690 | 5,577,660 |
| Catch Seaward of Mission *** | | 4,974,900 | 4,954,870 |
| Catch Upstream of Mission | | 622,790 | 622,790 |

* Recent LFA Recreational catches may be projected based on a scalar applied to Mission Escapement.

** Alaska data are processed post-season and so are unavailable in-season.

*** All catches in marine areas and in the Fraser River downstream of Mission.

2018 Fraser River sockeye salmon: TAC and catch balance

Week of: Sep. 23 - Sep. 29, 2018

Date: Sep. 28, 2018

| | Fraser Sockeye | | | | Total |
|-------------------------------------------------------------|----------------|------------------|------------------|------------------|-------------------|
| | Early Stuart | Early Summer | Summer | Lates | |
| RUN STATUS, ESCAPEMENT NEEDS & AVAILABLE SURPLUS | | | | | |
| Adopted In-season Run Size | 125,000 | 1,800,000 | 4,100,000 | 6,000,000 | 12,025,000 |
| Adult Spawning Escapement Target (SET) | 108,000 | 720,000 | 1,640,000 | 2,400,000 | 4,868,000 |
| %SET from TAM rules | 86% | 40% | 40% | 40% | |
| Management Adjustment (MA) | 74,500 | 165,600 | 164,000 | 600,000 | 1,004,100 |
| Proportional MA (pMA) | 0.69 | 0.23 | 0.10 | 0.25 | |
| Adjusted Spawning Escapement Target (SET) * | 125,000 | 885,600 | 1,804,000 | 3,000,000 | 5,814,600 |
| Test Fishing (TF) | 1,100 | 24,000 | 51,600 | 34,300 | 111,000 |
| Surplus above Adjusted SET & Test fishing | 0 | 890,400 | 2,244,400 | 2,965,700 | 6,100,500 |
| DEDUCTIONS & TAC FOR INTERNATIONAL SHARING | | | | | |
| Aboriginal Fishery Exemption (AFE) | 6,850 | 75,077 | 153,442 | 164,631 | 400,000 |
| Total Deductions (Adj. SET + TF + Available AFE) | 132,950 | 984,677 | 2,009,042 | 3,198,931 | 6,325,600 |
| Available TAC for International Sharing | 0 | 815,323 | 2,090,958 | 2,801,069 | 5,707,350 |
| UNITED STATES (Washington) TAC | | | | | |
| Proportionally Distributed TAC + Payback ** | 0 | 134,200 | 344,100 | 461,000 | 939,300 |
| CANADA TAC | | | | | |
| Canadian TAC + AFE | 6,850 | 756,200 | 1,900,300 | 2,504,700 | 5,168,050 |
| CATCH-TO-DATE | | | | | |
| Test | 1,070 | 24,170 | 51,550 | 35,160 | 111,950 |
| Washington | 600 | 191,200 | 488,200 | 309,400 | 989,500 |
| Canada | 6,840 | 582,700 | 1,776,430 | 2,110,320 | 4,476,200 |
| Total Catch in All Fisheries | 8,510 | 798,070 | 2,316,180 | 2,454,880 | 5,577,660 |
| Exploitation Rate (catch-to-date / run size) | 6.8% | 44.3% | 56.5% | 40.9% | 46.4% |
| Exploit. Rate with fishery-induced mortality included | 6.8% | 44.3% | 56.5% | 40.9% | 46.4% |
| CATCH REMAINING (BALANCE) | | | | | |
| Washington | (600) | (57,000) | (144,100) | 151,600 | (50,200) |
| Canada | 10 | 173,500 | 123,870 | 394,380 | 691,760 |
| Balance Remaining [below share / -above share] | (590) | 116,500 | (20,230) | 545,980 | 641,660 |

* The adjusted SET is the lesser of the run size or the sum of the MA + TAM-defined SET.

** Washington sockeye and pink shares according to Annex IV of the Pacific Salmon Treaty.
 Sockeye: 16.5% of the TAC - payback (maximum of 5% of share).
 Pink: 25.7% of the TAC - payback (maximum of 5% of share)

2018 Fraser River sockeye salmon: TAC and catch balance

Week of: Sep. 23 - Sep. 29, 2018

Date: Sep. 28, 2018

| | Fraser Sockeye | | | | | Total |
|-------------------------------------------------------------|----------------|--------------|-----------|-----------|-----------|------------|
| | Early Stuart | Early Summer | Summer | Lates | | |
| RUN STATUS, ESCAPEMENT NEEDS & AVAILABLE SURPLUS | | | | | | |
| Pre-season or Adopted In-season Run Size | 125,000 | 1,800,000 | 4,100,000 | 5,000,000 | | 11,025,000 |
| Adult Spawning Escapement Target (SET) | 108,000 | 720,000 | 1,640,000 | 2,000,000 | | 4,468,000 |
| %SET from TAM rules | 86% | 40% | 40% | 40% | | |
| Management Adjustment (MA)* | 74,500 | 165,600 | 164,000 | 80,000 | | 484,100 |
| Proportional MA (pMA)* | 0.69 | 0.23 | 0.10 | 0.04 | | |
| Adjusted Spawning Escapement Target (SET) ** | 125,000 | 885,600 | 1,804,000 | 2,080,000 | | 4,894,600 |
| Test Fishing (TF) | 1,100 | 24,000 | 51,600 | 34,300 | | 111,000 |
| Surplus above Adjusted SET & Test fishing | 0 | 890,400 | 2,244,400 | 2,885,700 | | 6,020,500 |
| DEDUCTIONS & TAC FOR INTERNATIONAL SHARING | | | | | | |
| Aboriginal Fishery Exemption (AFE) | 6,850 | 75,077 | 153,442 | 164,631 | | 400,000 |
| Total Deductions (Adj. SET + TF + Available AFE) | 132,950 | 984,677 | 2,009,042 | 2,278,931 | | 5,405,600 |
| Available TAC for International Sharing | 0 | 815,323 | 2,090,958 | 2,721,069 | | 5,627,350 |
| UNITED STATES (Washington) TAC | | | | | | |
| Proportionally Distributed TAC *** | 16.5% | 0 | 134,500 | 345,000 | 449,000 | 928,500 |
| U.S. Payback *** | 0.0% | 0 | -300 | -900 | -1,200 | -2,400 |
| Proportionally Distributed TAC + Payback | | 0 | 134,200 | 344,100 | 447,800 | 926,100 |
| Treaty Indian Share ** | 67.7% | 0 | 90,800 | 232,700 | 302,800 | 626,300 |
| All Citizen Share | 32.3% | 0 | 43,400 | 111,400 | 145,000 | 299,800 |
| CANADA TAC | | | | | | |
| Proportionally Distributed TAC | 83.5% | 0 | 681,123 | 1,746,858 | 2,273,269 | 4,701,250 |
| Aboriginal Fishery Exemption (AFE) | | 6,850 | 75,077 | 153,442 | 164,631 | 400,000 |
| Canadian TAC + AFE | | 6,850 | 756,200 | 1,900,300 | 2,437,900 | 5,101,250 |
| First Nations Catch (including AFE) | | 0 | 0 | 0 | 0 | 0 |
| Planned Charter & Recreational | | 0 | 0 | 0 | 0 | 0 |
| Total Commercial (including FN EO/Demo****) | | 6,850 | 756,200 | 1,900,300 | 2,437,900 | 5,101,250 |
| CATCH-TO-DATE | | | | | | |
| Test | 1,070 | 24,170 | 51,550 | 35,160 | | 111,950 |
| Treaty Indian (Wash.) | 300 | 113,600 | 288,300 | 194,100 | | 596,300 |
| Ceremonial (TI) | | | | | | |
| All Citizen (Wash.) | 300 | 77,600 | 199,900 | 115,300 | | 393,100 |
| Recreational | | | | | | |
| Washington | 600 | 191,200 | 488,200 | 309,400 | | 989,500 |
| First Nations Catch (including AFE) | 6,790 | 199,750 | 420,050 | 217,550 | | 953,760 |
| Planned Charter & Recreational Shares | 50 | 23,550 | 58,980 | 29,470 | | 112,058 |
| Total Commercial (including FN EO/Demo****) | 0 | 359,400 | 1,297,400 | 1,863,300 | | 3,520,100 |
| Canada | 6,840 | 582,700 | 1,776,430 | 2,110,320 | | 4,476,200 |
| Total Catch in All Fisheries | 8,510 | 798,070 | 2,316,180 | 2,454,880 | | 5,577,660 |
| Exploitation Rate (catch-to-date / run size) | 6.8% | 44.3% | 56.5% | 49.1% | | 50.6% |
| Exploit. Rate with fishery-induced mortality included | 6.8% | 44.3% | 56.5% | 49.1% | | 50.6% |
| CATCH REMAINING (BALANCE) | | | | | | |
| Washington | (600) | (57,000) | (144,100) | 138,400 | | (63,400) |
| Canada | 10 | 173,500 | 123,870 | 327,580 | | 624,960 |
| Balance Remaining [below share / -above share] | (590) | 116,500 | (20,230) | 465,980 | | 561,660 |

* Given the 2018 pre-season forecasts of abundances, fisheries decisions that could impact Early Stuart run sockeye management group will be based on Low Abundance Exploitation Rate (LAER) limit of 10%. The intent of LAER is to allow for limited fisheries directed on co-migrating stocks or species, but also may permit limited harvest in some cases. The application of the LAER obviates the need for management adjustments for this group.

** The adjusted SET is the lesser of the run size or the sum of the MA + TAM-defined SET.

*** Washington sockeye and pink shares according to Annex IV of the Pacific Salmon Treaty.
Sockeye: 16.5% of the TAC - payback (maximum of 5% of share).
Pink: 25.7% of the TAC - payback (maximum of 5% of share)

**** EO = FN Economic Opportunity fisheries; Demo = FN Demonstration fisheries.

EStu ESum Summer Lates Total

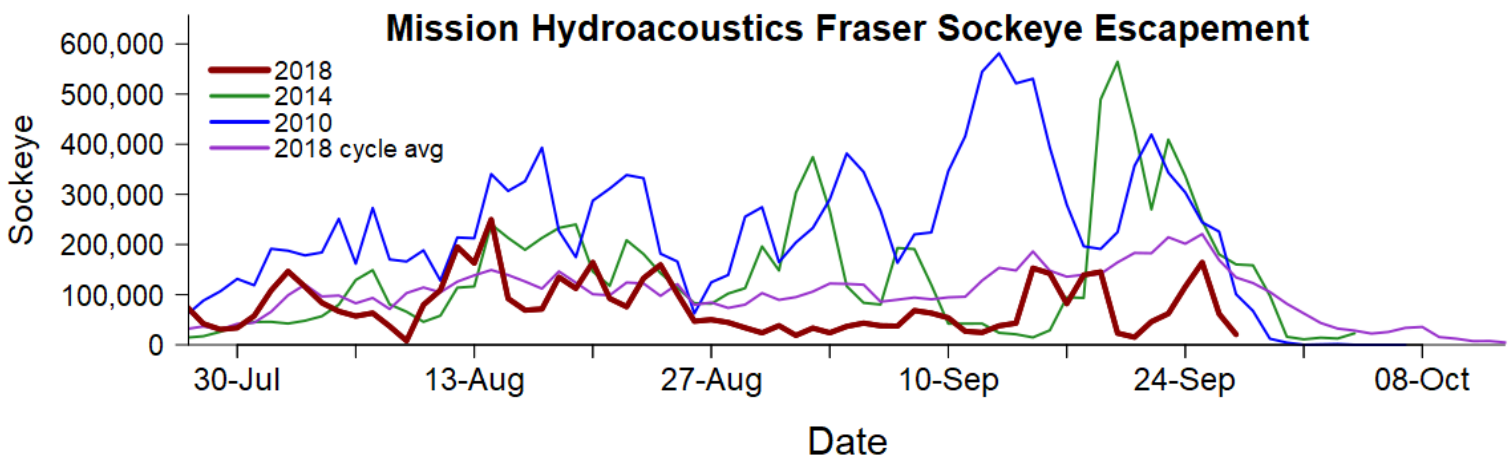
2018 Fraser Sockeye Test Fishing & Escapement Summary

| Area/Gear Location From A20 | Fraser River | | | | | | | | |
|-----------------------------------|-------------------------|-------------------------|-----------------------|-----------------------|------------------------------------|---------------------|-----------------------|----------|-------------------------|
| | A29B TR | A29B GN | A29D GN | Whon CPUE | Mission Hydroacoustics | | Qualark | | Hell's Gate |
| | Gulf Troll (+4 days) | Cottonwood (+5 days) | Whonnock (+6 days) | Estimate (+6 days) | Estimate ¹ (+6 days) | Method ² | GN Catch (+8 days) | Estimate | Estimates (+10 days) |
| 6-Sep | 274 | 74 | 40 | 3.29 | 37,900 | A1+S1+M+A2 | 12 | 18,524 | 6,730 |
| 7-Sep | | 88 | 41 | 3.44 | 37,400 | A1+S1+M+A2 | 14 | 22,528 | No Count |
| 8-Sep | | 59 | 18 | 1.59 | 68,300 | A1+S1+M+A2 | 18 | 30,046 | 4,970 |
| 9-Sep | | 22 | 28 | 2.60 | 63,200 | A1+S1+M+A2 | 36 | 34,922 | 7,440 |
| 10-Sep | | 44 | 44 | 3.30 | 53,800 | A1+S1+M+A2 | 31 | 39,852 | 3,500 |
| 11-Sep | 135 | 168 | 26 | 2.24 | 27,000 | A1+S1+M+A2 | 37 | 51,741 | 10,090 |
| 12-Sep | 409 | 173 | 135 | 10.80 | 24,600 | A1+S1+M+A2 | 31 | 59,068 | 11,020 |
| 13-Sep | 18 | 139 | 107 | 8.56 | 37,800 | A1+S1+M+A2 | 25 | 39,398 | 49,660 |
| 14-Sep | | 265 | 97 | 7.91 | 43,100 | A1+S1+M+A2 | 36 | 34,395 | 35,100 |
| 15-Sep | | 58 | 156 | 12.48 | 152,900 | A1+S1+M+A2 | 35 | 18,050 | 18,020 |
| 16-Sep | | 76 | 66 | 5.04 | 142,200 | A1+S1+M+A2 | 24 | 25,059 | 14,710 |
| 17-Sep | | 45 | 105 | 8.32 | 82,000 | A1+S1+M+A2 | 15 | 35,228 | 9,260 |
| 18-Sep | 144 | 53 | 222 | 17.76 | 139,300 | A1+S1+M+A2 | 53 | 77,318 | 24,920 |
| 19-Sep | 343 | 17 | 73 | 5.90 | 145,200 | A1+S1+M+A2 | 98 | 120,312 | 49,590 |
| 20-Sep | 3 | 19 | 37 | 3.11 | 23,200 | A1+S1+M+A2 | 57 | 139,066 | 88,060 |
| 21-Sep | | 42 | 79 | 5.75 | 15,100 | A1+S1+M+A2 | 67 | 112,215 | 114,320 |
| 22-Sep | | 30 | 157 | 12.56 | 46,100 | A1+S1+M+A2 | 43 | 95,439 | 72,780 |
| 23-Sep | | 116 | 155 | 12.40 | 62,200 | A1+S1+M+A2 | 68 | 53,463 | No Count |
| 24-Sep | | 90 | 122 | 9.76 | 115,800 | A1+S1+M+A2 | 33 | 31,880 | 96,100 |
| 25-Sep | | 42 | 52 | 3.79 | 164,200 | A1+S1+M+A2 | 10 | 28,555 | 97,330 |
| 26-Sep | 138 (Q-6) | 60 | 88 | 5.92 | 61,600 | A1+S1+M+A2 | 25 | 64,722 | 88,090 |
| 27-Sep | 50 (Q-5) | END | 20 | 1.75 | 20,700 | A1+S1+M+A2 | | | 44,426 |
| 28-Sep | | | | | | | | | |

¹ Upstream escapement estimate - does not include Pitt

² Mission Source:

A1+S1+M+A2 = Left bank ARIS (A1) + Left bank split-beam (S1) + Mobile split-beam (M) + Right bank ARIS (A2)



Late-run (excluding Birkenhead) Upstream timing and Predicted %DBE

| Run size | Seaward Catch to date (prior to Sept 21) | Total Seaward abundance (Run size - seaward catch) | Upstream migration date | Upstream migration to date | % Upstream to date | Predicted %DBE |
|------------------|------------------------------------------|----------------------------------------------------|-------------------------|----------------------------|--------------------|----------------|
| 4,500,000 | 2,122,900 | 2,377,100 | 17-Sep | 1,174,600 | 49% | -20% |
| 4,500,000 | 2,122,900 | 2,377,100 | 18-Sep | 1,307,000 | 55% | -14% |
| 4,500,000 | 2,122,900 | 2,377,100 | 19-Sep | 1,452,100 | 61% | -8% |
| 4,500,000 | 2,122,900 | 2,377,100 | 20-Sep | 1,475,300 | 62% | -1% |
| 5,000,000 | 2,122,900 | 2,877,100 | 18-Sep | 1,307,000 | 45% | -14% |
| 5,000,000 | 2,122,900 | 2,877,100 | 19-Sep | 1,452,100 | 50.5% | -8% |
| 5,000,000 | 2,122,900 | 2,877,100 | 20-Sep | 1,475,300 | 51% | -1% |
| 5,500,000 | 2,122,900 | 3,377,100 | 18-Sep | 1,307,000 | 39% | -14% |
| 5,500,000 | 2,122,900 | 3,377,100 | 19-Sep | 1,452,100 | 43% | -8% |
| 5,500,000 | 2,122,900 | 3,377,100 | 20-Sep | 1,475,300 | 44% | -1% |
| 5,500,000 | 2,122,900 | 3,377,100 | 21-Sep | 1,490,400 | 44% | 0% |
| 5,500,000 | 2,279,900 | 1 3,220,100 | 22-Sep | 1,536,400 | 48% | 0% |
| 5,500,000 | 2,279,900 | 1 3,220,100 | 23-Sep | 1,599,000 | 49.7% | 0% |
| 5,500,000 | 2,279,900 | 1 3,220,100 | 24-Sep | 1,691,400 | 52.5% | 0% |
| 5,500,000 | 2,279,900 | 1 3,220,100 | 25-Sep | 1,836,000 | 57.0% | 0% |
| 5,500,000 | 2,279,900 | 1 3,220,100 | 26-Sep | 1,890,400 | 58.7% | 0% |
| 5,500,000 | 2,279,900 | 1 3,220,100 | 27-Sep | 1,890,400 | 58.7% | |

2018 Late-run run size estimates depending on different delay estimate

Survey 1: August 21, 22, 23

Reconstructed to date: 3,809,000

| Late-run run-size (Catch + escapement + delay + 6 day projection) Late Shuswap, Portage, Weaver, Cultus, Birkenhead, Big Silver | Catch + Escape. | Delay | | 6-day Projection | Run size estimate | | | |
|------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------|-----------|---------------------|-------------------|-----------|-----------|-----------|
| | | median | 80% PI | | median | 80% PI | | |
| 1. Reconstructed-to-date (CPUE * in-season expansion lines) | 1,642,000 | 1,430,000 | 872,000 | 2,059,000 | 737,000 | 3,809,000 | 3,251,000 | 4,438,000 |
| 2. Delay = Gulf Troll estimate based on August data, including all years | 1,642,000 | 2,195,000 | 1,096,000 | 4,376,000 | 737,000 | 4,574,000 | 3,475,000 | 6,755,000 |
| 3. Delay = Gulf Troll estimate based on Aug/Sept data, dom/subdom years | 1,642,000 | 3,088,000 | 1,643,000 | 5,786,000 | 737,000 | 5,467,000 | 4,022,000 | 8,165,000 |
| 4. Delay = Gulf Troll estimate based on August data, dom years | 1,642,000 | 2,117,000 | 968,000 | 4,683,000 | 737,000 | 4,496,000 | 3,347,000 | 7,062,000 |

Survey 2: August 28, 29, 30

Reconstructed to date: 3,852,000

| Late-run run-size (Catch + escapement + delay + 6 day projection) Late Shuswap, Portage, Weaver, Cultus, Birkenhead, Big Silver | Catch + Escape. | Delay | | 6-day Projection | Run size estimate | | | |
|------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------|-----------|---------------------|-------------------|-----------|-----------|-----------|
| | | median | 80% PI | | median | 80% PI | | |
| 1. Reconstructed-to-date (CPUE * in-season expansion lines) | 1,928,000 | 1,870,000 | 1,141,000 | 2,693,000 | 54,000 | 3,852,000 | 3,123,000 | 4,675,000 |
| 2. Delay = Gulf Troll estimate based on August data, including all years | 1,928,000 | 1,632,000 | 830,000 | 3,212,000 | 54,000 | 3,614,000 | 2,812,000 | 5,194,000 |
| 3. Delay = Gulf Troll estimate based on Aug/Sept data, dom/subdom years | 1,928,000 | 2,254,000 | 1,211,000 | 4,183,000 | 54,000 | 4,236,000 | 3,193,000 | 6,165,000 |
| 4. Delay = Gulf Troll estimate based on August data, dom years | 1,928,000 | 1,750,000 | 822,000 | 3,757,000 | 54,000 | 3,732,000 | 2,804,000 | 5,739,000 |

Survey 3: September 4,5,6

Reconstructed to date: 4,131,000

| Late-run run-size (Catch + escapement + delay + 6 day projection) Late Shuswap, Portage, Weaver, Cultus, Birkenhead, Big Silver | Catch + Escape. | Delay | | 6-day Projection | Run size estimate | | | |
|------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------|-----------|---------------------|-------------------|-----------|-----------|------------|
| | | median | 80% PI | | median | 80% PI | | |
| 1. Reconstructed-to-date (CPUE * in-season expansion lines) | 2,145,000 | 1,826,000 | 1,114,000 | 2,620,000 | 160,000 | 4,131,000 | 3,419,000 | 4,925,000 |
| 2. Delay = Gulf Troll estimate based on September data, including all years | 2,145,000 | 5,046,000 | 2,886,000 | 8,782,000 | 160,000 | 7,351,000 | 5,191,000 | 11,087,000 |
| 3. Delay = Gulf Troll estimate based on Aug/Sept data, dom/subdom years | 2,145,000 | 3,505,000 | 1,857,000 | 6,606,000 | 160,000 | 5,810,000 | 4,162,000 | 8,911,000 |
| 4. Delay = Gulf Troll estimate based on September data, dom years | 2,145,000 | 5,821,000 | 3,233,000 | 10,520,000 | 160,000 | 8,126,000 | 5,538,000 | 12,825,000 |

Survey 4: September 11, 12, 13

Reconstructed to date: 4,204,000

| Late-run run-size (Catch + escapement + delay + 6 day projection) Late Shuswap, Portage, Weaver, Cultus, Birkenhead, Big Silver | Catch + Escape. | Delay | | 6-day Projection | Run size estimate | | | |
|------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------|-----------|---------------------|-------------------|-----------|-----------|-----------|
| | | median | 80% PI | | median | 80% PI | | |
| 1. Reconstructed-to-date (CPUE * in-season expansion lines) | 2,808,000 | 1,350,000 | 824,000 | 1,944,000 | 46,000 | 4,204,000 | 3,678,000 | 4,798,000 |
| 2. Delay = Gulf Troll estimate based on September data, including all years | 2,808,000 | 1,504,000 | 885,000 | 2,562,000 | 46,000 | 4,358,000 | 3,739,000 | 5,416,000 |
| 3. Delay = Gulf Troll estimate based on Aug/Sept data, dom/subdom years | 2,808,000 | 1,251,000 | 677,000 | 2,301,000 | 46,000 | 4,105,000 | 3,531,000 | 5,155,000 |
| 4. Delay = Gulf Troll estimate based on September data, dom years | 2,808,000 | 1,889,000 | 1,094,000 | 3,259,000 | 46,000 | 4,743,000 | 3,948,000 | 6,113,000 |

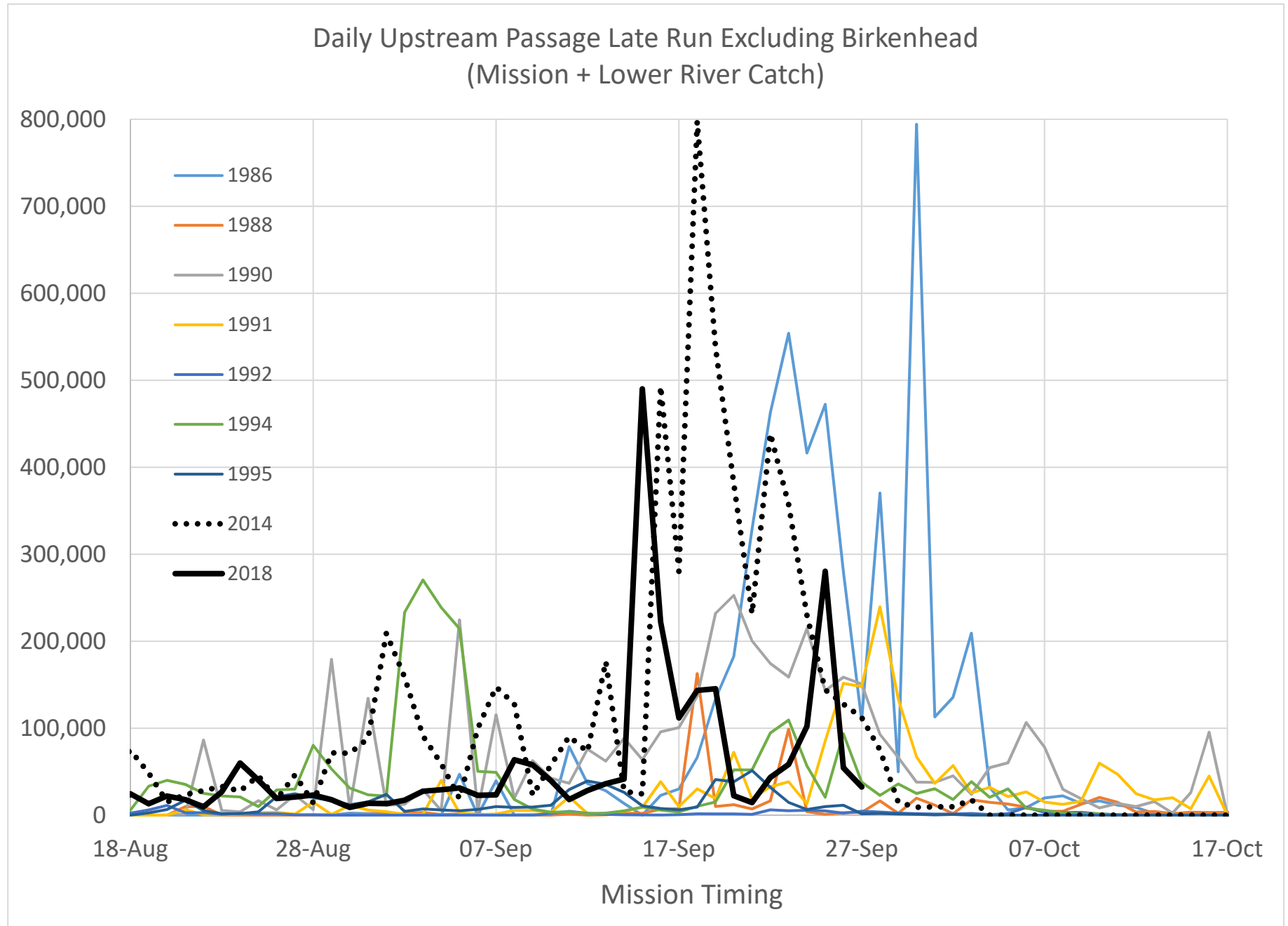
Survey 5: September 18, 19, 20

Reconstructed to date: 4,204,000

| Late-run run-size (Catch + escapement + delay + 6 day projection) Late Shuswap, Portage, Weaver, Cultus, Birkenhead, Big Silver | Catch + Escape. | Delay | | 6-day Projection | Run size estimate | | | |
|------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------|---------|---------------------|-------------------|-----------|-----------|-----------|
| | | median | 80% PI | | median | 80% PI | | |
| 1. Reconstructed-to-date (CPUE * in-season expansion lines) | 3,623,000 | 573,000 | 350,000 | 825,000 | 8,000 | 4,204,000 | 3,981,000 | 4,456,000 |
| 2. Delay = Gulf Troll estimate based on September data, including all years | 3,623,000 | 1,075,000 | 633,000 | 1,834,000 | 8,000 | 4,706,000 | 4,264,000 | 5,465,000 |
| 3. Delay = Gulf Troll estimate based on Aug/Sept data, dom/subdom years | 3,623,000 | 944,000 | 512,000 | 1,742,000 | 8,000 | 4,575,000 | 4,143,000 | 5,373,000 |
| 4. Delay = Gulf Troll estimate based on September data, dom years | 3,623,000 | 1,399,000 | 804,000 | 2,422,000 | 8,000 | 5,030,000 | 4,435,000 | 6,053,000 |

Average estimates

| Late-run run-size (Catch + escapement + delay + 6 day projection) Late Shuswap, Portage, Weaver, Cultus, Birkenhead, Big Silver | Run size estimate | | |
|------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------|-----------|
| | Average | 80% PI | |
| 2. Delay = Gulf Troll estimate based on month specific data, including all years | 4,921,000 | 3,896,000 | 6,783,000 |
| 3. Delay = Gulf Troll estimate based on Aug/Sept data, dom/subdom years | 4,839,000 | 3,810,000 | 6,754,000 |
| 4. Delay = Gulf Troll estimate based on month specific data, dom years | 5,225,000 | 4,014,000 | 7,558,000 |



APPENDIX E
Correspondence



Discussion Paper: February 15, 2018

Proposed 2018 Salmon Fishery Management Measures to Support Chinook Salmon Prey Availability for Southern Resident Killer Whales

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1. Purpose

The purpose of this discussion paper, is to identify potential salmon fishery management measures aimed at mitigating the threat of reduced chinook prey availability for Southern Resident Killer Whales (SRKW; *Orcinus orca*) in 2018.

Chinook availability in the context of this paper refers to the combination of both the abundance (i.e. amount) of Chinook in local areas and their accessibility to SRKW. Accessibility, relates to the ease of obtaining prey and can be affected by physical or acoustic disturbance that impacts SRKW foraging success. Proposed fishery management measures for 2018 are outlined in Section 3.

As noted in the January 9, 2018 Integrated Fisheries Management Plan (IFMP) letter, this work will be informed by discussions with First Nations and stakeholders in considering possible fishery management measures that are consistent with science advice, DFO policy guidance and other considerations. The views received during consultations will ultimately inform decisions on fishery management measures to be included in the Northern and/or Southern BC IFMPs for the 2018 fishing season, and will be considered along with other actions that are underway in the development of long-term management measures to support recovery of Southern Resident Killer Whales (SRKW).

The Department intends to implement measures on a trial basis in 2018 with additional monitoring (see Section 4) designed to assess the effectiveness of management measures with post-season review and future adjustments as required.

The management measures proposed here are focused on improving Chinook Salmon prey availability for SRKW. As a result, the focus of this discussion paper is on salmon fisheries contained in the Salmon Integrated Fisheries Management Plans (IFMP). However, the effectiveness of the proposed salmon fishery measures will also depend on broad efforts designed to reduce the physical and acoustic disturbance in key foraging areas to the extent possible. The Department is working to coordinate these measures with other government agencies and user groups.

1.0 Background

1.1 Status of Resident Killer Whales

Two distinct populations of Resident Killer Whales (RKW), the Northern Resident Killer Whales (NRKW) and the Southern Resident Killer Whales (SRKW), occupy the waters off the west coast of British Columbia. Both RKW populations are presently considered to be at risk because of their small population size, low reproductive rate, narrow prey selection, and the existence of a variety of anthropogenic threats that have the potential to prevent their recovery or to cause further declines. The SRKW population was listed as Endangered under the *Species at Risk Act* (SARA) and the NRKW population was listed as Threatened. While the NRKW population is showing a positive population trend the SRKW population is in decline. The SRKW population has experienced a decline of 3% per year between 1995 and 2001, and since then has shown little recovery, with 76 individuals currently in the wild. Due to this small population size and low



birth rate, threats affecting only a few individuals have the potential to impact their recovery¹. Even under the most optimistic scenario (human activities do not increase mortality or decrease reproduction), the species' low intrinsic growth rate means that the time frame for recovery will be more than one generation (25 years). The higher risk status, population decline, and more southern distribution in waters heavily used by humans has placed management focus on SRKW; however, it is acknowledged that measures undertaken to benefit SRKW may also benefit NRKW.

1.2 SRKW Prey Requirements

During the summer and fall, SRKW are primarily found in the transboundary waters of Haro Strait, Boundary Pass, Juan de Fuca Strait, and southern portions of the Strait of Georgia (also referred to as the Salish Sea). This area is identified as Critical Habitat (the habitat required for survival and recovery of the species) in the SARA RKW Recovery Strategy, and is protected via a Ministerial Order issued in 2009. Identification of Critical Habitat is informed by the best available science, and based on consistent and prolonged seasonal occupancy and use of the area by SRKW. Additional habitat of special importance for SRKW off southwestern Vancouver Island was identified by DFO Science in 2017, and is an extension of the existing identified Critical Habitat for SRKW. Work is underway to amend the Recovery Strategy to include this area as Critical Habitat, and subsequently protect it. Consultations will be undertaken for both the amendment and the Ministerial Order to protect this proposed Critical Habitat.

SRKWs are highly specialized predators and forage primarily on Chinook Salmon and secondarily on Chum Salmon. The survival and recovery of SRKW appears to be strongly linked to Chinook Salmon abundance. In particular, a sharp decline in coast-wide Chinook Salmon abundance that persisted for four years during the late 1990s was associated with mortality rates up to 2-3 times greater than expected (Ford et al. 2010). Lack of prey availability is one of the key threats to the recovery of the population.

The distribution and range of the SRKW population overlays the coastal distribution of Chinook spawning runs from southern California through to the Salish Sea. The seasonal distribution and movement patterns of SRKWs are strongly associated with the availability of their preferred prey, Chinook Salmon. This selectivity is particularly evident during the months of May through September in the southern Salish Sea where observations indicate SRKW spend time foraging within Critical Habitat as well as within identified proposed Critical Habitat (see Figure 1). Genetic analysis of prey fragments from SRKW foraging events shows that from May to September, the diet is comprised of about 90% Chinook Salmon, despite this species being far less abundant than Sockeye and Pink Salmon. Age determination of the prey indicates that the majority of Chinook are from the 4 and 5 year age class. In early fall, Coho Salmon appear in the diet and increase in prevalence, and for the fall/early winter period, the primary species in the diet shifts to Chum salmon. By December, most of the SRKW population have left the Critical Habitat areas in the Salish Sea. While less is known about the winter distribution of SRKW and their winter and spring diet, Chinook are identified as the primary dietary species, although a greater diversity of prey is observed in winter sampling, and some non-salmonids appear in both the prey fragment collections and the fecal data set.

¹ Recovery is defined as achieving and maintaining demographic conditions that preserve their reproductive potential, genetic variation, and cultural continuity.

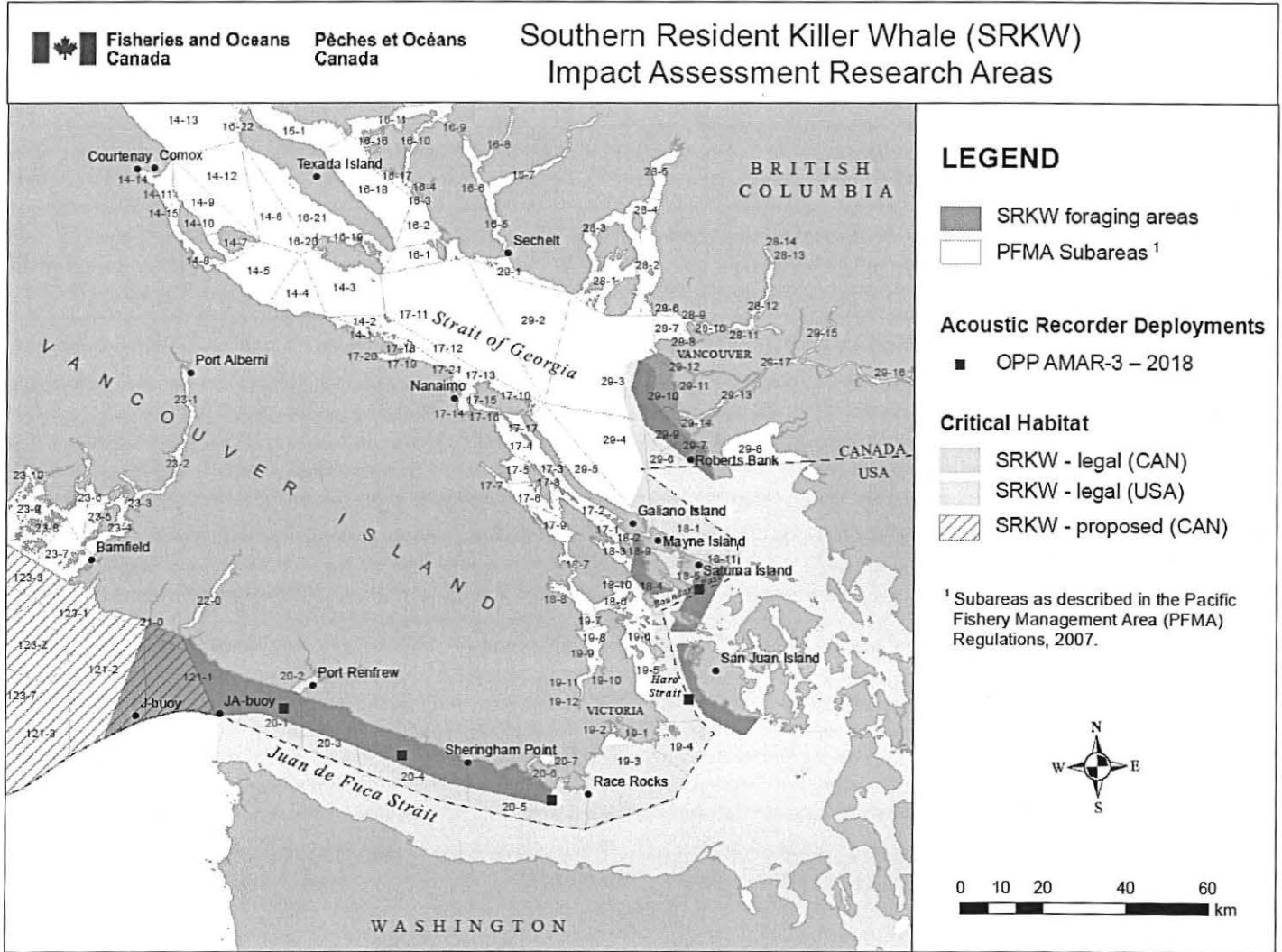


Figure 1: Southern Resident Killer Whale habitat and areas with frequent observations of foraging behaviour. (Source: S. Thornton Pers. Comm.)

1.3 Chinook Salmon Status and Trends

Southern B.C. Chinook Salmon spawner abundances have decreased or are currently decreasing for many of the Conservation Units (CUs). Fraser and Thompson River stocks with stream-type juvenile life-history (i.e. juveniles that overwinter in rivers and go to sea as yearlings) represent the majority of those cases with decreasing spawner abundance and poor status. The integrated biological status of Southern BC Chinook CUs has been assessed by CSAS. The Science Advisory Report is available at:

http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2016/2016_042-eng.html

Riddell *et al.* (2013) provided a coast-wide analysis of marine survival rates and S-R analysis for a range of Chinook populations from Oregon, Washington, BC and Alaska. Four of the five Chinook Salmon model stock groupings found in southern BC (Fraser River Late, Lower and Upper Strait of Georgia, and West Coast of Vancouver Island) indicate marine survival rates have decreased substantially from their highs in



the 1970s or 1980s to lows in the 1990s and 2000s. Overall, southern BC Chinook Salmon stocks exhibit temporal patterns in spawner abundance, life-cycle productivity, and to a lesser extent age-2 cohort survival rates, that are shared (to varying degrees) across a large spatial area from Oregon north through to western Alaska. Therefore, while it seems likely that there are large-scale processes influencing Chinook Salmon productivity, no single predominant factor can be readily identified at this time to fully account for the recent patterns and trends observed for southern BC Chinook Salmon.

The Department is working with First Nations and stakeholders to develop an integrated Strategic Plan for Southern BC Chinook Salmon to restore and maintain the abundance, distribution and diversity of southern BC Chinook salmon for all that rely on them. The draft report may be obtained from:

http://frafs.ca/sites/default/files2/SBC%20Chinook%20Strat%20Plan%20DRAFT%20for%20dist%20Sept%2021_v2%20%28updated%20List%29.pdf

Genetic sampling of Chinook from the recreational fishery catch in the Strait of Juan de Fuca (Figure 2) illustrate that SRKW seasonal distribution in the southern Salish Sea is overlapped with the timing of Fraser and Puget Sound Chinook through this area. During the May to September period, the proportion of US origin Chinook Salmon declines and proportions of Fraser-origin Chinook Salmon increases as these populations pass through the area on their return migrations to the Fraser River. These Chinook Salmon are an important contribution to SRKW foraging in this area in the May to September period.

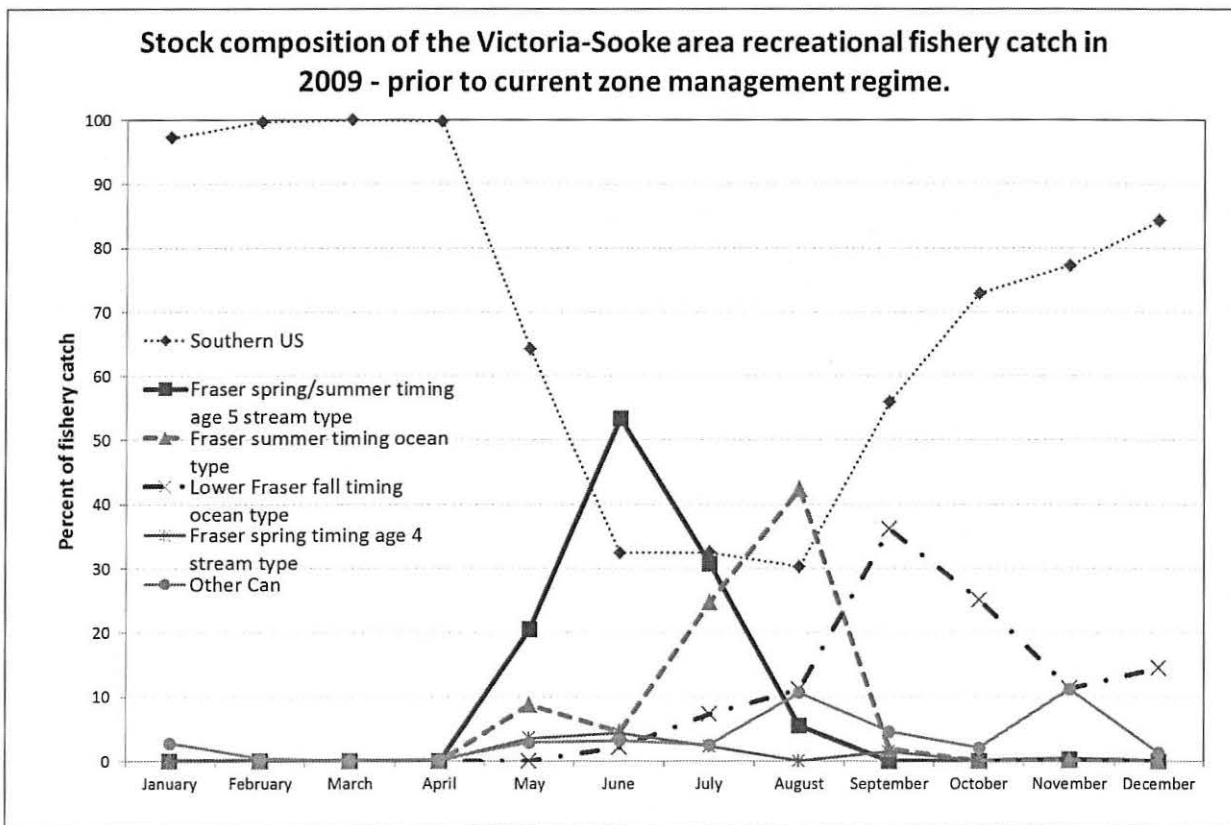


Figure 2: Stock composition from DNA of the recreational fishery catch in the Victoria to Sooke area of Juan de Fuca, in 2009. The figure shows the relative abundance of various Fraser River Chinook run timing groups as they migrate through the area.



1.4 Current Fisheries Management Measures

A range of fisheries management measures have been implemented over the past decade to substantially reduce harvest pressure on Chinook Salmon stocks. As an example, the renegotiated Pacific Salmon Treaty terms were put into effect January 1, 2009, and included the implementation of a 30% reduction in the Total Allowable Catch (TAC) for the West Coast Vancouver Island Aggregate Abundance Based Management (AABM) fisheries, with a 15% reduction in the Southeast Alaska AAMB fishery. Additional measures have also been implemented annually in Canada to reduce harvest pressure on important Chinook Salmon populations with specific measures identified in the Salmon IFMPs.

In particular, a range of management measures have been implemented to address conservation objectives for Fraser River origin chinook may also benefit SRKW diets in the Strait of Juan de Fuca. Conservation measures for these populations over the last 10 years have included substantially reduced exploitation rates on Fraser Spring (age-4) and Spring/Summer (age-5) chinook designed to allow more wild Chinook to reach spawning areas. While these measures have decreased exploitation rates to well below historic sustainable levels, there has not been rapid recovery for many Chinook Salmon populations, suggesting that other factors are also contributing to on-going low productivity. These populations exhibit an offshore migration pattern and appear to return to Fraser primarily through the Strait of Juan de Fuca in spring and early summer months.

Fraser Summer (age-4 ocean type) have been at high relative abundance for over a decade and have a far north distribution with return migration to the Fraser in August through Johnstone Strait and Strait of Juan de Fuca. Lower Fraser Fall (Harrison/Chilliwack) Chinook are locally distributed in southern BC waters and are present year round. Harrison Chinook have declined in recent years and have not achieved the PST escapement goal in 5 of the last 6 years. Further measures are under consideration in 2018 to improve terminal returns of Harrison Chinook.

For 2018 fisheries, the Department is planning to continue to implement management measures for First Nations, recreational and commercial fisheries to protect and rebuild these populations. In addition, further fishery restrictions may be considered to address conservation concerns for Chinook Salmon. Actions will likely be informed by forecast or inseason returns, additional measures to achieve escapement objectives and/or the results of the Fraser River Chinook 5 year technical review which are expected in Spring 2018. Consideration of any additional fishery management actions to support Chinook Salmon conservation will be coordinated where possible to support increased availability of larger, wild chinook in SRKW foraging areas. However, the potential to increase low Chinook Salmon abundance in SRKW foraging areas may be limited given existing fishery actions, low exploitation rates in fisheries seaward of SRKW foraging areas and current low returns expected for many Fraser chinook populations.

2. Proposed 2018 Management Measures

For the 2018 salmon fishing season, the Department is focusing attention on ways to support increased Chinook Salmon prey availability in key foraging areas within the SRKW Critical Habitat (identified and proposed). **The primary objective of the proposed measures is to improve Chinook Salmon availability for SRKW by decreasing potential fishery competition, as well as, minimizing physical and acoustic disturbance in key foraging areas to the extent possible.**



The proposed management measures are focused on four key foraging areas within the Canadian portion of the SRKW Critical Habitat (identified and proposed) including:

1. **Mouth of the Fraser River (Area 29)**
2. **West side of Pender Island (Subarea 18-4)**
3. **South side of Saturna Island (Subarea 18-5)**
4. **Strait of Juan de Fuca (Area 20)**

Management measures are proposed to increase Chinook Salmon prey availability in these areas by implementing salmon fishing or fin fish closures to reduce competition for Chinook Salmon present in these areas, as well as reducing the disruption of SRKW foraging activities that is associated with the physical presence of vessels (physical disturbance) and acoustic disturbance. The measures are proposed for May to September of 2018, to correspond with timing of previous SRKW foraging observations from the area.

3. Rationale for Proposed Management Measures

In 2011 and 2012, DFO collaborated with the National Oceanic and Atmospheric Administration (NOAA) in a series of three scientific workshops that rigorously reviewed the available information on SRKW, their feeding habits, and the potential effects of salmon fisheries on SRKW through reductions in prey abundance. A panel of independent scientists was selected to oversee and participate in the process and produce a report documenting its findings ([Hilborn et al. 2012](#)). The report noted that reductions in coast-wide Chinook harvest may not necessarily translate into a greater Chinook Salmon availability for SRKWs due to a range of factors.

Since this time, the SARA RKW Action Plan has been developed and released, a Whale Science Review has been completed along with the Whale Symposium. A follow-up joint DFO-NOAA Prey Availability technical workshop was held in November 2017 at the University of British Columbia (UBC) and a summary of the proceedings will be available February 16th at <http://www.marinemammal.org/marine-mammal-research-unit-publications-2/>. This workshop was attended by RKW and Salmon research scientists, and salmon fishery managers from Canada and the US. The focus of the UBC workshop was to identify short-term management actions that might be taken to increase the immediate abundance and accessibility of Chinook Salmon for SRKW, given the current size of Chinook stocks. At the workshop there was broad recognition that targeted, area-based fishery management measures designed to improve Chinook Salmon availability for SRKW in key foraging areas should be a high priority. These measures could assist SRKW by decreasing potential fishery competition for Chinook Salmon, as well as, minimizing physical and acoustic disturbance in key foraging areas.

A subsequent joint (DFO-NOAA) science-based workshop is planned for 2018, which will bring together the best available science to inform fisheries management options related to overall prey abundance. Scientific advice from both these workshops will be peer-reviewed through the Canadian Science Advisory Secretariat process. The output from this process will help identify and prioritize fisheries management measures and inform the development of future integrated fisheries management plans.



4. Proposed Management Measures and Areas

1. Strait of Juan De Fuca

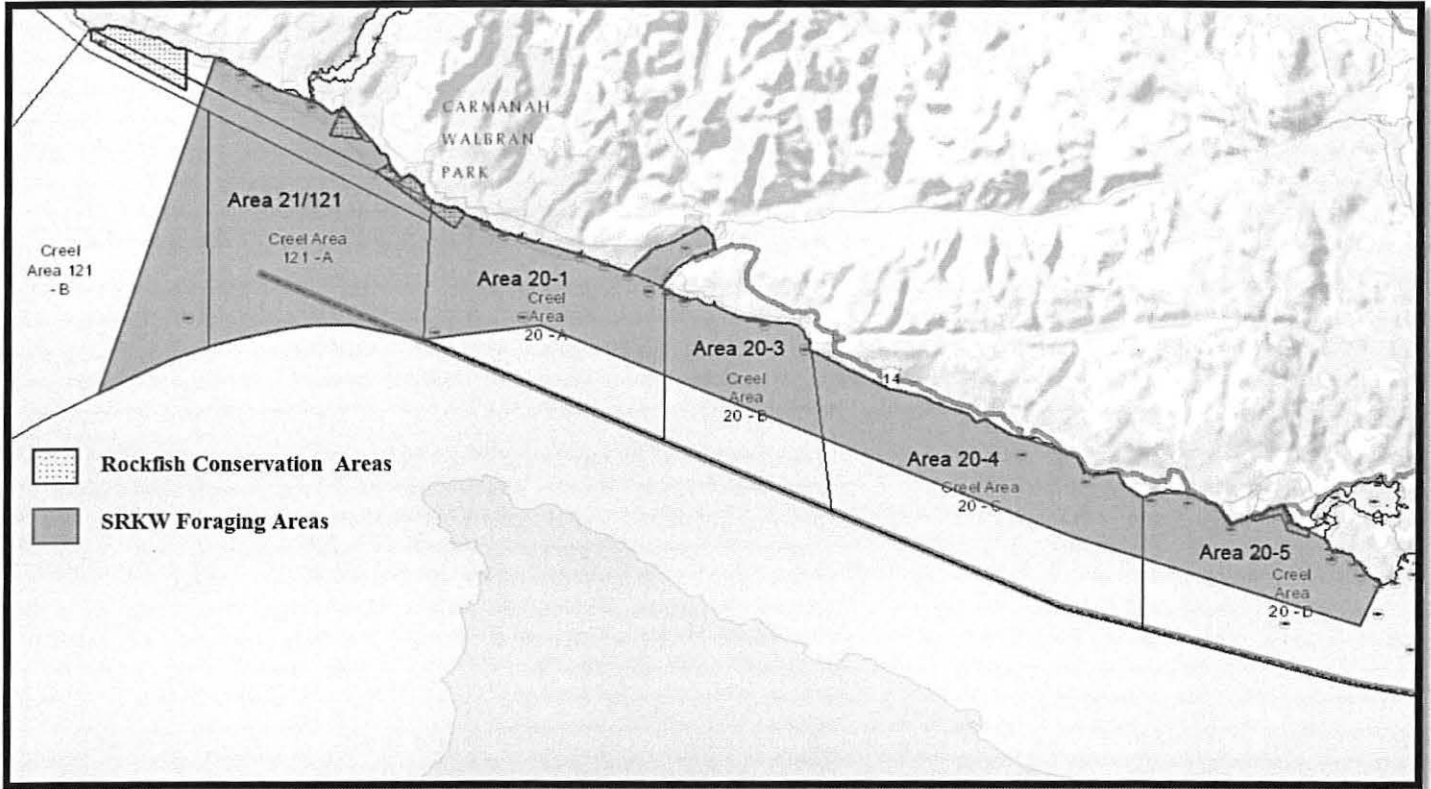


Figure 2: Juan De Fuca Map showing SRKW Foraging areas and Rockfish Conservation Areas (RCAs).

Proposed Management Measures: For this area, an experimental approach is proposed with salmon fishing or fin fish closures proposed for Subareas 20-3 and 20-4 from May 1 to September 30. Monitoring is planned to compare SRKW foraging behaviour in these areas with the adjacent Subareas 20-1 and 20-5, which will remain open to fin fish.

Questions to Consider:

- *What is your perspective on the on the proposed management measures?*
- *How might the proposed measures impact on your fishery?*
- *What could be considered to improve the measures or mitigate impacts on your fishery?*



2. Pender Island

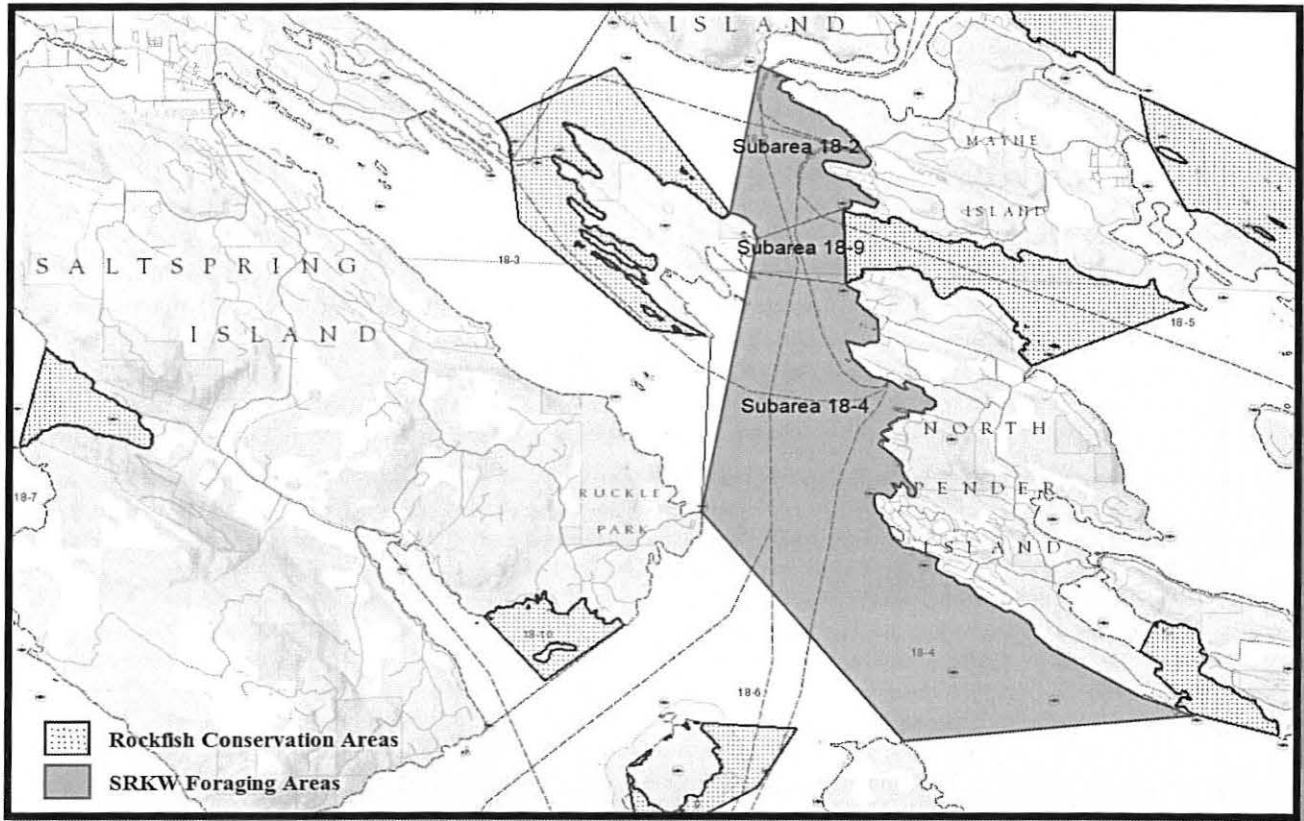


Figure 3: Pender Island Map showing SRKW Foraging areas and RCA's.

Proposed Management Measures: Proposed salmon fishing or fin fish closure in Subareas 18-2, 18-4 and 18-9 from May 1 to September 30.

Questions to Consider:

- *What is your perspective on the on the proposed management measures?*
- *How might the proposed measures impact on your fishery?*
- *What could be considered to improve the measures or mitigate impacts on your fishery?*



3. Saturna Island

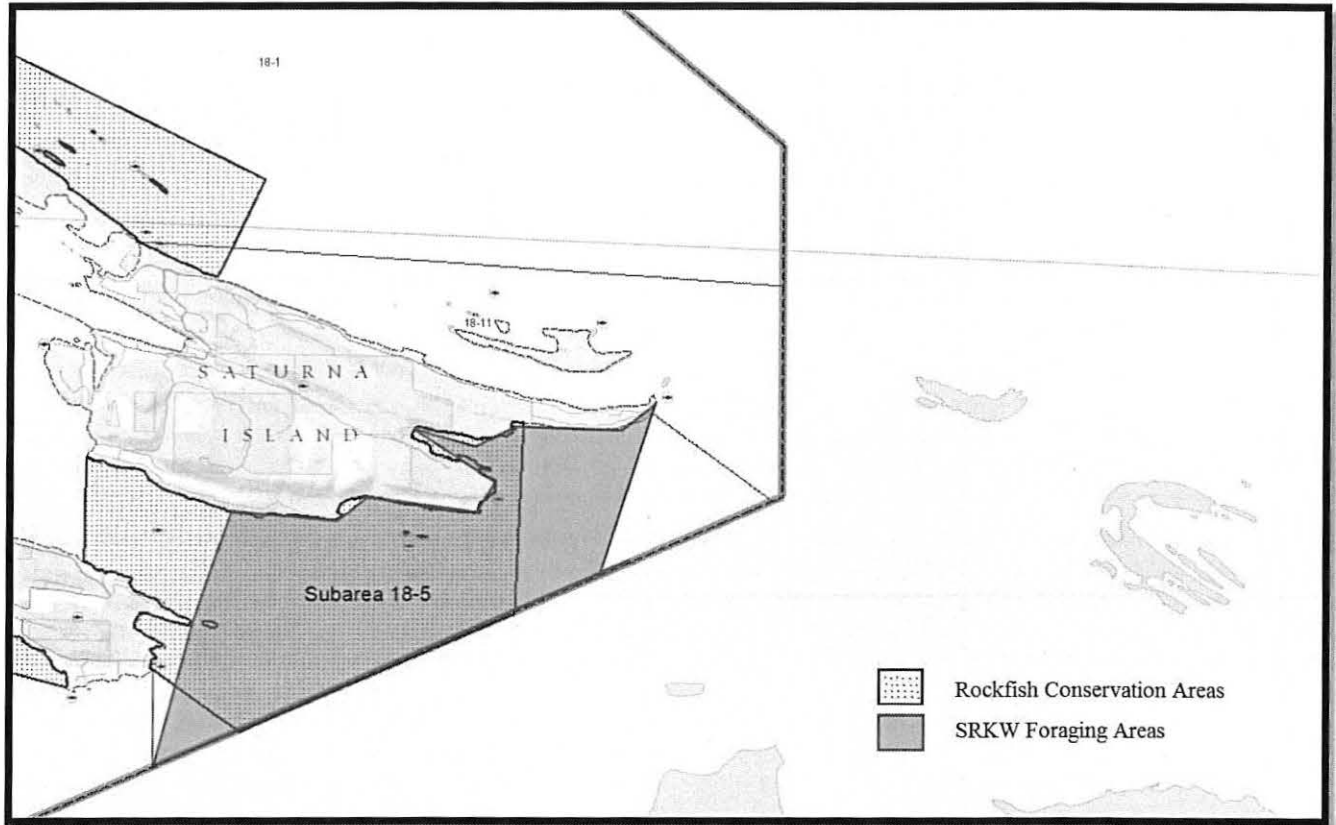


Figure 4: Saturna Island Map showing SRKW Foraging areas and RCA's.

Proposed Management Measures: Proposed salmon fishing or fin fish closure in Subarea 18-5 from May 1 to September 30.

Questions to Consider:

- *What is your perspective on the on the proposed management measures?*
- *How might the proposed measures impact on your fishery?*
- *What could be considered to improve the measures or mitigate impacts on your fishery?*



4. Mouth of the Fraser River (Area 29)

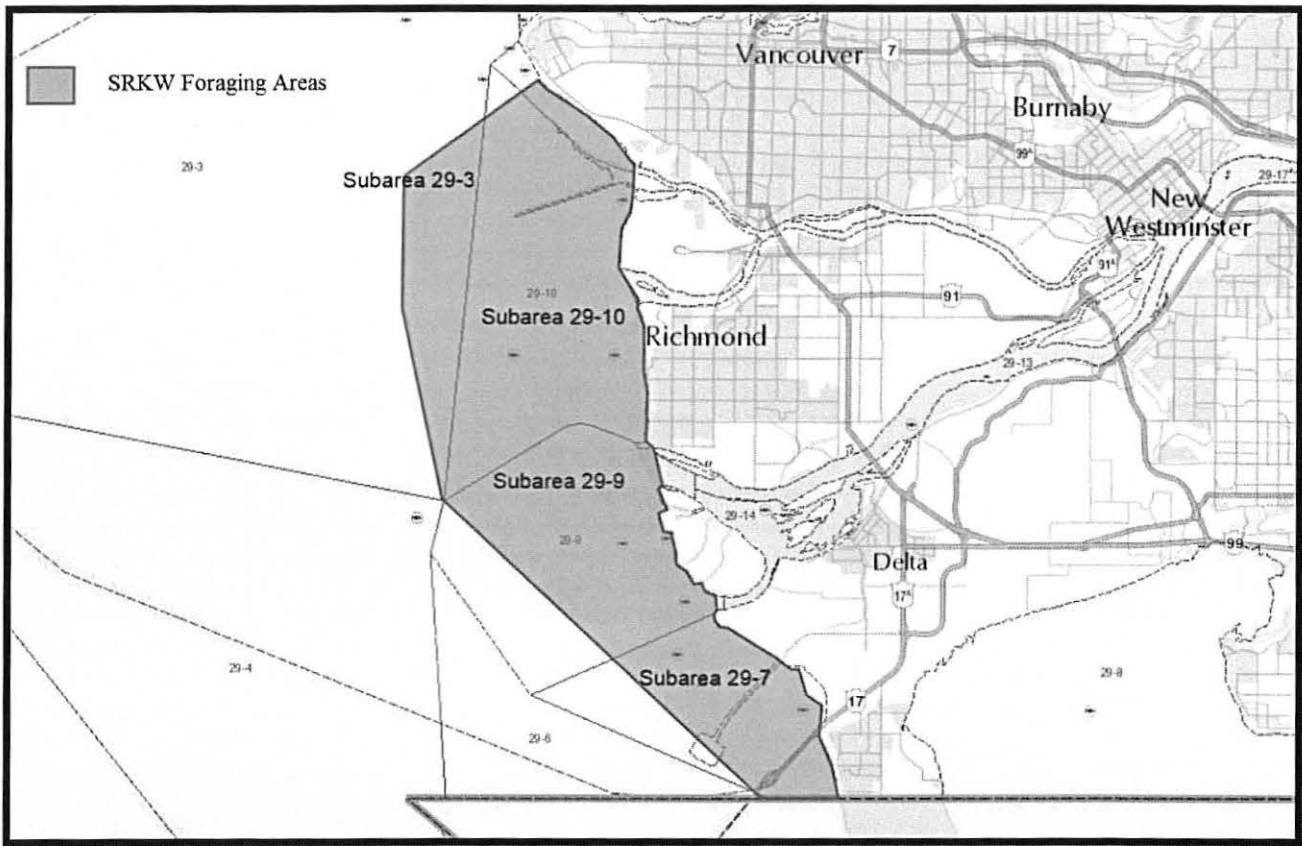


Figure 5: Mouth of Fraser (Area 29) Map showing SRKW Foraging areas and RCA's.

Proposed Management Measures: For this area, salmon fishing or fin fish closures are proposed for Subareas 29-6, 29-7, 29-9, 29-10 and 29-12 from May 1 to Sept. 30.

Questions to Consider:

- *What is your perspective on the on the proposed management measures?*
- *How might the proposed measures impact on your fishery?*
- *What could be considered to improve the measures or mitigate impacts on your fishery?*



5. Monitoring and Evaluation Plans

The Department intends to implement measures on a trial basis in 2018 with additional monitoring designed to assess the effectiveness of management measures over time. Annual post-season review meetings will provide an opportunity to review relevant performance measures and consider future adjustments to management measures as required.

A range of information will be collected to assist with evaluating the performance of any management measures implemented in 2018. Potential performance metrics could include SRKW body condition, area use and foraging success for SRKW, acoustic monitoring and available assessment information for chinook salmon. DFO Science will be collecting field data on SRKW foraging behavior. These studies will occur at various times throughout the identified foraging locations, and will form part of a greater data set on vessel-related impacts to SRKW.

DFO Science also works closely with National Oceanic and Atmospheric Administration (NOAA) scientists, who together will continue to evaluate SRKW body condition through photogrammetric assessment in the spring and fall. In addition, a research program to more effectively evaluate the nutritional status of SRKW is being developed.

Additional options for reporting SRKW interactions are being explored to assist DFO in further understanding the behavior of SRKW in the foraging areas, including reporting options through creel surveys, the [FishingBC app](#), and increased awareness of the [BC Cetacean Sightings Network WhaleReport app](#).

- ***Do you have suggestions for information that your organization could provide and/or assist in collecting?***

6. Other Suggested Management Measures

While this discussion paper focuses on management measures to address Chinook prey availability for SRKW and specific measures for inclusion in salmon IFMPs, these measures are being taken in consideration of broader efforts in support of Southern Resident Killer Whale recovery. However, we are interested in your views on additional measures that should be considered.

- ***What other fisheries management measures should be considered to support prey availability for SRKW in the short term? Longer term?***
- ***Are there voluntary measures that should be considered to support chinook availability for SRKW's?***

You may wish to provide feedback on other approaches to support Chinook prey availability for SRKW including (but not limited to):

- Other fisheries management measures



- Ways to increase overall natural production of Chinook Salmon (e.g., habitat enhancement/restoration)
- Adjustments to production of enhanced chinook. DFO has a comprehensive coast-wide Chinook production program delivered through its Salmonid Enhancement Program. Current hatchery production increases the abundance of adult Chinook in many marine areas, including those areas where SRKWs forage, and as such may be beneficial to SRKWs. This production directly benefits fisheries and provides key assessment information used to manage Chinook stocks, as well as increasing abundance of chinook as a potential SRKW prey item. It may be possible to modify hatchery Chinook production to benefit SRKWs but more information is required to assess this relationship. Increasing hatchery production to benefit SRKWs would be dependent on DFO hatchery capacities (e.g. facility capacity, facility location), knowledge of which stocks would best benefit SRKWs, and careful management of wild stock status and hatchery-wild interactions.
- Manage impacts of other consumers of Chinook Salmon (e.g., seals, sea lions, seabirds, etc.)
- Increase abundance of forage fish consumed by Chinook Salmon (e.g., habitat restoration/protection, adjust harvest removals, etc.)
- or, other measures.

7. How to Provide Feedback

The Department requests your feedback on the discussion questions in this document by **March 15, 2018**.

Feedback on these questions can be directed to Ashley Dobko at: Ashley.Dobko@dfo-mpo.gc.ca.

Final decisions on any management measures implemented for the 2018 fishery will be made as part of the Department's process to develop the salmon IFMPs for Northern and Southern BC. As part of the decision making process, the Department will consider feedback on the proposed measures for addressing Chinook Salmon prey availability for SRKW in 2018 fisheries. Feedback may be provided in writing or during discussions that occur during the normal advisory processes to develop Salmon Integrated Fisheries Management Plan and additional meetings as required. A summary of important IFMP planning dates is provided in Appendix 3.

The Department is also planning on forming a SRKW-Chinook committee with participants from the Department, First Nations, Sport Fishing Advisory Board (SFAB), Commercial Salmon Advisory Board (CSAB), Marine Conservation Caucus (MCC) and Province of BC to review and discuss feedback on the proposed management measures, discuss other management measures, information required to support discussion and opportunities to coordinate salmon fishery activities with other SRKW recovery measures. This committee is intended to assist the Department by supporting discussions on potential management measures that could be implemented and will not be a decision making body. Specific measures that may be considered by the Department will be consulted on with First Nations and stakeholders through the existing salmon IFMP development process.



8. Appendix 1: SARA requirements for SRKW Recovery

Key threats to recovery identified in the SARA *Recovery Strategy for Northern and Southern Resident Killer Whale (Orcinus orca) in Canada* (DFO 2008, 2011), include decreased availability and quality of prey, environmental contamination, and both physical and acoustic disturbance. This SARA Recovery Strategy describes these key threats, the broad strategies for recovery and defines the recovery goal for the Northern and Southern Resident Killer Whales as:

Ensure the long-term viability of Resident Killer Whale populations by achieving and maintaining demographic conditions that preserve their reproductive potential, genetic variation, and cultural continuity.

It is important to note that the recovery goal does not identify a numerical target for recovery (e.g. number of individuals) but is defined in terms of the demographic conditions (e.g. gender ratio, age distribution etc.) fundamental to these populations recovering. While the SRKW population will likely always be considered to be at risk based on the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) criteria, actions to support the growth of the population are required to ensure the long-term viability of the population. The SARA *Action Plan for Northern and Southern Resident Killer Whale (Orcinus orca) in Canada* (DFO 2017) identifies 98 recovery measures required to implement the broad strategies within a five year time frame, including the measures to be taken to address the threats and monitor the recovery of the species. Measures to be taken are identified under the following five broad strategies:

1. *Monitor and refine knowledge of Resident Killer Whale population and distribution in Canadian Pacific waters*
2. *Ensure that Resident Killer Whales have an adequate and accessible food supply to allow recovery*
3. *Ensure that disturbance from human activities does not prevent the recovery of Resident Killer Whales*
4. *Ensure that chemical and biological pollutants do not prevent the recovery of Resident Killer Whale populations*
5. *Protect Critical Habitat for Resident Killer Whales and identify additional areas for Critical Habitat designation and protection*

From the SARA RKW Action Plan and *Whale Science Review* (DFO 2017), there are a number of high priority management-based Recovery Measures that address the threat of reduced prey availability (Strategy 2), some of which also address the threat of acoustic and physical disturbance (Strategy 3). The focus of this discussion document is to further develop potential fishery management options to mitigate the threat of reduced prey availability for SRKW.

Furthermore, this work is intended to align with the following recovery measures identified in the SARA Action Plan (AP) and Whale Science Review (WSR):

- AP-Recovery Measure 6: Take into account both (SRKW & NRKW) the seasonal (acute) as well as the cumulative (chronic) effects of poor returns for Chinook and other important prey species on Resident Killer Whales when managing fisheries.



- WSR: During years of poor Chinook returns, implement a more conservative management approach than would be used in typical years to further reduce or eliminate anthropogenic competition for Chinook and other important prey in key SRKW foraging areas during key times
- AP- Recovery Measure 7: Investigate the benefits of strategic salmon fishery planning approaches and management actions to reduce Resident Killer Whale prey competition in specific feeding areas (e.g. modeling, retention limits, fishery area boundary adjustments or closures), and implement where appropriate.
 - WSR: Plan and manage salmon fisheries in ways that will reduce anthropogenic competition for SRKW prey in important foraging areas during key times (e.g., create protected areas; implement fishery area boundary adjustments and/or closures) or when there are indications of population nutritional stress. Among other things, this will require the formation and formalization of a transboundary working group of science and management representatives from DFO, NOAA, and other technical experts to ensure that SRKW prey needs are incorporated consistently in the management of salmon fisheries for transboundary stocks (e.g. Canada's Policy for Conservation of Wild Salmon, Pacific Salmon Treaty).
- AP - Recovery Measure 10: Investigate the benefits of management actions (e.g. protected areas, fishery area boundary adjustments or closures) to protect important foraging and beach rubbing locations such as Robson Bight and other identified areas, and implement where appropriate.

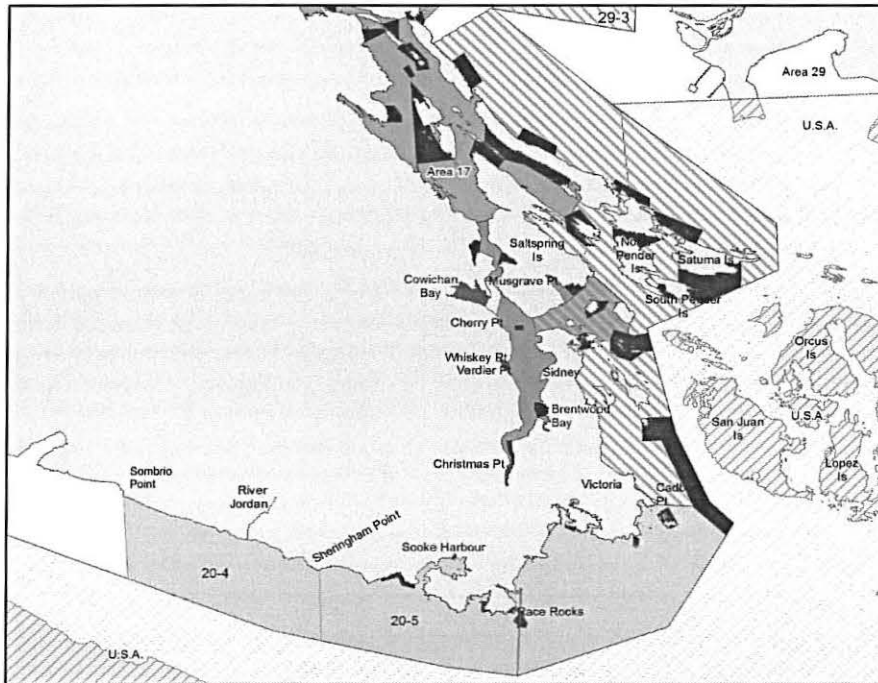
Many of the recovery measures identified in the RKW Action Plan have been ongoing for many years and/or are currently underway. The Department is currently working towards implementation of all the identified recovery measures in the Action Plan and in the WSR, including both longer term, as well as shorter duration measures, to abate the identified threats.



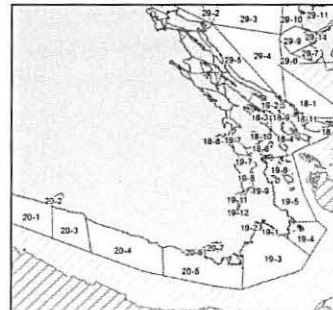
9. Appendix 2: Recreational Fishing Regulations Map and Table



Areas 18, 19 and Subareas 20-5, 29-3 to 29-5 Cowichan to Victoria 2017 CHINOOK OPENINGS AND OTHER CLOSURES



PFMA Overview Map



| | | |
|--|-------------------|----------------------------------------------------------------------------------------------|
| | Apr 1 - Mar 31 | Finfish Closure (Rockfish Conservation Areas) |
| | Aug 1 - Oct 31 | Finfish Closure |
| | Aug 1 - Oct 15 | Finfish Closure |
| | Aug 1 - Oct 15 | Chinook Non-Retention |
| | Sept 15 - Nov 30 | Finfish Closure |
| | March 1 - June 16 | Two (2) chinook per day, wild or hatchery between 45-67 cm hatchery > 67 cm. |
| | June 17 - July 14 | Two (2) chinook per day wild or hatchery between 45-85 cm hatchery > 85 cm. |
| | May 8 - June 16 | Two (2) chinook per day, of which only (1) may be >67 cm. Minimum size limit is 62 cm. |
| | June 17 - July 14 | Two (2) chinook per day, wild or hatchery between 62-85 cm |
| | Sept 1 - Nov 30 | Finfish Closure |



Current Chinook Salmon Recreational Regulations By Pacific Fishery Management Area (PFMA):

Areas 20-1, 20-3

- All year, 2/day, minimum size limit of 45 cm.

Area 20-4 to 20-5

- Mar 1 - Jun 16, 2 chinook/day, wild or hatchery 45-67 cm, hatchery >67 cm.
- Jun 17 - July 15 Fraser Chinook ZONE 1 or 2.
 - Zone 1: 2 Chinook Salmon/day which may be wild or hatchery marked between 45 and 85 cm or hatchery marked > 85 cm.
 - Zone 2: 2 Chinook Salmon/day of which only one may be >67 cm.
- Remainder of year 2/day, minimum size limit of 45 cm.

Areas 18-2, 18-4 and 18-9

- May 7- June 16
 - Zone 1: 2 Chinook Salmon/day of which only one may be >67 cm. The minimum size limit is 62 cm.
- June 17th to July 15th
 - Zone 1: 2 Chinook Salmon/day between 62 cm and 85 cm.
 - Zone 2: 2 Chinook Salmon/day of which only one may be >67 cm. The minimum size limit is 62 cm.

Subarea 18-5

- May 7- June 15
 - Zone 1: 2 Chinook/day of which only one may be >67 cm. The minimum size limit is 62 cm.
- June 17th to July 15th
 - Zone 1: 2 Chinook Salmon/day between 62 cm and 85 cm.
 - Zone 2: 2 Chinook Salmon/day of which only one may be >67 cm. The minimum size limit is 62 cm.

Areas 29-6, 29-7, 29-9 and 29-10

- Effective January 1 until July 31, there is no fishing for Chinook Salmon.

Areas 29-12

- Effective January 1 until July 31 there is no fishing for salmon in the above noted areas.



10. Appendix 3: SRKW and IFMP Timelines

| Activity | 2017/2018 Proposed Timeline | SRKW Consultation Schedule-Details |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Deadline for written submissions from First Nations and advisory groups on issues identified by the Department. Proposals for demonstration fisheries and any additional discussion items for the 2017/2018 Salmon IFMPs are also requested. | February 5, 2018 | SRKW First Nation and advisory groups written submissions will be submitted and the review process will start |
| Integrated Harvest Planning Committee Meetings to review and discuss potential changes to IFMPs and opportunity for focussed discussion on key IFMP issues. Additional meetings with First Nations organizations and advisory groups are also identified in the attached calendar. | Southern IHPC – Vancouver (February 8, 2018) meetings | Consultation on where we are at with SRKW options |
| WebEx to review and answer questions on the SRKW Discussion Document | February 22, 2018 | Will include a presentation of science advice supporting proposed measures, summary of proposed measures and next steps |
| Release draft IFMPs for public review & comment | Approx. February 23, 2018 | The IFMP will include either draft management options or a draft management plan that DFO is seriously considering. |
| IHPC meetings to review draft IFMP | Southern IHPC – Vancouver (March 8, 2018) | Consultation and hearing thoughts on the draft IFMP SRKW options. |
| Deadline to submit comments on draft IFMP (30 day public comment period). | April 6, 2018 | |
| Final IHPC Meeting – Opportunity for final discussion on IFMP feedback. | April 25-26, 2018 Vancouver | Report out on the final SRKW comments and any progress |
| Target for public release of 2018/19 salmon IFMP | June 2018 | SRKW changes to be included in the approved IFMP for release |



Southern Resident Killer Whale Discussion Paper Feedback Form:

First Nation or Stakeholder Group Name: Tsawwassen First Nation

Please provide your feedback in the table below, if there are not enough rows provided please copy and paste more rows in at the end of the table. You are requested to provide feedback in writing using this form **Thursday March 15th, 2018** to Ashley Dobko at Ashley.Dobko@dfo-mpo.gc.ca.

| | |
|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Please choose a category from the below drop down menus which best describes your feedback category: | Please provide your feedback in the column below: |
| Proposed Salmon Fishing or fin fish closures. | <p>Any proposed fishery closures in the Strait of Juan De Fuca should be consulted with local First Nations such that concerns for impacts to their FSC fisheries be taken into considerations and accommodated. Any DFO management actions must meet First Nations priority access, per the Sparrow decision (1990), where First Nations FSC fisheries are the top priority after conservation.</p> <p>The definition of specific areas for salmon fishing or fin fish closures may reduce the disturbance from the recreational fisheries in these areas, but it will have very little, if any, positive effect on Chinook conservation. The fishers will simply catch the same or more Chinook in other areas.</p> <p>Meaningful conservation measure for Southern BC Chinook will require Chinook non-retention regulations or closures of the recreational fisheries for all of Juan de Fuca Strait, the Strait of Georgia, and inside US marine waters (JDF, Gulf Islands and Puget Sound) for the prime months for fishing and SRKW feeding. More details are provided below.</p> |
| Monitoring and Evaluation Plans | The process to develop appropriate management actions for 2018 and beyond must include the development of plans to assess the effect of these management actions of Chinook populations and SRKWs. This will require rigorous monitoring of escapement levels for Southern BC Chinook stocks and monitoring the distribution, abundance and behaviour of SRKW. DFO must consult with First Nations regarding the development and implementation of these monitoring plans. |



| | |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Other Suggested Management Measures | Implement regulations that would require the release of all Chinook salmon caught in recreational fisheries in Juan de Fuca Strait and the Strait of Georgia from April 1 to November 30. "By December, most of the SRKW population have left the Critical Habitat areas in the Salish Sea." |
| Other Suggested Management Measures | No recreational fishing for salmon from April 1 to June 30 in Juan de Fuca Strait and the Strait of Georgia to reduce the number of Chinook caught and released during this period when there are very few other salmon species to catch. Anglers would be permitted to fish for Halibut and other groundfish from April 1 to June 30 and permitted to fish for salmon from July 1 to October 31, but not target or retain any Chinook. |
| Other Suggested Management Measures | For US portions of the Salish Sea, work with US decision makers to implement similar regulations to those identified above. |
| Other Feedback | Increase the number of Chinook released from the Chilliwack Hatchery and other hatchery stocks that rear primarily in the Salish Sea. |
| Other Feedback | Encourage US decision makers to increase the numbers of Chinook released from Puget Sound Hatcheries. |
| Other Feedback | Do not permit any commercial harvest of herring in the Strait of Georgia, so Chinook rearing in these waters have access to a high abundance of forage fish than they would have if a commercial herring fishery was permitted. |



Proposed 2018 Fisheries Management Measures to Support Recovery of Interior Fraser River Steelhead

22-March-2018

Spawning escapements of two Interior Fraser River steelhead stocks, Thompson and Chilcotin Steelhead, have exhibited dramatic declines of approximately 80% over the last 3 generations, with recent years' escapements reaching the lowest levels on record. Less than 300 spawners were counted in 2017, down from escapements of greater than 10,000 individuals observed pre-2000. On February 13, 2018, COSEWIC informed the Minister of Environment and Climate Change Canada that COSEWIC's Emergency Assessment Subcommittee had assessed both the Thompson River and Chilcotin River Steelhead Trout (*Oncorhynchus mykiss*) as *Endangered* and recommended that an Emergency Order be issued placing these wildlife species on Schedule 1 of the *Species at Risk Act* in accordance with Section 29(1). Threats to steelhead include poor ocean survival (which includes but is not limited to predation of juveniles by marine mammals and increased ocean temperatures), reduced freshwater habitat quality, bycatch release mortalities from fisheries targeting Pacific salmon, and release mortalities from recreational catch and release fisheries targeting adult steelhead.

Given ongoing declines in Interior Fraser River (IFR) steelhead escapement, a comprehensive, precautionary approach to the management of all fisheries in southern BC that have the potential to impact steelhead is required for the 2018 fishing season. The Department will be consulting with First Nations and other stakeholders to develop management actions that protect the IFR steelhead migration from incidental fisheries impacts as they migrate from marine approach areas, through the Fraser River, and into their spawning tributaries. The intent of additional management measures implemented in 2018 is to support the objective of minimizing the impacts of Canadian fisheries on IFR steelhead.

To achieve a high degree of protection for IFR steelhead, the Department is proposing implementation of a rolling window closure for those times and areas where IFR steelhead are likely to be present based on our current understanding of the return migration timing of this stock aggregate. Assuming average run timing and migration speed for the IFR steelhead return, the length of the closure required to protect a 90% of the steelhead migration is approximately four weeks with the peak at around Oct 11th at Albion. Table 1 shows these idealized window closure dates for the major Pacific Fisheries Management Areas currently understood to be within the IFR steelhead migration corridor. Idealized dates are based on statistical properties of the run timing distribution and may be adjusted to reflect operational considerations and feedback from consultations.

Table 1. Idealized window closure dates to protect 90% of the IFR steelhead migration given average peak timing, spread of the run, and migration speed

| Fishery Location | Start Date | End Date |
|-------------------------------------------------------------------------------|------------|----------|
| Area 11 | Sep/11 | Oct/07 |
| Area 12 | Sep/12 | Oct/08 |
| Area 13 | Sep/17 | Oct/13 |
| Area 21/121 | Sep/18 | Oct/14 |
| Subareas 29-6, 29-7, 29-9 and 29-10 | Sep/28 | Oct/24 |
| Fraser River – Below Mission | Sep/28 | Oct/24 |
| Fraser River – Mission to Hope | Sep/29 | Oct/29 |
| Fraser River – Hope to Sawmill Creek | Oct/03 | Oct/31 |
| Fraser River – Sawmill Creek to Lytton | Oct/05 | Dec/31 |
| Fraser River – Lytton to Williams Lake River | Oct/12 | Dec/31 |
| Thompson River – D/S of the confluence of the North and South Thompson Rivers | Oct/12 | Dec/31 |

Using the assumption of average stock migration timing and speed to guide protective fishery management actions is an approach that the Department has used in the past to protect stocks of concern (e.g. Interior Fraser River coho, Early Stuart sockeye). However, it is well understood that there is considerable variability in the return timing of a given stock among years, and that this variability needs to be taken into account when evaluating the probability of achieving the desired level of protection for a stock of concern. DFO biologists have developed a model that can estimate the probability that a specified window closure period will protect a given portion of the IFR Steelhead return using our current estimates of variability in peak timing, spread, and migration speed for this stock. Outcomes from this model (shown in Table 2), indicate that the closure dates identified in Table 1 will protect at least 80% of the IFR steelhead return 74 years out of 100.

Table 2. Level of protection provided to IFR steelhead return based on window closure dates from Table 1 (and accounting for variability in peak timing, spread, and migration speed)

| Protection Level | Expected frequency of achieving protection level based on historic steelhead timing information |
|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| Frequency of protecting at least 70% if the IFR SH return | 89 out of 100 years |
| Frequency of protecting at least 80% of the IFR SH return | 74 out of 100 years |
| Frequency of protecting at least 90% of the IFR SH return | 43 out of 100 years |

Note that the current version of the DFO model only evaluates the majority of commercial salmon fisheries for sockeye, pink and chum in southern BC including those in Johnstone Strait, Georgia Strait, and the Fraser River up to Sawmill Creek (i.e. those fishing areas coloured grey in Table 1 are



not included in the model). However, given that a similar window closure approach is proposed for fisheries outside of these areas (e.g. Areas 21/121 and Fraser River above Sawmill Creek greyed out areas in Table 1), it is expected that incorporating these areas into the model would not result in a meaningfully different outcome in terms of the level of protection afforded to IFR steelhead. Values used as inputs to the DFO model and to derive the idealized window closure dates noted in Table 1 are detailed in Appendix 1.

Due to significant overlap in migration timing of IFR steelhead with chum salmon, a rolling window closure designed to protect IFR steelhead will have considerable impacts on all fisheries targeting chum in 2018. In developing detailed plans for specific fisheries, consideration will be given to salmon allocation priorities, and to the extent to which the fishery has previously demonstrated a high degree of species selectivity. Figure 1 provides a draft plan for your consideration of how we may operationalize the idealized rolling window closure dates identified in Table 1. This plan identifies dates for the following management measures:

1. Interior Fraser River Coho closure (only previously demonstrated selective fisheries permitted)
2. Overlap between IFR Coho and IFR Steelhead closures (proposed no fishing permitted)
3. IFR Steelhead closure (proposed no fishing permitted except marine recreational salmon fishery)
4. Food, Social and Ceremonial and marine recreational salmon fishing only (proposed)

The draft plan described in Figure 2 identifies actions proposed by the Department of Fisheries and Oceans, and is targeted at salmon-directed fisheries that are managed by the Department. These actions have been identified to address conservation concerns for IFR steelhead. In addition to the management measures identified in Figure 2, the Department is working with the Provincial Ministry of Forest, Lands, Natural Resources Operations and Rural Development to ensure that actions proposed for Provincially-managed fisheries are well aligned with the actions proposed by the Department in this document. The Province of British Columbia has indicated that it plans to close IFR steelhead-targeted catch and release fisheries in 2018, and is actively examining all provincially managed sport fisheries that have by-catch of steelhead, with the objective of having interim or full fishing closures on Interior Fraser and its tributaries by fall of 2018. The Province is not proposing recreational closures for provincially-managed species in Region 2 (Lower Mainland) recreational fisheries at this time. The Province is also collaborating with First Nations to identify effective conservation and recovery measures for IFR steelhead.

In evaluating this proposed approach, please consider the following:

1. Does the proposed plan provide the appropriate level of protection for Interior Fraser River Steelhead?



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2. Should selective fishing for salmon be permitted during the steelhead window closure? If so, what fisheries / gears should be considered?
 3. Are there additional measures that should be considered?

DFO will be consulting with First Nations and key stakeholders to refine the details of additional management actions to be taken in 2018. The outcome of these consultations will be reflected in the final 2018 Southern BC Salmon Integrated Fisheries Management Plan.

If you require further information on this material, please contact your local area manager(s) or Marla Maxwell at marla.maxwell@dfo-mpo.gc.ca.

Appendix 1.

Derivation of IFR Steelhead Window Closure Dates

1. IFR Steelhead return timing to Albion test fishery

It is standard practice to use a normal distribution to represent the pattern of migrating salmon past a fixed point. To characterize IFR steelhead migration, a normal distribution was fit using a Bayesian hierarchical approach to 22 years (1995-2016) of steelhead encounters at the Albion test fishery to estimate the peak migration date and distribution of the migration timing each year. The average peak date past Albion over these 22 years was October 11 (with a standard deviation of 15 days) and the average spread (equal to 1SD of the normal distribution) of the run was 9 days (with a standard deviation of 5 days). The October 11 peak and 9 day spread were used to develop the average migration timing curve for IFR Steelhead past Albion. The window closure dates identified in Table 1 encompass the central 90% of this normal distribution.

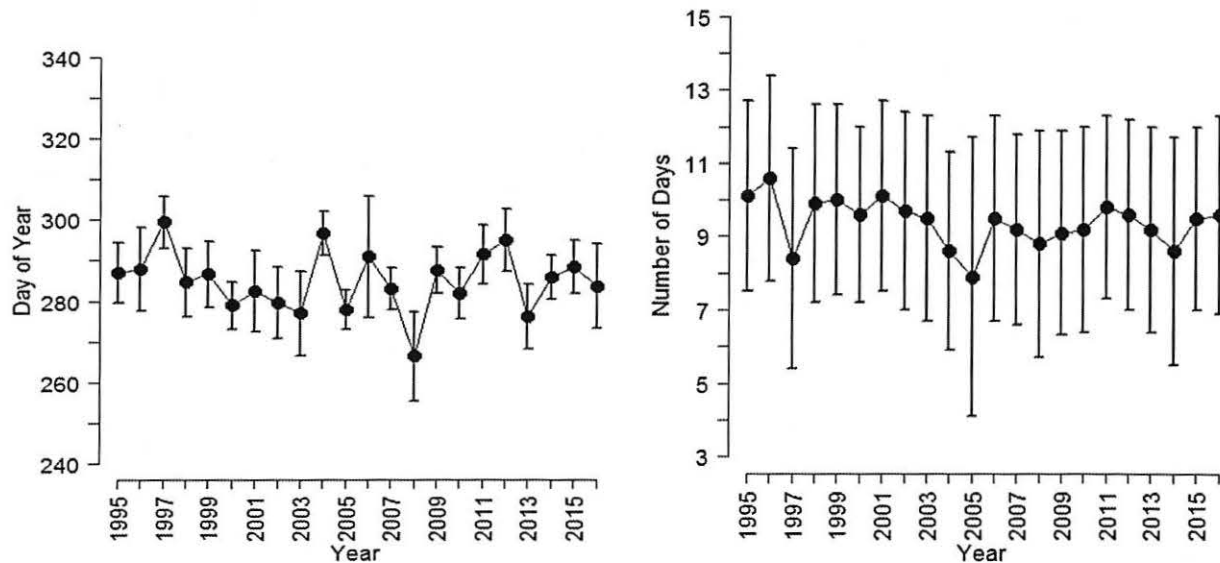


Figure 2. The mean (+/- 1 SD) of estimated timing of peak of migration (left figure) and of the spread of the distribution (right figure) of the steelhead return to the Albion test fishery. Data provided for 1995 to 2016.

2. IFR Steelhead migration speed

A variety of studies were reviewed that estimated migration speeds for steelhead and other similar sized salmonids. The individual studies reported average migration speeds ranging from 17 to 35 km per day, with maximum and minimum values ranging from 6.5 to 62 km per day. Most of these studies were done in marine waters. For deriving window closure dates, we assumed marine migration speeds of IFR Steelhead of 29.5 km/day (with a standard deviation of 4.1 km/day), and an in-river migration speed of 20 km/day (with a standard deviation of 3 km/day).

3. Distance travelled

Migration distance to a particular Fishery Management Area was measured from Albion to the furthest seaward boundary of a PFMA (for example, the most northern point of Area 13) using Google Earth. This distance was then divided by the migration speed (taking into account different speeds in the freshwater portion of the migration), to estimate the average number of days required for steelhead to migrate from each Fishery Management Area to Albion. These “timing offsets” are shown in the table below.

| Timing Offsets from Albion | # days |
|----------------------------------------|--------|
| Area 11 | 17 |
| Area 12 | 16 |
| Area 13 | 11 |
| Area 21/121 | 9 |
| Subareas 29-6, 29-7, 29-9 and 29-10 | 0 |
| Fraser River – Below Mission | 0 |
| Fraser River – Mission to Hope | 1 |
| Fraser River – Hope to Sawmill Creek | 5 |
| Fraser River – Sawmill Creek to Lytton | 7 |

Estimation of probabilities (i.e. frequency of achieving stated levels of protection of the steelhead population from fisheries)

The DFO “exposure” model was used to estimate the proportion of the population that would be protected from fishing given the window closure dates identified in Table 1. Results of the model output are shown in Table 2. We assumed a migration pattern drawn from the historical distribution of run spread and peak migration date estimated annually (described on page 5) to generate 10,000 simulated patterns of IFR steelhead migration through the various fisheries included in the model. The proportion of the run exposed is recorded (and the proportion protected equals 1 – proportion exposed). Because we are using a Monte Carlo procedure to simulate a large number of possible IFR steelhead return distributions, we can estimate not only a range of the proportion of IFR steelhead exposed, but also the uncertainty around the estimated proportion exposed due to the variability in migration speed and timing.



TSAWWASSEN FIRST NATION
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19 April 2018

Angela Bate
Area Director, Lower Fraser Area
Fisheries and Oceans Canada | Government of Canada
angela.bate@dfo-mpo.gc.ca

RE: Proposed 2018 Fisheries Management Measures to Support Recovery of Interior Fraser River Steelhead

We write to in response to your letter of 22 March 2018 regarding the *Proposed 2018 Fisheries Management Measures to Support Recovery of Interior Fraser River Steelhead*.

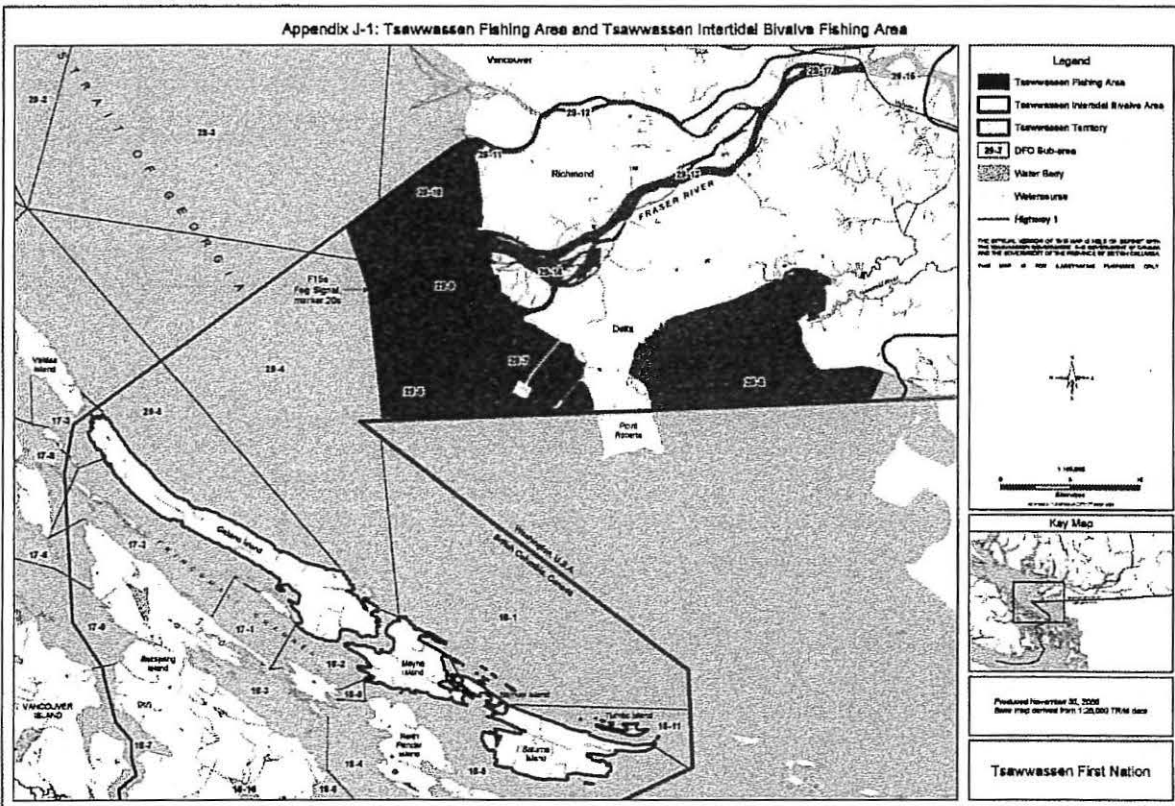
We understand that the LFFA also have concerns about this issue. Tsawwassen First Nation share the LFFA concerns detailed in their April 13, 2018 letter; however, our situation and perspective is our own. In this letter we articulate TFN's specific concerns regarding the interaction between your proposal and our treaty rights under the Final Agreement.

As you are aware, the Tsawwassen First Nations have constitutionally protected Treaty Rights to fish domestically within the Tsawwassen First Nations Fishing Area (TFA). These must be taken into consideration when proposing management measures for fishing within the TFA or outside the TFA to the extent such measures could affect the Tsawwassen Fishing Rights.

The proposed Steelhead measures include fishing restrictions within the DFO PFMA's 29-6, 29-7, 29-8, 29-9, 29-10 (see map insert) plus the Fraser River downstream of Mission (29-11, 29-12, 29-13, 29-14 and 29-17) and have the potential to impact fisheries for Chinook, Pink and Chum and potential non-salmon finfish depending on the specific management measures.

With respect to the specific measures being considered we have the following comments:

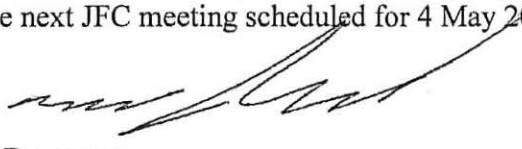
1. The proposed measures indicate that marine recreational fishing could continue in the TFA (i.e. 29-6, 29-7, 29-9 and 29-10) during the proposed closure period while the Tsawwassen domestic fisheries would be closed. This is completely unacceptable to the Tsawwassen First Nation.



2. The Tsawwassen First Nation request to see information documenting how the proposed management measures would reduce or eliminate Steelhead interceptions within the TFA.
3. The information paper also states ‘when developing detailed plans for specific fisheries, consideration will be given to salmon allocation priorities, and to the extent to which the fishery has previously demonstrated a high degree of species selectivity. In previous years, the TFN FSC Chum salmon fishery opens right after the proposed Coho Window Closure (~ 5 Oct). Your proposal would delay the opening of TFN’s FSC fishery by two weeks (20 Oct). TFN has demonstrated that their FSC Chum fishery is highly selective because in eight years of TFN annual reporting (Blakley et al. 2009-2016) only one Steelhead has been recorded as being harvested (2011) and it was subsequently released. TFN would like DFO to consider the FSC gillnet Chum fishery as a selective fishery and details will be outlined in the fishing plan.
4. If the proposed Steelhead closure window proceeds, TFN has concerns with the potential overlap of their FSC Chum fishery, the Area E Commercial gill-net Chum fisheries and any Economic Opportunity fisheries that may all occur the week of 20 October (based on past year’s schedules). TFN is concerned about fish availability and any potential scheduling conflicts between these fisheries.
5. Tsawwassen First Nation requests that a Socio-Economic Assessment be conducted to inform potential effects on TFN before any management measures are finalized.
6. During the overlap Coho and Steelhead window closures will the intended measures be applied to both species? If not, which measures are for Steelhead and which measures are for Coho?

In conclusion, Tsawwassen First Nation has significant concerns with respect to these management measures. Tsawwassen First Nation is entitled to be meaningfully consulted

before DFO makes decisions that may affect our Treaty Rights and recommend that these issues be addressed at the next JFC meeting scheduled for 4 May 2018.

Kind Regards,
Laura Cassidy 
Manager, Natural Resources
Tsawwassen First Nation

CC:
Marla Maxwell
Matthew Parslow
Brian Matts



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September 18, 2018

Dear Chief, Council, Legislators, and Fisheries Program Managers:

RE: **Consultation on the potential emergency listing of Thompson and Chilcotin Steelhead Trout under the *Species at Risk Act***

I am writing to invite your participation in upcoming consultations on the potential emergency listing of Thompson and Chilcotin Steelhead Trout under the *Species at Risk Act* (SARA).

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) has performed an emergency assessment of both the Thompson and Chilcotin Steelhead Trout populations (or Designatable Units [DUs]) and found them to be endangered.

Following an emergency assessment, the Minister of Environment and Climate Change Canada (ECCC) must form an opinion on whether imminent threat to survival exists. If the Minister is of the opinion there is an imminent threat to one or both populations of Steelhead Trout, she must recommend to Governor in Council (GiC) that the population(s) be listed on an emergency basis. Following such a recommendation, GiC would make a listing decision based on information provided by the Minister, and may consider additional information, such as socio-economic impacts and the results of consultations with Indigenous Peoples and stakeholders.

To inform the GiC's decision, Fisheries and Oceans Canada (DFO) is conducting consultations on the potential impacts of listing Thompson and Chilcotin Steelhead, and collect any additional information submitted for GiC to consider. As such, DFO is hosting both online and in-person consultation opportunities.

CONSULTATION OPPORTUNITIES:

Online listing consultations October 1 through December 2, 2018

Online consultation consultations will occur on the Species at Risk Public Registry (www.sararegistry.gc.ca/involved/consultation/default_e.cfm).

In-person meetings and webinars for First Nations

In-person meetings and webinars with First Nations and Indigenous organizations are being scheduled in October and November. Below are the planned dates and locations:

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Canada

| Date | Format | Location | Participants |
|---------|-----------|----------------|--------------------------------------------|
| Oct. 11 | Webinar | n/a | First Nations and Indigenous organizations |
| Oct. 23 | In-person | Williams Lake | First Nations and Indigenous organizations |
| Oct. 30 | In-person | Kamloops | First Nations and Indigenous organizations |
| Nov. 2 | In-person | Campbell River | First Nations and Indigenous organizations |
| Nov. 13 | In-person | Lower mainland | First Nations and Indigenous organizations |
| Nov. 15 | In-person | Nanaimo | First Nations and Indigenous organizations |

Detailed invitations with venues and times will follow this letter. If your First Nation or Indigenous organization is unable to attend any of these opportunities but still wishes to participate in a meeting or Webinar, please contact the Species at Risk Program at sara.xpac@dfo-mpo.gc.ca or 250-720-4445.

Webinars for stakeholders

Webinars for stakeholders and conservation groups will be held on the following days:

| Date | Format | Location | Participants |
|---------|---------|----------|--------------------------------------------|
| Nov. 7 | Webinar | n/a | Recreational fishery stakeholders |
| Nov. 9 | Webinar | n/a | Commercial salmon fishery stakeholders |
| Nov. 22 | Webinar | n/a | Environmental non-government organizations |

Invitations to these Webinars will be provided to stakeholder groups only. If you or your First Nation or Indigenous organization has any questions about these meetings please the Species at Risk Program at sara.xpac@dfo-mpo.gc.ca or 250-720-4445.

COLLECTION OF ADDITIONAL INFORMATION TO SUPPORT THE STEELHEAD LISTING PROCESS:

Indigenous Cultural Significance

The required approach to Cost-Benefit Analyses (CBA) for regulatory processes may not be the appropriate tool to best reflect the social or cultural significance of Thompson and Chilcotin Steelhead to Indigenous peoples. DFO is therefore collecting information in a parallel process regarding cultural significance for consideration in a listing decision, in the event there is an opinion of imminent threat. For more information please refer to the following website: <http://www.dfo-mpo.gc.ca/species-especes/consultations/sara-lep/cultural-significance/index-eng.html>.

CBA Workbooks

All First Nations and Indigenous organizations, as well as commercial and recreational stakeholders, are invited to complete online workbooks to help to inform the CBA (available October 1st at www.sararegistry.gc.ca/involved/consultation/default_e.cfm). In order for the information to be analysed for the CBA, we request that these workbooks be completed before **November 15th, 2018**.

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We would appreciate your help in distributing this information to members of your community. Further details regarding the consultations will be forthcoming. If you have any questions or concerns, please contact the SARA program at sara.xpac@dfo-mpo.gc.ca or 250-720-4445.

Thank you for your consideration. We look forward to your involvement in these emergency listing consultations.

Yours sincerely,

A handwritten signature in black ink, appearing to be 'Karen Leslie', written over a horizontal line.

Karen Leslie
Regional Manager, Species at Risk Program, Pacific Region



29 November 2018

DFO Species at Risk Program
Fisheries and Oceans Canada | Government of Canada
sara.xpac@dfo-mpo.gc.ca

RE: Feedback Regarding the Potential Species at Risk Act Emergency Listing of Thompson and Chilcotin Steelhead

Tsawwassen First Nation writes to provide feedback in response to the potential SARA (Species at Risk Act) emergency listing of Thompson and Chilcotin Steelhead as outlined (<http://www.dfo-mpo.gc.ca/species-especes/consultations/steelheadtrout-saumonarcenciel/index-eng.html>).

As you are aware, the Tsawwassen First Nation (TFN) has constitutionally protected Treaty Rights to fish domestically within the Tsawwassen First Nations Fishing Area (TFA). These must be taken into consideration when proposing management measures for fishing within the TFA or outside the TFA to the extent such measures could affect the Tsawwassen Fishing Rights.

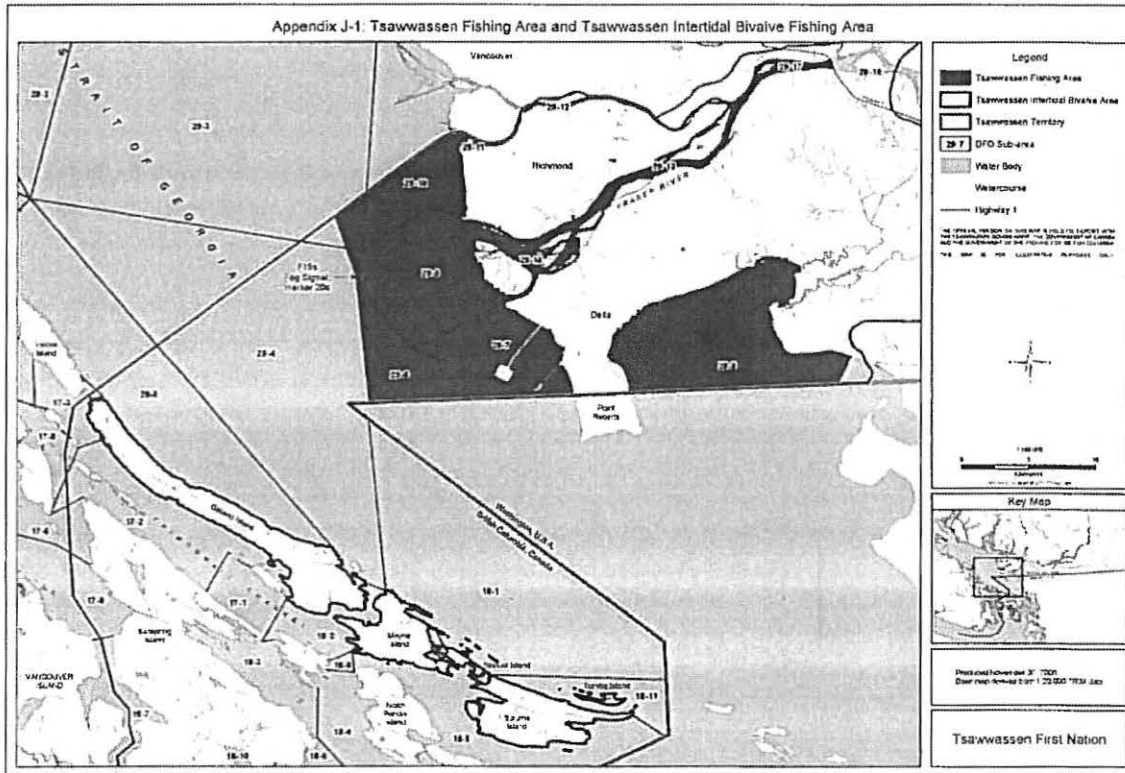
The proposed Thompson and Chilcotin Steelhead "Do Not List" and "List" management scenarios include fishing restrictions within the DFO PFMA's 29-6, 29-7, 29-9, 29-10 (see map insert) including the Fraser River downstream of Mission (29-11, 29-12, 29-13, 29-14 and 29-17) will impact directed fisheries for Chinook, Pink and Chum and potential non-salmon finfish depending on the specific management measures. Note, directed fisheries for Steelhead are not permitted within the TFA and if Steelhead are harvested as by-catch in the salmon fisheries, they are released as outlined in TFN's harvest agreement.

With respect to the specific "List" management measures being considered TFN has the following comments:



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TSAWWASSEN FIRST NATION



1. The Tsawwassen First Nation requests to see information documenting how the proposed "List" management measures, specifically suspending the First Nation fisheries, would aid in recovering the Chilcotin and Thompson River steelhead stocks. Based on the RECOVERY POTENTIAL ASSESSMENT FOR CHILCOTIN RIVER AND THOMPSON RIVER STEELHEAD TROUT (*ONCORHYNCHUS MYKISS*) DESIGNATABLE UNITS (DFO, November 2018) "simulations suggest that the Thompson population will continue to decline even in the absence of exploitation (i.e. fisheries) and an increase in productivity is critical to recover this population (either through direct intervention or by natural improvements in ocean conditions). Furthermore, it is unlikely that the recovery target can be achieved within 6 generations without additional improvement in productivity."
2. Prior to 2018, the TFN Food, Social and Ceremonial (FSC) Chum salmon fishery opened right after the proposed Coho Window Closure (~ 5 Oct). The proposed "List" management scenario would delay the opening of TFN's FSC fishery by five weeks (11 Nov). TFN has demonstrated that their FSC Chum fishery is highly selective because in nine years of TFN annual reporting (Blakley et al. 2009-2017) only one Steelhead has been recorded as being



caught (2011) and it was subsequently released. Moreover, at least 20% of TFN's catch data is required to be validated (i.e. counted) through an interview process. In 2017, the "validated" interviews represented 42% of the total fishing effort for salmon. Based on the data above, TFN's FSC gillnet Chum fishery has very little impact on the Thompson and Chilcotin Steelhead stocks and DFO should reconsider suspending TFN's FSC fisheries if these stocks are "Listed."

3. If the proposed 60-day rolling window closure proceeds, TFN has concerns with the potential overlap of their FSC Chum fishery, the Area E Commercial gill-net Chum fisheries and any Economic Opportunity fisheries that may all occur the week of 11 November (based on past year's schedules). TFN is concerned about fish availability and any potential scheduling conflicts between these fisheries.
4. Tsawwassen First Nation requests that the Cost Benefit Analysis (CBA) report be shared at their Joint Fisheries table in order to inform the TFN membership about any potential economic. It should be noted that CBA workbook is not appropriate for Treaty Nations that have Treaty Rights and Harvest Agreements with Canada.
5. If the Thompson and Chilcotin Steelhead are "Listed" the greatest economic impact to TFN will be the loss of the Chum fisheries. Since Effective Date, TFN has harvested, on average, 96% (2,461) and 89% (18,570) of their Chum FSC and Economic Opportunity annual allocations, respectively (Blakley et al. 2009-2017). Outside of the dominant Sockeye fishing years (every four years), the Chum fisheries are the mainstay of TFN's fish harvest.
6. Traditionally, salmon, sturgeon, crab, and eulachon were TFN's primary food resources and remain a key part of TFN's current diet. In addition, fish continues to provide for cultural and social processes that are very important to TFN. For example, the annual First Salmon ceremony, marks the first salmon catch of the season. The salmon, it was believed, were supernatural beings, who came every year to give their flesh to the people who were obliged to treat them properly. The salmon were cooked in a special way and their bones carefully returned to water in a sacred ritual. This ceremony is still carried out today. For TFN, stewardship has always been closely linked to harvesting. The inability to harvest Chinook, Chum and Pink salmon due to the emergency listing of Thompson and Chilcotin Steelhead will significantly impact Tsawwassen First Nation's cultural identity.



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In conclusion, Tsawwassen First Nation has significant concerns with respect to the change in management measures, especially if the Thompson and Chilcotin Steelhead are "Listed". Tsawwassen First Nation is entitled to be meaningfully consulted before DFO makes decisions that may affect TFN's Treaty Rights and recommend that these issues be addressed at TFN's Joint Fisheries Table.

Kind Regards,

Laura Cassidy
Manager, Natural Resources
Tsawwassen First Nation

CC: Angela Bate
Colin Schwindt
Brian Matts
Peter Hall
Karl English
Anita Blakely