

CHAPTER 3

Chinook Salmon

This Chapter shall apply to the period from 2019 through 2028 (the “Chapter Period”).

1. The Parties agree that:
 - (a) Chinook stocks that are subject to this Treaty have varying levels of status with many being healthy and meeting goals for long-term production while others are identified as conservation concerns, including some in the U.S. Pacific Northwest that are listed under the U.S. Endangered Species Act (ESA) and some in Canada that are assessed to be at increasing risk of extinction;
 - (b) fishery management measures that are implemented under this Treaty are intended to be appropriate for recovering, sustaining, and protecting Chinook salmon stocks in Canada and the U.S. and are responsive to changes in productivity of Chinook salmon stocks associated with environmental conditions;
 - (c) while fishing has contributed to the decline of some Chinook stocks, the continued status of Chinook stocks that are considered depressed generally reflects the long-term cumulative effects of other factors, particularly chronic habitat degradation, in some instances deleterious hatchery practices, cyclic natural phenomena, and large scale environmental variability affecting both marine and freshwater habitats;

- (d) successful Chinook conservation, restoration, and harvest management depends on a sustained and bilaterally coordinated program of resource protection, restoration, enhancement, and utilization based on:
- (i) science-based fishery management regimes that foster healthy and abundant Chinook stocks by contributing to the restoration and rebuilding of depressed natural stocks while providing opportunities to harvest sustainably abundant natural stocks as well as abundant hatchery produced fish,
 - (ii) the implementation of protective and remedial actions identified in local and regional recovery planning processes that address non-fishing factors that limit the abundance, productivity, genetic diversity, or spatial structure of natural Chinook salmon stocks,
 - (iii) scientifically sound enhancement activities that provide mitigation to fisheries for habitat loss or degradation, or improve productivity through the appropriate use of artificial propagation and supplementation techniques, and
 - (iv) the continued modification of fisheries to maintain or increase the overall harvest rates exerted on hatchery-origin Chinook, where desirable, while simultaneously decreasing or maintaining limits on the overall mortality rates on natural-origin Chinook;
- (e) a healthy and productive Chinook resource imparts sustainable benefits for the fisheries of both Parties, contributes other social, economic, and cultural benefits to both Parties, and provides ecosystem benefits to other species;

- (f) the harvest levels and other fishery management approaches used to target healthy natural and hatchery stocks while constraining impacts on depressed natural stocks, including various spatial and temporal fishery shaping measures that are bilaterally coordinated as necessary, coupled with improvements in fishery management programs prescribed or referred to in this Chapter, are intended to complement recovery actions that are undertaken in the fishing and non-fishing sectors in Canada and the U.S.; and
- (g) changes in ocean and freshwater conditions, stock-specific cohort survivals, stock abundances, and stock distribution are being observed. To the extent practical, the Parties shall consider these sources of uncertainty to avoid unwarranted escalation of Chinook mortalities.

2. The Parties shall:

- (a) implement a comprehensive and coordinated Chinook fishery management program that:
 - (i) uses an abundance-based framework to manage all Chinook fisheries that are subject to this Chapter,
 - (ii) is responsive to significant changes in the productivity of Chinook salmon stocks associated with environmental conditions,

- (iii) uses harvest regimes based on annual indices of abundance that are responsive to changes in production, that take into account all fishery induced mortalities, and that are designed to meet maximum sustainable yield (MSY) or other agreed biologically-based numeric escapement or exploitation rate objectives, including those set out in Attachment I,
- (iv) contributes to the improvement in trends in spawning escapements of depressed Chinook salmon stocks and is consistent with improved Chinook salmon production,
- (v) considers the limitations of regulatory systems, including the need for timely Commission decisions that are necessary for the Parties to cooperate in management,
- (vi) seeks to preserve biological diversity of the Chinook salmon resource and contributes to the restoration of currently depressed stocks by improving the abundance, productivity, genetic diversity, and spatial structure of stocks over time,
- (vii) specifies fishery management obligations to maintain healthy stocks, to rebuild depressed naturally spawning stocks, and to provide a means for sharing the harvest and the conservation responsibility for Chinook salmon stocks coast-wide between the Parties,
- (viii) develops additional biological information pursuant to a program of work and incorporates that information into the coast-wide management regime, and considers the latest scientific information developed in each Party's recovery planning processes,

- (ix) includes a commitment to discuss within the Commission significant management changes¹ that a Party is considering that may alter the stock or age composition and incidental mortality of a fishery regime's catch;
- (b) maintain a joint Chinook Technical Committee (the "CTC"). The CTC shall report, unless the Parties otherwise decide, to the Commission. The CTC shall, *inter alia*:
 - (i) at the request of the Commission, evaluate management actions and report:
 - (A) if there is a concern about the consistency of the actions with the measures set out in this Chapter, or
 - (B) on the effectiveness of the actions in attaining the specified objectives,
 - (ii) report annually on catches, terminal exclusions, hatchery add-ons, harvest rate indices, estimates of incidental mortality, and exploitation rates, that apply best available information to account for mark-selective fishery (MSF) impacts for all Chinook fisheries and stocks harvested within the Treaty area,
 - (iii) report annually on naturally spawning Chinook stocks in relation to the agreed MSY or other agreed biologically-based escapement objectives, rebuilding exploitation rate objectives, or other metrics, and evaluate trends in the status of stocks and report on progress in the rebuilding of naturally spawning Chinook stocks,

¹ The model configuration from March 2018 (CLB1804) shall be used to establish a baseline run. The Parties shall document specific concerns or inconsistencies between that configuration and the management regime in 2018.

- (iv) evaluate and review escapement objectives that fishery management agencies have set for Chinook stocks subject to this Chapter for consistency with MSY or other agreed biologically-based escapement goals and, when requested by the Commission, recommend goals for naturally spawning Chinook stocks that are consistent with this Chapter,
- (v) recommend, to the Commission, standards for the minimum assessment program required to effectively implement this Chapter together with an estimate of the costs to meet, and effectiveness of, the standards, provide information on stock assessments relative to these standards adopted by the Commission and periodically recommend to the Commission any improvements in stock assessments that are needed to meet adopted standards,
- (vi) recommend research projects, and their costs, intended to improve the implementation of this Chapter,
- (vii) provide an annual report to the Commission regarding the stock-specific impacts of MSF for Chinook in the Treaty area,
- (viii) provide annual calibrations of the Commission Chinook model² with pre-season and post-season abundance indexes by April 1 of each year,
- (ix) provide to the Commission an annual summary concerning the Catch and Escapement Indicator Improvement (CEII) and Coded-Wire Tag and Recovery (CWT&R) programs, and
- (x) undertake specific assignments as determined by the Commission that relate to the implementation of this Chapter, including the assignments described in Appendix A to this Chapter;

² TCCHINOOK (18) 1 – 2017 Exploitation Rate Analysis and Model Calibration (May 2018).

- (c) implement through their respective domestic management authorities, a 10-year Chinook salmon CWT&R program that begins in 2019 that provides timely data to implement this Chapter via improvements and studies designed to achieve CTC and CWT work group data standards and guidelines³. The purpose of the CWT&R program shall be to:
- (i) maintain and improve the precision and accuracy of critical CWT-based statistics used by the CTC and Selective Fisheries Evaluation Committee (SFEC) in support of this Chapter,
 - (ii) accelerate the processing of CWT data to provide CWT data for the pre-season planning process,
 - (iii) increase the number of exploitation rate indicator stocks to represent Chinook production and fishery exploitation rates for escapement indicator stocks,
 - (iv) examine the representativeness of exploitation rate indicator stocks for escapement indicator stocks and CWT model stocks, and
 - (v) develop analytical tools that involve the analysis of CWT data in the implementation of this Chapter;
- (d) implement through their respective domestic management authorities, a 10-year Chinook salmon CEII program that begins in 2019 that provides timely data to implement this Chapter via objective and repeatable methodologies in data limited situations and in others via improvements and studies designed to achieve CTC data standards, guidelines, and analysis schedules. The purpose of the CEII program includes the development of analytical tools that involve catch and escapement data in the implementation of this Chapter; and

³ Guidelines in TCCHINOOK(13)-2 and PSC Technical Report 25.

- (e) create and maintain a work group to discuss the programs initiated in subparagraphs (c) and (d) by 2020. The work group shall:
 - (i) create opportunities for the exchange of project results and conclusions, advancements in knowledge, and discussion of the direction of these programs between the Parties, management entities, and knowledgeable individuals;
 - (ii) review project results and conclusions from these programs and provide these reviews to the project proponents and the Commission; and
 - (iii) identify, for the Commission, changes to projects or suggest new projects to fill gaps in knowledge.

3. The Parties agree to implement, during the Chapter Period, an abundance-based coast-wide Chinook salmon management regime to meet the objectives set out in paragraph 2(a). Fishery regimes shall be classified under this management regime as aggregate abundance-based management regimes (“AABM”), or individual stock-based management regimes (“ISBM”):

- (a) An AABM fishery is an abundance-based regime that constrains catch or total mortality to a numerical limit computed from either a pre-season forecast or an in-season estimate of abundance, from which a harvest rate index can be calculated, expressed as a proportion of the 1979 to 1982 base period. The following regimes shall be managed under an AABM regime:
 - (i) southeast Alaska (SEAK) sport, net and troll,
 - (ii) Northern British Columbia (NBC) troll (Pacific Fishery Management Areas 1-5, 101-105 and 142) and Haida Gwaii sport (Pacific Fishery Management Areas 1-2, 101, 102 and 142)⁴, and

⁴ The NBC AABM Chinook salmon fishery includes portions of Aboriginal rights based fisheries.

- (iii) The West Coast of Vancouver Island (WCVI) troll (Pacific Fishery Management Areas 21, 23-27, and PFMA 121, 123-127) and outside sport (also Pacific Fishery Management Areas 21, 23-27, and 121, 123-127 but with additional time and area specifications that distinguish WCVI outside sport from inside sport)⁵;
- (b) An ISBM fishery is a regime that constrains the annual impacts within the fisheries of a jurisdiction for a naturally spawning Chinook salmon stock or stock group. ISBM regimes apply to all Chinook salmon fisheries that are subject to this Chapter that are not AABM fisheries. The obligations that apply to ISBM fisheries are stock-specific limits as set out in paragraph 5(a) for all ISBM fisheries that include, but are not necessarily limited to: northern British Columbia marine net and coastal sport (excluding Haida Gwaii), and freshwater sport and net; central British Columbia marine net, sport and troll and freshwater sport and net; southern British Columbia marine net, troll and sport and freshwater sport and net; WCVI inside marine sport and net and freshwater sport and net; south Puget Sound marine net and sport and freshwater sport and net; north Puget Sound marine net and sport and freshwater sport and net; Juan de Fuca marine net, troll and sport and freshwater sport and net; Washington Coastal marine net, troll and sport and freshwater sport and net; Washington Ocean marine troll and sport; Columbia River net and sport; Oregon marine net, sport and troll, and freshwater sport; Idaho (Snake River Basin) freshwater sport and net.

⁵ The WCVI AABM Chinook salmon fishery includes:

- Sport fishery in Pacific Fishery Management Areas (PFMA) 21, 23, 24 inside the Canadian “surflines” and PFMA 121, 123, 124 during the period from October 16 through July 31, plus that portion of PFMA 21, 121, 123, 124 outside of a line generally one nautical mile seaward from the shoreline or existing Department of Fisheries and Oceans surflines, during the period August 1 through October 15.
- Sport fishery in PFMA 25, 26, 27 inside the Canadian “surflines” and PFMA 125, 126, 127 during the period from October 16 through June 30, plus that portion of PFMA 125, 126, 127 outside of a line generally one nautical mile seaward from the shoreline or existing Department of Fisheries and Oceans surflines, for the period from July 1 through October 15.
- Portions of Aboriginal rights based fisheries.

4. The Parties agree:

- (a) to monitor and manage incidental fishing mortality in AABM fisheries with the intent of not exceeding levels as specified in paragraph 4(f) during the Chapter Period;
- (b) that landed catch and incidental mortalities in ISBM fisheries are limited according to paragraph 5;
- (c) to provide estimates of incidental mortality of Chinook salmon in all ISBM and AABM fisheries. ISBM fisheries have total mortality constraints (catch plus associated incidental mortality) while AABM fisheries have catch limits.

The CTC shall recommend standards for the desired level of precision and accuracy of data required to estimate incidental fishing mortality by February 2020;

- (d) to provide estimates of encounters of Chinook released in fisheries that, when multiplied by assumed gear-specific mortality rates, provide estimates of incidental mortality that are used in sub-paragraph (c). These estimates:
 - (i) shall be developed by the Parties annually from direct observation of fisheries, or
 - (ii) shall be calculated from a predictable relationship between encounters and landed catch based on a time series of direct observations of fisheries reviewed by the CTC;
- (e) that the CTC shall complete an annual post-season assessment for fisheries that includes:
 - (i) estimates of encounters and incidental mortalities in all fisheries that are subject to this Treaty,

- (ii) post-season estimates of incidental mortality that includes incidental mortality from MSF and total mortality, and
 - (iii) a description of the causes (if identifiable) of significant changes in rates or patterns of incidental mortalities in all fisheries that are subject to this Treaty relative to paragraphs 4(a) and 4(f) for AABM fisheries (1999-2016) and paragraph 5 for ISBM fisheries (1999-2015);
- (f) that, if it is determined by the Commission through the monitoring and evaluation described in sub-paragraph (e), that an AABM fishery has a level of incidental mortality that exceeds 59,400 for the SEAK AABM fishery or 38,600 for the combined aggregate for the NBC and WCVI AABM fisheries, the Commission shall review the information, determine if fishery adjustments are needed during the Chapter Period, and recommend any appropriate remedial action to ensure that the Parties do not exceed incidental mortality limits;
- (g) that MSF are conducted subject to the following conditions or understandings, as applicable:
 - (i) MSFs for Chinook shall be conducted in a manner that selectively reduces fishery impacts on natural spawning salmon relative to hatchery-origin salmon,
 - (ii) annual post-season reports generated by each Party shall contain a summary of the MSFs implemented in that season,
 - (iii) MSFs implemented by either Party that affect stocks subject to this Treaty shall be sampled, monitored, and reported in accordance with the applicable protocols reviewed by the SFEC and adopted by the Commission; including estimates of catches and releases of mass-marked and unmarked Chinook for sublegal and legal-size categories,

- (iv) SFEC shall report on MSF, assist with developing analytical procedures, and recommend to the Commission approaches that could improve the estimation of impacts on natural Chinook stocks, and
- (v) subject to the availability of funds, the U.S. shall establish a Mark Selective Fishery Fund (Fund). The Fund shall be administered by the Commission to assist fishery management agencies with equipment and operations, as needed, to mass-mark hatchery produced Chinook salmon, to estimate incidental mortality, and to maintain and improve the ability to estimate exploitation rates on Chinook salmon indicator stocks that are encountered in MSF, including improvements and development of bilateral analytical tools. The Commission shall adopt procedures to solicit proposals from U.S. and Canadian management entities for the use of the Fund, be advised on the merits of proposals by specialists as it determines appropriate, and make funding decisions.

5. With respect to ISBM fisheries, the Parties agree that for the Chapter Period:

- (a) U.S. and Canadian ISBM fisheries shall be managed to limit the total adult equivalent mortality for stocks listed in Attachment I that are not meeting agreed biologically-based management objectives, or that do not have agreed management objectives, to no more than the limits identified in Attachment I;
- (b) the Commission shall establish a work group to explore issues related to Okanagan Chinook, including the establishment of management objectives, enhancement and the possible use of Okanagan Chinook as an indicator stock⁶. The work group shall report to the Commission by October 2019;

⁶ The work shall be consistent with paragraph 7 of Chapter 1 of this Treaty.

- (c) either or both Parties may implement domestic policies that constrain their respective fishery impacts on depressed Chinook stocks to a greater extent than is required by this paragraph;
- (d) actual ISBM fishery performance relative to the obligations set out in this paragraph shall be evaluated by the CTC and reported annually to the Commission. Because the performance analysis⁷ is dependent on recovery of CWT, the CTC shall provide the evaluation for ISBM fisheries on a post-season basis; and
- (e) the Commission shall use the Calendar Year Exploitation Rate (CYER) metric to monitor the total mortality in ISBM fisheries and shall review the CYER metric during the year 2022 to make a decision on its continued application or the use of an alternative metric. In the absence of a Commission decision to use an alternative metric, the use of the CYER metric continues. Before the review, the CTC shall complete the development of the Data Generation Model, complete the evaluation of alternative metrics for the evaluation of ISBM fisheries and develop data standards for the application of CYER as a metric.

⁷ The Parties acknowledge that some stocks identified in Attachment I have a small number of CWT recoveries in ISBM fisheries. This circumstance can occur for a number of reasons and may contribute to imprecision in estimates of CYERs that may present challenges in management and compliance with paragraph 5. The Commission shall discuss ISBM fishery performance that may occur as described in paragraph 7(c) and may consider this imprecision and other circumstances. The implementation of the CEII and CWT&R programs is expected to assist in addressing these challenges.

6. The Parties agree that:
- (a) for the Chapter Period, the SEAK, NBC, and WCVI AABM fisheries shall be abundance based with the annual catch limits specified in Table 1 (catch limits specified for AABM fisheries at levels of the Chinook abundance index) based on the annual calibrations of the version of the Commission Chinook model as configured in March 2018 (CLB 1804), and Table 2 (catch limits for the SEAK AABM fishery and the catch per unit effort (CPUE)-based tiers), unless otherwise decided by the Commission;
 - (b) subject to paragraph 7(d), the SEAK AABM fishery annual Treaty Chinook catch limits shall be defined as follows:
 - (i) the fishing year shall start on October 1 and continue through September 30 of the following year,
 - (ii) the U.S. shall provide to the Commission by February 1 of each year a proposed annual catch limit based on the estimated CPUE from the winter power troll fishery in District 113 during statistical weeks 41-48 (using method and base period data in Appendix B to this Chapter) and Table 2,
 - (iii) if, due to unforeseen circumstances, the winter power troll fishery in District 113 during statistical weeks 41-48 does not take place, the Commission Chinook model pre-season estimate of the abundance index (AI) shall be used to set the SEAK pre-season Treaty Chinook limit using Table 2,
 - (iv) the SEAK fishery shall be managed to the degree possible to achieve agreed escapement goals for the SEAK and Transboundary Rivers (TBR) Chinook stocks listed in Attachment I;

- (c) Canada may develop an alternate approach to the Commission Chinook model for the NBC and WCVI fisheries, based on observational fishery data, and the Commission shall review and may adopt the alternate approach;
- (d) the graduated harvest rate approach underlying the catch limits associated with the abundance index values for the AABM fisheries is designed to contribute to the achievement of MSY or other agreed biologically-based escapement objectives;
- (e) the graduated harvest rate approach is based on a relationship between the aggregate abundance of Chinook stocks that are available to the fishery and the harvest rate index described in Appendix C to this Chapter;
- (f) AABM fisheries shall be managed annually so as not to exceed the catch limits designated in paragraphs 6(a) and 6(b);
- (g) the CTC shall determine annually if there are deviations between the observed catches and both the pre-season and post-season allowable catches for the SEAK, NBC, and WCVI AABM Chinook catches;
- (h) the following actions in AABM fisheries shall be taken if the actual catch differs from the pre-season limit (management error);
 - (i) if the actual catch exceeds the pre-season catch limit (overage) then the overage shall be paid back in the fishing year after the overage occurs, and
 - (ii) if the actual catch is lower than the pre-season catch limit (underage) then the underage shall not be accumulated;
- (i) the procedures and accepted exclusions established by the Commission shall continue to apply so that Chinook salmon catches may be excluded from counting against AABM catch limitations in selected terminal areas;

- (j) the procedures established by the Commission shall continue to allow for hatchery add-ons harvested in AABM fisheries to not count against AABM catch limitations;
- (k) the CTC shall provide detailed information concerning any catches of Chinook associated with paragraphs 6(i) and 6(j) and a summary of information used to determine the allowable exclusion or hatchery add-on in the annual catch and escapement report; and
- (l) the CTC shall provide the first post-season AI estimates for the SEAK, NBC, and WCVI AABM fisheries using the Commission Chinook model and compare the following estimates and calculate model error related overages for the annual post-season review:
 - (i) the CPUE-based tier to the tier based on the first post-season AI, using the Commission Chinook model, for the SEAK AABM fishery, and
 - (ii) the Commission Chinook model pre-season AI or alternative approach to the Commission Chinook model first post-season AI in the NBC and WCVI AABM fisheries.

7. The Parties agree:

- (a) to manage their fisheries to the best of their ability to achieve agreed-to stock specific management objectives and harvest provisions of this Chapter. The CTC shall annually review the performance of the fisheries to meet management objectives and harvest provisions and present its findings to the Commission during the annual meeting. The Commission shall take any action, as needed, based on this annual review. Specifically, the CTC shall provide the Commission with:
 - (i) the AABM fisheries pre-season limits, actual catches, and identify the extent of any exceedance (overage) of those limits for the prior fishing season (management error),
 - (ii) the AABM fisheries post-season limits for fisheries that occurred two years prior and any exceedance (overage) between the annual pre- and post-season limits from two years prior (model error),
 - (iii) recommendations for minimizing deviations between pre- and post-season fishery limits (model and management tool improvements), and
 - (iv) the status concerning the achievement of stock-specific management objectives; specifically, a table of agreed-to management objectives for each stock included in Attachment I and the annual stock-specific metrics, if available, with the identification of stocks that achieved less than 85% of the point estimate (or lower end range) of the management objective for three consecutive years beginning in 2019⁸;

⁸ For stocks with an exploitation rate management objective, the trigger shall be a CYER that exceeds the management objective by more than 15% (i.e., the estimated CYER is 1.15 of the CYER management objective) on average in three consecutive years.

- (b) to define AABM post-season fishery limits by using the first post-season Commission Chinook model estimate. Deviations between AABM post-season catch limits and actual catches are anticipated. Overages are of particular concern. The Commission encourages management entities to use pre-season models to plan fisheries, but to use in-season indicators and other tools to minimize potential overages evaluated from post-season catch limits. If, in two consecutive years, the NBC or WCVI AABM fishery catches exceed post-season limits by more than 10%, or the SEAK AABM fishery the pre-season tier and catches exceed the post-season tier, then:
- (i) the Commission shall request that the management entity responsible for the management of that AABM fishery take necessary actions to minimize variance between the pre-season and post-season catch limits commencing the following year. By the end of the annual meeting of the Commission, the Commission shall discuss proposals from the management entity regarding the actions to be taken and the expected outcomes of those actions before those actions are implemented, and
 - (ii) the CTC shall recommend to the Commission a plan to improve the performance of pre-season, in-season, and other management tools so that the deviations between catches and post-season fishery limits to AABM fisheries are narrowed to a maximum level of 10%;

- (c) that for ISBM fisheries, the CTC shall annually compute and report the metrics described in paragraphs 5(a), and, using the best available post-season data and analysis, report performance to the Commission of those metrics and the obligations set out in this Chapter. If a Party anticipates that there is a risk that it may exceed its CYER limit in a given year, that Party shall advise the Commission before the fishing season, provide supporting rationale and explain how the CYER limit shall be achieved on average over a three-year period. Beginning with the 2019-2021 catch years⁹, the CTC shall compute a running three-year average of CYERs for all stocks in ISBM fisheries set out in Attachment I. For stocks in Attachment I without agreed management objectives, all years shall be used to calculate the running three-year average. For each stock with an agreed management objective set out in Attachment I, the running three-year average shall include all years in which the management objective is not achieved, and the years in which the management objective is achieved with a CYER that is less than or equal to the ISBM obligation identified in paragraph 5. For stocks that have a running three-year average CYER that exceeds the limit of paragraph 5 by more than 10% (i.e., the estimated CYER is greater than 1.1 of the CYER limit):
- (i) the Commission shall request that the management entities responsible for the management of the ISBM fishery take necessary actions to minimize the deviation between the three-year CYER average and the CYER limits in Attachment I. By the end of the annual meeting of the Commission, the Commission shall discuss proposals from the management entity regarding the actions to be taken and the expected outcomes of those actions before those actions are implemented, and

⁹ The CTC shall begin reporting the running average of CYERs for each stock in Attachment I when data from catch years 2019-2021 are available from both Parties' ISBM fisheries. It is anticipated that estimates of CYERs for the 2019-2021 fishing years shall be available for all stocks no later than 2023 or by 2022 if the processing of CWTs collected in U.S. ISBM fisheries and escapement is accelerated as identified by the Parties in paragraph 2(c)(ii) of this Chapter.

- (ii) the CTC shall provide to the Commission a plan to improve performance of pre-season, in-season, and other management tools so that the deviations between CYERs and CYER limits are narrowed to a maximum level of 10% when limits apply (Attachment I);
- (d) to conduct up to two reviews of the CPUE-based approach to decide whether to continue to use this method to determine the catch limit for the SEAK AABM fishery, to return back to use of the Commission Chinook model, or to adopt an alternative method as determined by the Parties, to determine pre-season estimates of the aggregate AI of Chinook stocks available to the SEAK troll fishery and the relationship between the catch and AIs specified in Table 1. The first review shall occur as soon as practical after the 2022 first post-season AI is calculated and the second review shall occur as soon as practical after the 2025 first post-season AI is calculated. The Commission decision shall be based on the outcome of:
 - (i) a comparison of cumulative actual catch and the cumulative post-season catch limit from the Commission Chinook model,
 - (ii) a comparison of the cumulative performance of the CPUE-based catch limit and the pre-season catch limit from the Commission Chinook model to predict the catch limit estimated from the first post-season calibration of the Commission Chinook model (model error), and
 - (iii) a comparison of the abundance tier selected by use of the CPUE method and the abundance tier that is selected by use of the pre-season calibration of the Commission Chinook model with the abundance tier selected from the first post-season calibration derived from the Commission Chinook model;

- (e) to consider the results of reviews described in sub-paragraph (d), immediately, and decide whether to continue to use the CPUE method for the SEAK AABM fishery. Unless the Commission decides to continue to use the CPUE-based approach or adopt an alternative method, the Commission Chinook model estimate of the AI and Table 1 shall be used to determine the annual pre-season and post-season catch limits;
- (f) that, in the event of extraordinary circumstances, either Party may recommend, for conservation purposes, that the Commission consider developing additional management actions in the relevant fisheries to respond to those circumstances. That recommendation shall be part of a coordinated management plan that shall include actions taken in all marine and freshwater fisheries that significantly affect the stock or stock group;
- (g) that unusual circumstances may arise in the management of ISBM and AABM fisheries. Either Party may ask the Commission for some flexibility in the implementation of this Chapter to avoid undue disruption of fisheries while maintaining the conservation and allocation principles embodied in this Treaty; and
- (h) that, by January 2023, the CTC shall develop a draft outline for a five-year review to evaluate the effectiveness of harvest reduction measures that are taken for AABM and ISBM fisheries. The draft outline shall include stock status (including spawners, productivity, and abundance indices) and fishery performance (including catches, incidental mortality, and fishery indices such as fishery harvest rates) and seek Commission direction to proceed with preparing a report. In January 2025, the Commission shall review the report to identify any appropriate modifications to this Chapter to improve its implementation.

Table 1. Catches specified for AABM fisheries at levels of the Chinook abundance index.

Values for catch at levels of abundance that are between the values stated may be linearly interpolated between adjacent values.

Abundance Index	SEAK	NBC	WCVI
0.25	41,300	32,500	28,100
0.30	46,400	39,000	33,700
0.35	51,500	45,500	39,300
0.40	56,600	52,000	44,900
0.45	61,700	58,500	50,500
0.495	66,300	64,400	55,600
0.50	66,800	65,000	65,500
0.55	71,900	71,500	72,100
0.60	77,100	78,000	78,600
0.65	82,200	84,500	85,200
0.70	87,300	91,000	91,700
0.75	92,400	97,500	98,300
0.80	97,500	104,000	104,800
0.85	102,600	110,500	111,400
0.90	107,700	117,000	117,900
0.95	112,800	123,500	135,400
1.00	117,900	130,000	142,600
1.005	119,100	130,700	163,700
1.05	129,100	136,500	171,100
1.10	140,300	143,000	179,200
1.15	151,500	149,500	192,100
1.20	162,800	156,000	200,400
1.205	184,800	156,700	201,300
1.25	191,200	163,300	208,800
1.30	198,200	170,700	217,100
1.35	205,200	178,000	225,500
1.40	212,200	185,300	233,800
1.45	219,200	192,700	242,200
1.50	226,200	200,000	250,500
1.505	244,500	219,600	251,400
1.55	251,400	226,100	258,900
1.60	259,000	233,400	267,200
1.65	266,600	240,700	275,600
1.70	274,200	248,000	283,900
1.75	281,800	255,300	292,300
1.80	289,400	262,600	300,600

1.805	303,500	263,300	301,500
1.85	310,600	269,900	309,000
1.90	318,600	277,200	317,300
1.95	326,500	284,500	325,700
2.00	334,500	291,800	334,000
2.05	342,400	299,100	342,400
2.10	350,400	306,400	350,700
2.15	358,300	313,700	359,100
2.20	366,300	321,000	367,500
2.25	381,000	328,300	375,800

Table 2. Catch limits for the SEAK AABM fishery and the CPUE-based tiers.

CPUE-based Tier	AI-based Tier	Catch Limit
Less than 2.0	Less than 0.875	Commission Determination
2.0 to less than 2.6	Between 0.875 and 1.0	111,833
2.6 to less than 3.8	Between 1.005 and 1.2	140,323
3.8 to less than 6.0	Between 1.205 and 1.5	205,165
6.0 to less than 8.7	Between 1.505 and 1.8	266,585
8.7 to less than 20.5	Between 1.805 and 2.2	334,465
20.5 and greater	Greater than 2.2	372,921

**Appendix A to Annex IV, Chapter 3: Understandings
Regarding Chinook Technical Committee Assignments
Relating to the Implementation of Chapter 3 of Annex IV**

1. The CTC shall, *inter alia*:
 - (a) at the request of the Commission, evaluate management actions and report:
 - (i) if there is a concern about the consistency of the actions with the measures set out in this Chapter, or
 - (ii) on the effectiveness of the actions in attaining the specified objectives;
 - (b) report annually on catches, terminal exclusions, hatchery add-ons, harvest rate indices, estimates of incidental mortality, and exploitation rates that apply best available information to account for MSF impacts for all Chinook fisheries and stocks harvested within the Treaty area;
 - (c) report annually on naturally spawning Chinook stocks in relation to the agreed MSY or other agreed biologically-based escapement objectives, rebuilding exploitation rate objectives, or other metrics and evaluate trends in the status of stocks and report on progress in the rebuilding of naturally spawning Chinook stocks;
 - (d) evaluate and review escapement objectives that fishery management agencies have set for Chinook stocks subject to this Chapter for consistency with MSY or other agreed biologically-based escapement goals and, when requested by the Commission, recommend goals for naturally spawning Chinook stocks that are consistent with this Chapter;

- (e) recommend, to the Commission, standards for the minimum assessment program that are required to effectively implement this Chapter together with an estimate of the costs to meet, and effectiveness of, the standards, provide information on stock assessments relative to the standards adopted by the Commission and periodically recommend to the Commission any improvements in stock assessments that are needed to meet adopted standards;
 - (f) recommend research projects, and describe their costs, intended to improve the implementation of this Chapter;
 - (g) provide an annual report to the Commission regarding the stock-specific impacts of MSF for Chinook salmon in the Treaty area;
 - (h) provide annual calibrations of the Commission Chinook model¹⁰ with pre-season and post-season abundance indexes by April 1 of each year; and
 - (i) provide to the Commission an annual summary concerning the CEII and CWT&R programs.
2. The CTC shall recommend standards for the level of precision and accuracy of data required to estimate incidental fishing mortality by February 2020.
3. The CTC shall complete an annual post-season assessment for fisheries that includes:
- (a) an evaluation of estimates of encounters and incidental mortalities in all fisheries subject to this Treaty;
 - (b) post-season estimates of incidental mortality that includes incidental mortality from MSF, and total mortality; and

¹⁰ TCCHINOOK (18) 1 – 2017 Exploitation Rate Analysis and Model Calibration (May 2018).

(c) a description of the causes (if identifiable) of significant changes in rates or patterns of incidental mortalities in fisheries relative to paragraph 4(a) and 4(f) of this Chapter for AABM fisheries (1999-2016) and paragraph 5 of this Chapter for ISBM fisheries (1999-2015).

4. The CTC shall evaluate the ISBM fishery performance relative to the obligations set forth in paragraph 5 of this Chapter and report annually to the Commission. Because the performance analysis is dependent on recovery of coded wire tags, the CTC shall provide the evaluation for ISBM fisheries on a post-season basis.

5. The Commission shall use the CYER metric to monitor the total mortality in ISBM fisheries. By 2021, the CTC shall include in the annual Exploitation Rate Analysis and Model Calibration (ERA) report a description of the procedures used to adjust the CYERs in order to represent the effects of MSF on the naturally spawning Chinook stocks specified in Attachment I, and describe any adjustments of terminal fishery impacts for the exploitation rate indicator stock in order to represent the impacts on the associated escapement indicator stock specified in Attachment I. The Commission shall review the CYER metric during the year 2022 to make a decision on its continued application or the use of an alternative metric. In the absence of a Commission decision to use an alternative metric, the use of the CYER metric shall continue. Before the review, the CTC shall complete the development of the Data Generation Model, complete the evaluation of alternative metrics for the evaluation of ISBM fisheries and develop data standards to apply the CYER as a metric.

6. The CTC shall determine annually if deviations have occurred between the observed catches and both the pre-season and post-season allowable catches for the SEAK, NBC, and WCVI AABM Treaty Chinook catches.

7. The CTC shall provide detailed information concerning any catches of Chinook associated with paragraphs 6(i) and 6(j) of this Chapter, and a summary of information used to determine the allowable exclusion or hatchery add-on, in the annual catch and escapement report.

8. The CTC shall provide the first post-season AI estimates for the SEAK, NBC, and WCVI AABM fisheries using the Commission Chinook model and compare the following estimates and calculate model error related overages for the annual post-season review:

- (a) the CPUE-based tier to the tier based on the first post-season AI, using the Commission Chinook model, for the SEAK AABM fishery; and
- (b) the Commission Chinook model pre-season AI or alternative approach to the Commission Chinook model first post-season AI in the NBC and WCVI AABM fisheries.

9. The CTC shall review the performance of the fisheries to meet management objectives and harvest provisions and present its findings to the Commission during the annual meeting. The Commission shall take any action, as needed, based on this annual review. Specifically, the CTC shall provide the Commission with:

- (a) the AABM fisheries pre-season limits, actual catches, and identify the extent of any exceedance (overage) of those limits for the prior fishing season (management error),
- (b) the AABM fisheries post-season limits for fisheries that occurred two years prior and any exceedance (overage) between the annual pre- and post-season limits from two years prior (model error),
- (c) recommendations for minimizing deviations between pre- and post-season fishery limits (model and management tool improvements), and

- (d) the status concerning the achievement of stock-specific management objectives; specifically, a table of agreed-to management objectives for each stock included in Attachment I and the annual stock-specific metrics, if available, with the identification of stocks that achieved less than 85% of the point estimate (or lower end range) of the management objective for three consecutive years beginning in 2019¹¹.

10. The CTC shall annually compute and report AABM post-season fishery limits defined by using the first post-season Commission Chinook model estimate. Deviations between AABM post-season catch limits and actual catches are anticipated. Overages are of particular concern. The Commission encourages management entities to use pre-season models to plan fisheries, but to use in-season indicators and other tools to minimize potential overages evaluated from post-season catch limits. If, in two consecutive years, the NBC or WCVI AABM fishery catches exceed post-season limits by more than 10%, or the SEAK AABM fishery the pre-season tier and catches exceed the post-season tier:

- (a) The Commission shall request that the management entity responsible for the management of the AABM fishery take necessary actions to minimize variance between the pre-season and post-season catch limits commencing the following year. By the end of the annual meeting of the Commission, the Commission shall discuss proposals from the management entity regarding the actions to be taken and the expected outcomes of those actions before those actions are implemented; and
- (b) The CTC shall recommend to the Commission a plan to improve the performance of pre-season, in-season and other management tools so that the deviations

¹¹ For stocks with an exploitation rate management objective, the trigger shall be a CYER that exceeded the management objective by more than 15 percent (i.e., estimated CYER is 1.15 of the CYER management objective) on average in three consecutive years.

between catches and post-season fishery limits to AABM fisheries are narrowed to a maximum level of 10%.

11. For ISBM fisheries, the CTC shall annually compute and report the metrics described in paragraphs 5(a) of this Chapter, and, using the best available post-season data and analysis, report performance to the Commission of those metrics and the obligations set out in this Chapter. Beginning with the 2019-2021 catch years¹², the CTC shall compute a running three-year average of CYERs for all stocks in ISBM fisheries set out in Attachment I. For stocks in Attachment I without agreed management objectives, all years shall be used to calculate the running three-year average. For each stock with an agreed management objectives set out in Attachment I, the running three-year average shall include all of the years in which the management objective is not achieved, and the years in which the management objective is achieved with a CYER that is less than or equal to the ISBM obligation identified in paragraph 5 of this Chapter. For stocks that have a running three-year average CYER that exceeds the limit of paragraph 5 of this Chapter by more than 10% (i.e., the estimated CYER is greater than 1.1 of the CYER limit):

- (a) the Commission shall request that the management entities responsible for the management of the ISBM fishery take necessary actions to minimize the deviation between the three-year CYER average and the CYER limits in Attachment I. By the end of the annual meeting of the Commission, the Commission shall discuss proposals from the management entities regarding the actions to be taken and the expected outcomes of those actions before those actions are implemented; and
- (b) the CTC shall provide to the Commission a plan to improve the performance of pre-season, in-season and other management tools so that the deviations between

¹² The CTC shall begin reporting the running average of CYERs for each stock in Attachment I when data from catch years 2019-2021 are available from both Parties' ISBM fisheries. It is anticipated that estimates of CYERs for the 2019-2021 fishing years shall be available for all stocks no later than 2023 or by 2022 if the processing of CWTs collected in U.S. ISBM fisheries and escapement is accelerated as identified by the Parties in paragraph 2(c)(ii) of this Chapter.

the CYERs and the CYER limits are narrowed to a maximum level of 10% when limits apply (Attachment I).

12. The Commission may request CTC support in conducting up to two reviews of the CPUE-based approach to decide whether to continue to use this method to determine the catch limit for the SEAK AABM fishery, to return back to use of the Commission Chinook model, or to adopt an alternative method as determined by the Parties, to determine pre-season estimates of the aggregate AI of Chinook stocks available to the SEAK troll fishery and the relationship between the catch and AIs specified in Table 1.

13. By January 2023, the CTC shall develop a draft outline for a five-year review to evaluate the effectiveness of harvest reduction measures that are taken for AABM and ISBM fisheries. The draft outline shall include stock status (including spawners, productivity, and abundance indices) and fishery performance (including catches, incidental mortality, and fishery indices such as fishery harvest rates) and seek Commission direction to proceed with preparing a report. In January 2025, the Commission shall review the report to identify any appropriate modifications to this Chapter to improve its implementation.

14. The CTC shall work to complete by February 2019 improvements to the Commission Chinook model in order to add and refine the stocks and fisheries (referred to as Phase 2 in CTC 2018 work plan). The Commission shall receive the model improvements from Phase 2 and make a decision about their implementation. The CTC shall complete its Phase 3 work (e.g., improved capabilities for pre-season abundance forecasts, representation of MSF and other types of fisheries regulations, inclusion of release data to estimate incidental mortalities in Chinook fisheries, incorporation of stock-specific growth functions, etc.) in time to support the five-year review. The Commission shall receive the model improvements from Phase 3 and make a decision about their implementation.

**Appendix B to Annex IV, Chapter 3:
Calculations and Base Period Data Related to Estimated CPUE From
the Winter Troll fishery in District 113 During Statistical Weeks 41-48**

1. SEAK CPUE is defined as catch divided by effort:

$$CPUE = \frac{Catch}{Effort}$$

Where *catch* is the number of Chinook caught in the power troll fishery and *effort* is the number of power troll fishery boat days, which is the date fishing ends, minus the date fishing begins plus one (e.g., a boat that started and stopped fishing on the same day fished for 1 boat day). Both catch and effort are computed using all fish ticket data collected during the SEAK District 113 early winter power troll fishery (Alaska Department of Fish and Game (ADF&G)) statistical weeks 41-48).

2. A table of SEAK CPUE and first postseason AI from the Commission Chinook model for accounting years 2001-2015 are shown below.

Accounting Year	SEAK CPUE	First postseason AI
2001	8.3	1.29
2002	16.9	1.82
2003	20.4	2.17
2004	8.0	2.06
2005	8.3	1.90
2006	10.3	1.73
2007	3.4	1.34
2008	2.3	1.01
2009	3.4	1.20
2010	4.3	1.31
2011	6.1	1.62
2012	4.7	1.24
2013	4.4	1.63
2014	7.4	2.20
2015	13.2	1.95

3. Seven tiers of CPUE-based abundance were defined by: 1) an extremely low CPUE to account for extremely low abundance years; 2) four intermediate abundance CPUE tiers that correspond to the four segments of the broken stick relationship between harvest rate index (HRI) and AI in the *Exchange of Notes between the Government of Canada and the Government of the United States of America relating to Annex IV of the Treaty between the Government of Canada and the Government of the United States of America concerning Pacific Salmon*, done at Washington on 23 December 2008 (the “2009 Agreement”); and, 3) two tiers of CPUE that account for high and extremely high abundance years.

4. Results of an allometric power regression of SEAK CPUE on the first postseason AI during 2001-2015 were used to convert AI-based breakpoints to CPUE-based breakpoints between the seven tiers of catch ceiling:

$$\widehat{CPUE} = 2.636 \cdot AI^{2.029}.$$

The three AI-based breakpoints in the 2009 Agreement were converted as follows:

AI breakpoint = 1.005; CPUE-based breakpoint = 2.6

AI breakpoint = 1.2; CPUE-based breakpoint = 3.8

AI breakpoint = 1.5; CPUE-based breakpoint = 6.0

Two new tiers were added to provide greater resolution for AIs greater than 1.5. For the highest abundance tier, the highest observed CPUE was paired with the highest AI during 2001-2015. The second tier added was for an AI = 1.80, approximately centered between an AI of 1.5 and 2.2.

5. The catch ceiling for tiers 2 through 6 was calculated by first determining the midpoint of the corresponding AI-based tier as shown in paragraph 6. The AI corresponding to the seventh tier was set to 2.2, the largest first post-season AI observed during 2001-2015 (an AI of 2.2 in 2014). The catch ceiling for tiers 2 through 7 was then determined from the catch corresponding to the midpoint of the AI-based tier of Table 1 in the 2009 Agreement. The Commission shall determine, as needed, the catch ceiling in the lowest abundance tier during conditions of extremely low abundance.

6. The following table shows the correspondence between the CPUE-based tier, AI-based tier and midpoint, and corresponding catch ceilings from Table 1 in the 2009 Agreement.

Tier	CPUE-based tier	AI-based tier	Midpoint of AI-based tier	Catch Ceiling
1	Less than 2.0	Less than 0.875	-	Commission Determination
2	2.0 to less than 2.6	Between 0.875 and 1.0	0.94	120,900
3	2.6 to less than 3.8	Between 1.005 and 1.2	1.10	151,700
4	3.8 to less than 6.0	Between 1.205 and 1.5	1.35	221,800
5	6.0 to less than 8.7	Between 1.505 and 1.8	1.65	288,200
6	8.7 to less than 20.5	Between 1.805 and 2.2	2.00	345,700
7	20.5 and greater	Greater than 2.2	2.20	378,600

7. The resultant CPUE-based catch ceilings in paragraph 6 were then reduced by 7.5% for AI values less than or equal to 1.8, 3.25% for AI values greater than 1.8 but less than or equal to 2.2, and 1.5% for AI values greater than 2.2. The CPUE-based tier, AI-based tier and midpoint, and the corresponding final catch ceilings are shown in the following table.

Tier	CPUE-based tier	AI-based tier	Midpoint of AI-based tier	Catch Ceiling
1	Less than 2.0	Less than 0.875	-	Commission Determination
2	2.0 to less than 2.6	Between 0.875 and 1.0	0.94	111,833
3	2.6 to less than 3.8	Between 1.005 and 1.2	1.10	140,323
4	3.8 to less than 6.0	Between 1.205 and 1.5	1.35	205,165
5	6.0 to less than 8.7	Between 1.505 and 1.8	1.65	266,585
6	8.7 to less than 20.5	Between 1.805 and 2.2	2.00	334,465
7	20.5 and greater	Greater than 2.2	2.20	372,921

Appendix C to Annex IV, Chapter 3: Relationships between AIs, Catches and HRIs¹³

Southeast Alaska All Gear	North BC Troll & QCI Sport	WCVI Troll & Outside Sport
Proportionality Constant (PC) = 12.38 Harvest Rate Index (HRI) = $\text{EXP}(\text{LN}(\text{Troll Catch} / \text{AI}) - \text{PC})$ Troll Catch = $(\text{Total Catch} - \text{Net Catch}) * 0.8$ $= \text{EXP}(\text{PC} + \text{LN}(\text{HRI} * \text{AI}))$ Total Catch = $\text{Net Catch} + \text{Troll Catch} / 0.8$	Proportionality Constant (PC) = 11.83 Harvest Rate Index = $\text{EXP}(\text{LN}(\text{Troll Catch} / \text{AI}) - \text{PC})$ Troll Catch = $\text{Total Catch} * 0.8 = \text{EXP}(\text{PC} + \text{LN}(\text{HRI} * \text{AI}))$ Total Catch = $\text{Troll Catch} / 0.8$	Proportionality Constant (PC) = 13.10 Harvest Rate Index = $\text{EXP}(\text{LN}(\text{Troll Catch} / \text{AI}) - \text{PC})$ Troll Catch = $\text{Total Catch} * 0.8 = \text{EXP}(\text{PC} + \text{LN}(\text{HRI} * \text{AI}))$ Total Catch = $\text{Troll Catch} / 0.80$
<u>Reduction in Total Catch from 2009 Agreement:</u> AIs less than 1.805 - 7.5%, Net Catch = 15,725 AIs between 1.805 and 2.2 - 3.25%, Net Catch = 16,448 AIs greater than 2.2 - 1.5%, Net Catch = 16,745	<u>Reduction in Total Catch from 2009 Agreement: 0%</u>	<u>Reduction in Total Catch from 2009 Agreement:</u> AIs less than 0.93 - 12.5% AIs between 0.93 and 1.12 - 4.8% AIs greater than 1.12 - 2.4%
<u>For AIs less than 1.005</u> Total Catch = $15,725 + 102,213 * \text{AI}$ Troll Catch = $(102,213 * \text{AI}) * 0.8$ HRI = 0.344	<u>For AIs less than 1.205</u> Total Catch = $130,000 * \text{AI}$ Troll Catch = $(130,000 * \text{AI}) * 0.8$ HRI = 0.757	<u>For AIs less than 0.5</u> Total Catch = $112,304 * \text{AI}$ Troll Catch = $(112,304 * \text{AI}) * 0.8$ HRI = 0.184
<u>For AIs between 1.005 and 1.2</u> Total Catch = $-106,144 + 224,081 * \text{AI}$	<u>For AIs between 1.205 and 1.5</u> Total Catch = $-20,000 + 146,667 * \text{AI}$	<u>For AIs between 0.5 and 0.925</u> Total Catch = $131,021 * \text{AI}$

¹³ If alternative harvest rate metrics are adopted in any of the AABM fisheries the proportionality constants in the affected fisheries shall be recalculated, and the associated HRI values in this Appendix shall be adjusted. However, the formulas to estimate total catch in this Appendix and the catches in Table 1 shall remain unaffected.

Troll Catch = $(-121,869 + 224,081 * AI) * 0.8$
HRI increasing from 0.346 to 0.412

For AIs between 1.205 and 1.5

Total Catch = $15,725 + 140,342 * AI$
Troll Catch = $(140,342 * AI) * 0.8$
HRI = 0.472

For AIs between 1.505 and 1.8

Total Catch = $15,725 + 152,037 * AI$
Troll Catch = $(152,037 * AI) * 0.8$
HRI = 0.511

For AIs between 1.805 and 2.2

Total Catch = $16,448 + 159,023 * AI$
Troll Catch = $(159,023 * AI) * 0.8$
HRI = 0.535

For AIs greater than 2.2

Total Catch = $16,745 + 161,899 * AI$
Troll Catch = $(161,899 * AI) * 0.8$
HRI = 0.544

Troll Catch = $(-20,000 + 146,667 * AI) * 0.8$
HRI increasing from 0.757 to 0.777

For AIs greater than 1.5

Total Catch = $145,892 * AI$
Troll Catch = $(145,892 * AI) * 0.8$
HRI = 0.85

Troll Catch = $(131,021 * AI) * 0.8$
HRI = 0.214

For AIs between 0.93 and 1.0

Total Catch = $142,551 * AI$
Troll Catch = $(142,551 * AI) * 0.8$
HRI = 0.233

For AIs between 1.005 and 1.12

Total Catch = $162,916 * AI$
Troll Catch = $(162,916 * AI) * 0.8$
HRI = 0.267

For AIs greater than 1.12

Total Catch = $167,023 * AI$
Troll Catch = $(167,023 * AI) * 0.8$
HRI = 0.273

Attachment I: Indicator stocks, ISBM fishery limits, and management objectives applicable to obligations specified in paragraphs 1, 5, 6, and 7

Stock Region	Escapement Indicator Stock (CWT Indicator Stock⁸)	Canadian ISBM CYER Limit	US ISBM CYER Limit	Management Objective
SEAK/ TBR	Situk ¹ (TBD)	NA	NA	500-1,000
	Alsek ^{1,2} (TBD)	NA	NA	3,500-5,300
	Taku ^{1,2} (TAK)	NA	NA	19,000-36,000
	Chilkat ¹ (CHK)	NA	NA	1,750-3,500
	Stikine ^{1,2} (STI)	NA	NA	14,000-28,000
	Unuk ¹ (UNU)	NA	NA	1,800-3,800
BC	Skeena (KLM)	100% avg 09-15	NA ³	TBD ⁶
	Atnarko (ATN)	100% avg 09-15	NA ³	5,009 ^{4,5}
	NWVI Natural Aggregate (Colonial-Cayeagle, Tashish, Artlish, Kaouk) (RBT adj)	95% avg 09-15	NA ³	TBD ⁶
	SWVI Natural Aggregate (Bedwell-Ursus, Megin, Moyeha) (RBT adj)	95% avg 09-15	NA ³	TBD ⁶
	East Vancouver Island North (TBD) (QUI adj)	95% avg 09-15	NA ³	TBD ⁶
	Phillips (PHI)	100% avg 09-15	NA ³	TBD ⁶
	Cowichan (COW)	95% avg 09-15	95% avg 09-15	6,500
	Nicola (NIC)	95% avg 09-15	95% avg 09-15	TBD ⁶
	Chilcotin (in development)	95% avg 09-15	NA ³	TBD ⁶
	Chilko (CKO in development)	95% avg 09-15	NA ³	TBD ⁶
	Lower Shuswap (SHU)	100% avg 09-15	NA ³	12,300 ⁴
	Harrison (HAR)	95% avg 09-15	95% avg 09-15	75,100

	Canadian Okanagan (SUM adj) ⁹	NA ³	TBD	TBD ⁶
WA/ OR/ID	Nooksack Spring (NSF)	87.5% avg 09-15	100% avg 09-15	TBD ⁶
	Skagit Spring (SKF)	87.5% avg 09-15	95% avg 09-15	690 ⁴
	Skagit Summer/Fall (SSF)	87.5% avg 09-15	95% avg 09-15	9,202 ⁴
	Stillaguamish (STL)	87.5% avg 09-15	100% avg 09-15	TBD ⁶
	Snohomish (SKY)	87.5% avg 09-15	100% avg 09-15	TBD ⁶
	Hoko (HOK)	NA ³	10% CYER ⁷	TBD ⁶
	Grays Harbor Fall (QUE adj)	NA ³	85% avg 09-15	13,326
	Queets Fall (QUE)	NA ³	85% avg 09-15	2,500
	Quillayute Fall (QUE adj)	NA ³	85% avg 09-15	3,000
	Hoh Fall (QUE adj)	NA ³	85% avg 09-15	1,200
	Upriver Brights (HAN, URB)	NA ³	85% avg 09-15	40,000
	Lewis (LRW)	NA ³	85% avg 09-15	5,700
	Coweeman (CWF)	NA ³	100% avg 09-15	TBD ⁶
	Mid-Columbia Summers (SUM)	NA ³	85% avg 09-15	12,143
	Nehalem (SRH adj)	NA ³	85% avg 09-15	6,989
	Siletz (SRH adj)	NA ³	85% avg 09-15	2,944
	Siuslaw (SRH adj)	NA ³	85% avg 09-15	12,925
	South Umpqua (ELK adj)	NA ³	85% avg 09-15	TBD ⁶

Coquille (ELK adj)

NA³

85% avg 09-15

TBD⁶

-
- ¹ Identified for management of SEAK fisheries in paragraph 6(b)(iv).
 - ² Stock-specific harvest limits specified in Chapter 1 of this Treaty.
 - ³ Not Applicable since less than 15% of the recent total mortality was in these fisheries.
 - ⁴ Agency escapement goal has the same status as CTC agreed escapement goal for implementation of this Chapter.
 - ⁵ Natural origin spawners.
 - ⁶ To be determined after CTC review specified in paragraph 2(b)(iv) of this Chapter.
 - ⁷ ISBM limit set at 10% in recognition of closure of the Hoko River to Chinook salmon fishing in 2009-2015.
 - ⁸ CWT indicator stocks and fishery adjustments described in TCCHINOOK (16)-2.
 - ⁹ Pending the review specified in paragraph 5(b) of this Chapter and a subsequent Commission decision.