

CHAPTER 1

Transboundary Rivers

This Chapter shall apply to the period from 2019 through 2028 (“Chapter Period”). Subject to the availability of funds, the United States (U.S.) shall make \$2.4 million dollars available on an annual basis to U.S. management agencies for the specific purposes identified in this Chapter. Every year, Canada is responsible for adequately resourcing implementation of its responsibilities as specified in this Chapter within this Chapter Period.

1. Recognizing the desirability of accurately determining exploitation rates and spawning escapement requirements of salmon originating in the Canadian portions of transboundary rivers, the Parties shall maintain a joint Transboundary Technical Committee (the “Committee”) that is composed of their respective representatives. The Committee shall report, unless the Parties otherwise decide, to the Transboundary Panel (the “Panel”) and to the Commission. The Committee shall operate in a bilateral manner and provide all reports and recommendations to the Panel and to the Commission. If the Committee is unable to reach a decision, it shall refer the matter to the Panel or Commission, with supporting information, for decision. The Committee shall, *inter alia*:

- (a) assemble and refine available information on migratory patterns, extent of exploitation, and spawning escapement requirements of the stocks. It is paramount that the Parties are transparent and share available information;
- (b) examine past and current management regimes and recommend how they may be better suited to achieving escapement goals;

- (c) identify existing and future enhancement projects that:
 - (i) assist the devising of harvest management strategies to increase benefits to fishermen with a view to permitting additional salmon to return to Canadian waters,
 - (ii) have an impact on natural transboundary rivers salmon production;
- (d) review, develop, design, implement, report on, and explore expanded joint U.S. / Canada salmon assessment programs for Stikine, Taku, and Alsek River salmon stocks;
- (e) work cooperatively and share available information in order to develop bilaterally agreed-to in-season salmon abundance estimates based on the best available information;
- (f) provide the Panel by February 1 of each year for Canadian-origin Stikine, Taku, and Alsek River salmon stocks the following information:
 - (i) number of salmon harvested in U.S. and Canadian fisheries in the preceding season,
 - (ii) estimated spawning escapement for the preceding season,
 - (iii) post-season run reconstruction for the preceding season,
 - (iv) pre-season forecasts of abundance for the upcoming season,
 - (v) assessment programs to determine in-season run abundance or escapement estimates for the upcoming season;

- (g) ensure that an exchange of information required to complete post-season run reconstruction of transboundary salmon stocks occurs by December 1 of each year;
- (h) complete joint stock assessment and fishery management plans by April 15 of each year that include a list of escapement objectives bilaterally approved by the Parties for Canadian-origin salmon stocks in the Stikine, Taku, and Alsek Rivers.

2. The Parties intend to improve procedures for coordinated and cooperative management. To this end, the Parties affirm their intent to continue to implement and refine abundance-based management regimes for Chinook salmon in the Taku and Stikine Rivers, sockeye salmon in the Taku and Stikine Rivers, and coho salmon in the Taku River. Further, the Parties affirm their intent to continue to develop and implement abundance-based management regimes for Chinook and sockeye salmon in the Alsek River and coho salmon in the Stikine River. Both Parties shall take the appropriate management actions to ensure that the necessary escapement objectives defined in the annual management plan are achieved.

- (a) To determine in-season abundance of salmon stocks, assessment fisheries may be implemented as a component of any bilateral U.S. / Canada assessment program. The Parties shall complete the accounting of the harvest in assessment fisheries as follows:
 - (i) Any expected salmon mortality shall be accounted for prior to the determination of the Total Allowable Catch (TAC) for assessment fisheries undertaken as recommended by the Committee and endorsed by the Panel,

- (ii) Any salmon mortality of target species shall not count towards either Parties' Allowable Catch (AC) for assessment fisheries undertaken as recommended by the Committee and endorsed by the Panel,
- (iii) The non-target species of salmon captured and retained shall not be included in determination of TAC or either Parties AC for assessment fisheries undertaken as recommended by the Committee and endorsed by the Panel,
- (iv) Salmon captured and retained in an assessment fishery undertaken in absence of a recommendation from the Committee and endorsement from the Panel shall be considered as directed harvest and count towards a Party's AC.

3. Recognizing the objectives of each Party to have viable fisheries, the Parties agree that the following arrangements shall apply to the U.S. and Canadian fisheries harvesting salmon stocks originating in the Canadian portion of:

- (a) the Stikine River:
 - (i) Sockeye Salmon: the following provisions apply to U.S. in-river, subsistence, and District 106 and 108 drift gillnet fisheries, and Canadian in-river fisheries:
 - (A) The Parties shall assess the annual run of Stikine River sockeye salmon as follows:

- (i) the Committee shall produce a pre-season forecast of the Stikine River sockeye salmon run prior to February 1 of each year. The Committee may modify this forecast prior to the opening of the fishing season;
- (ii) in-season estimates of the Stikine River sockeye salmon run and the TAC shall be made under the guidelines of the annual management plan, using a forecast model developed by the Committee. Both U.S. and Canadian fishing patterns shall be based on current weekly estimates of the TAC. At the beginning of the season and up to an approved date, the weekly estimates of the TAC shall be determined from the pre-season forecast of the run strength. After that date, the TAC shall be determined from the in-season forecast model;
- (iii) modifications to the annual management plan and forecast model may be made prior to June 1 of each year upon approval of the Parties. If the Parties are unable to approve modifications, the model and parameters applied the previous year shall be used;
- (iv) estimates of the TAC may be adjusted in-season only by concurrence of both Parties' respective managers. Reasons for the adjustments shall be provided to the Committee.

- (B) The Parties desire to maximize the harvest of Tahltan Lake, Tuya Lake and other enhanced sockeye salmon in their existing fisheries, while considering the conservation needs of wild salmon runs. The Parties shall manage the returns of Stikine River sockeye salmon to ensure that each country obtains 50% of the TAC in their existing fisheries. Canada shall endeavour to harvest all of the fish surplus to escapement objectives and broodstock needs returning to the Stikine River as defined in the annual management plan.

- (C) The Parties shall continue to develop and implement joint enhancement programs:
 - (i) The Committee shall prepare an annual Stikine Enhancement Production Plan (SEPP), designed to produce 100,000 returning sockeye salmon per year by February 1. The SEPP shall summarize planned projects for the coming year and expected production of identifiable enhanced sockeye salmon from all planned enhancement activities, including expected production from site specific egg takes and fry releases, access improvements, and all other enhancement activities outlined in the annual SEPP. The Committee shall use these data to prepare an enhancement production forecast based on the best available information.

- (ii) The Panel shall review the annual SEPP and make recommendations to the Parties concerning the SEPP by February 28.
- (iii) The Committee shall annually review and document joint enhancement projects and activities undertaken by the Parties, including returns, and present the results to the Panel during the annual post-season review.
- (iv) The Parties' performance relative to a SEPP shall be evaluated by the Panel two years after adoption of that SEPP.
- (v) An annual SEPP becomes final upon the Panel's approval two years after its initial adoption.
- (vi) The Parties affirm their intent to renew or develop new enhancement projects (comparable to the Tuya Lake enhancement project) in the Stikine River drainage, as identified in the SEPP, designed to annually produce 100,000 returning sockeye salmon by 2024.
- (vii) Harvest shares shall be 53% U.S. / 47% Canada from 2019 through 2023. If the final 2017 or 2018 SEPP provides an expected production of 100,000 returning sockeye salmon, the harvest shares shall be 50% U.S. / 50% Canada in 2022 or 2023.

- (viii) Beginning with the final 2019 SEPP and subsequent years, if expected production is 100,000 returning sockeye salmon, the harvest shares three years later shall be 50% U.S. / 50% Canada. Otherwise, the harvest share for the Party that failed to implement enhancement projects designed to annually produce 100,000 returning sockeye salmon shall be reduced by 7.5% and reallocated to the other Party.
 - (ix) If either Party fully terminates or does not continue its participation in the joint enhancement program, that Party's harvest share shall be reduced to 35%, and the harvest share adjustment shall be reallocated to the other Party for the subsequent fishing season(s).
- (D) Harvest of sockeye salmon in the Stikine River U.S. subsistence fishery shall be managed as a component of the U.S. directed fishery for Stikine River sockeye salmon. All sockeye salmon harvested in the U.S. Stikine River subsistence fishery shall count towards the U.S. AC.

- (ii) Coho salmon: the following provisions apply to U.S. in-river, subsistence, and Districts 106 and 108 drift gillnet fisheries, and Canadian in-river fisheries:
 - (A) The Parties shall develop and implement an abundance-based approach to managing coho salmon on the Stikine River. Assessment programs need to be further developed before a biologically based escapement goal can be established. By 2024, the Parties shall review the progress on this obligation.
 - (B) In the interim, the U.S. management intent is to ensure that sufficient coho salmon enter the Canadian section of the Stikine River to meet the agreed spawning objective, plus an annual Canadian catch of 5,000 coho salmon in a directed coho salmon fishery.
 - (i) The catch limit of 5,000 coho salmon for the Canadian fishery in the Stikine River may be exceeded provided that in-season run assessments indicate that salmon passage into Canada exceeds or is projected to exceed the specified 5,000 fish Canadian harvest limit plus the agreed spawning objective.

- (C) Harvest of coho salmon in the Stikine River U.S. subsistence fishery shall be managed as a component of the U.S. directed fishery for Stikine River coho salmon. All coho salmon harvested in the U.S. Stikine River subsistence fishery shall count towards the U.S. AC.

- (iii) Chinook salmon: the following provisions apply to Chinook salmon that originate from the Canadian portion of the Stikine River (“Stikine River Chinook”) with a mid-eye to fork length of 660 mm or greater (“large”):
 - (A) Both Parties shall take the appropriate management actions to ensure that the escapement objectives for Chinook salmon bound for the Canadian portion of the Stikine River are achieved. The Parties agree to share the responsibility for conservation. Fishing arrangements must take biodiversity and eco-system requirements into account.
 - (B) Consistent with paragraph 2, management of directed fisheries shall be abundance-based through an approach developed by the Committee. The Parties shall implement assessment programs in support of the abundance-based management regime.
 - (C) Unless otherwise approved by the Parties , directed fisheries on Stikine River Chinook salmon shall occur only in the Stikine River drainage in Canada and in District 108 in the U.S.

- (D) Harvest of Chinook salmon in the Stikine River U.S. subsistence fishery shall be managed as a component of the U.S. directed fishery for Stikine River Chinook salmon. All Chinook salmon harvested in the U.S. Stikine River subsistence fishery shall count towards the U.S. AC.
- (E) Management of Stikine River Chinook salmon shall take into account the conservation of specific stocks or conservation units when planning and prosecuting the Parties' respective fisheries. To avoid over-harvesting of specific components of the run, the Committee shall develop weekly harvest guidelines or other management measures by apportioning the allowable harvest of each Party over the Chinook salmon run based on historical weekly run timing.
- (F) The Parties reaffirm their interest in continued monitoring of Little Tahltan River Chinook salmon to investigate factors that may be influencing productivity and long-term health.
- (G) The Parties shall implement, through the Committee, a Chinook salmon genetic stock identification (GSI) program approved by the Parties to assist the management of Stikine River Chinook salmon. The Parties agree to continue the development of joint GSI baselines.

- (H) The Parties shall periodically review the above-border Stikine River Chinook salmon spawning escapement goal that is expressed in terms of large fish.
- (I) The Committee shall produce a pre-season forecast of the Stikine River Chinook salmon terminal run¹ size by December 1 of each year.
- (J) Directed fisheries may be implemented based on pre-season forecasts only if the pre-season forecast terminal run size equals or exceeds the spawning objective as defined in the annual management plan in addition to the combined Canada and U.S. base level catches (BLCs) and assessment fishery catches of Stikine River Chinook salmon. The pre-season forecast shall only be used for management until bilaterally approved in-season projections become available.

¹ Terminal run = total Stikine Chinook run size minus the U.S. troll catch of Stikine Chinook salmon outside of District 108.

- (K) For the purposes of determining whether to allow directed fisheries using in-season information, such fisheries shall not be implemented unless the projected terminal run size exceeds the spawning objective as defined in the annual management plan in addition to the combined Canada and U.S. BLCs and assessment fishery catches of Stikine River Chinook salmon. The Committee shall determine when in-season projections can be used for management purposes and establish the methodology for in-season projections and update them weekly or at other approved intervals.
- (L) The Total Allowable Catch (TAC) for directed fisheries shall be calculated as follows:
- (i) Base Terminal Run (BTR) = Spawning Objective
+ Assessment Fishery + U.S. BLC + Canadian BLC;
 - (ii) Terminal Run – BTR = TAC.
- (M) Definitions include the following:
- (i) U.S. BLC: 3,400 large Chinook salmon²;
 - (ii) Canadian BLC: 2,300 large Chinook salmon³;

² Includes average combined U.S. gillnet, troll and sport catches of Stikine Chinook salmon in District 108.

³ Includes average combined Canadian Aboriginal, commercial, and sport catches of Stikine Chinook salmon.

- (iii) Assessment fishery: up to 1,400 large Chinook salmon.
- (N) Harvest sharing and accounting of the TAC shall be as follows:
 - (i) 50% is allocated to the U.S.;
 - (ii) 50% is allocated to Canada;
 - (iii) If the pre-season TAC forecast exceeds 30,000 Chinook salmon, the Panel shall review and recommend potential harvest share adjustments to the Parties.
- (O) With consideration for the Southeast Alaska (SEAK) Chinook salmon terminal exclusion and provisions of Chapter 3, U.S. harvest of Stikine River Chinook salmon up to 3,400 fish and non-Stikine River Chinook salmon harvested in District 108 will be accounted for in Chapter 3.
- (P) The Parties shall determine the domestic allocation of their respective harvest shares.

- (Q) When the terminal run is insufficient to provide for the Parties' Stikine River Chinook salmon BLC and the lower end of the escapement goal range, the reductions in each Party's base level fisheries, i.e. the fisheries that contributed to the BLCs, shall be proportional to the Stikine BLC shares. In this situation, the Committee may recommend details for an alternate assessment program. Following the Panel's approval, an assessment fishery may be implemented which fully considers the conservation needs of the stock.

- (R) If the escapement of Stikine River Chinook salmon is below the lower end of the agreed escapement goal range for three consecutive years, the Parties shall examine the management of base level fisheries and of any other fishery that harvests Stikine River Chinook salmon stocks, with a view to rebuilding the escapement.

(b) the Taku River:

- (i) Sockeye salmon: the following provisions apply to the U.S. District 111 drift gillnet fishery and to Canadian in-river fisheries. Directed fisheries on Taku River sockeye salmon will occur only in the Taku River drainage in Canada and in District 111 in the U.S.:

- (A) Annual abundance of wild Taku River sockeye salmon shall be estimated by adding the catch of wild Taku River sockeye salmon in U.S. District 111 to the estimated above-border abundance of wild sockeye salmon. The annual TAC of wild Taku River sockeye salmon shall be estimated by subtracting the agreed escapement objective as defined in the annual management plan from the annual terminal run abundance estimate.
- (B) The Parties shall develop a joint technical report and submit it through the Parties' respective review mechanisms with the aim of establishing a bilaterally approved maximum sustainable yield (MSY) goal for Taku River sockeye salmon prior to the 2020 fishing season.
- (C) The Taku River sockeye salmon assessment program will be reviewed by two experts (one selected by each Party) in mark-recovery estimation techniques. The Parties shall instruct these experts to make a joint recommendation to the Parties concerning improvements to the existing program including how to address inherent mark-recovery assumptions with an aim to minimize potential bias prior to the 2020 fishing season.
- (D) The management of U.S. and Canadian fisheries shall be based on weekly estimates of the TAC of wild sockeye salmon.

- (E) For in-season management purposes, identifiable enhanced Taku River origin sockeye salmon shall not be included in the calculations of the annual TAC. Enhanced sockeye salmon are harvested in existing fisheries incidentally to the harvest of wild Taku River sockeye salmon.
- (F) The Parties' primary management objective is to achieve the agreed spawning objective as defined in the annual management plan. As a result, the following apply:
 - (i) To the end of 2019, Canada may, in addition to its share of the TAC, harvest any projected sockeye salmon escapement in excess of 80,000 fish apportioned by run timing.
 - (ii) For the remainder of the Chapter Period beyond 2019, the Parties shall manage fisheries in accordance with spawning objectives and the resulting ACs unless otherwise indicated in sub-subparagraph (iii).
 - (iii) Upon acceptance of a revised Taku River sockeye salmon escapement goal by the Parties and upon adoption by the Committee of recommendations from the experts as deemed critical by the Panel, Canada may, in addition to its share of the TAC, harvest any projected sockeye salmon in excess of spawning objectives and broodstock needs apportioned by run timing returning to the Taku River.

- (iv) In absence of establishing a bilaterally approved MSY escapement goal for Taku River sockeye salmon prior to the 2020 fishing season, the Panel shall recommend an interim spawning objective.
- (G) Notwithstanding paragraph (E), the Parties recognize that not all surplus enhanced sockeye salmon are harvested in existing commercial fisheries due to management actions required to ensure the wild spawning escapement. Canada may implement additional fisheries upstream of the existing commercial fishery to harvest surplus enhanced sockeye salmon.
- (H) The Parties agree to the objective of increasing sockeye salmon runs in the Taku River. The United States long-term objective is to maintain the 82% U.S. harvest share of wild Taku River sockeye salmon only adjusted based on documented enhanced sockeye salmon returns. Canada's long-term objective is to achieve an equal sharing arrangement for sockeye salmon. The Parties shall continue to develop and implement a joint Taku River sockeye salmon enhancement program intended to eventually annually produce 100,000 returning enhanced sockeye salmon.

- (I) The Parties annual TAC share of Taku River sockeye salmon shall be as follows:

| Enhanced Production | U.S. TAC Share | Canadian TAC Share |
|---------------------|----------------|--------------------|
| 0 | 82% | 18% |
| 1 – 5,000 | 80% | 20% |
| 5,001 – 15,000 | 77% | 23% |
| 15,001 – 25,000 | 75% | 25% |
| 25,001 – 50,000 | 72% | 28% |
| 50,001 – 75,000 | 68% | 32% |
| 75,001 – 100,000+ | 65% | 35% |

The Parties' performance relative to these TAC shares shall be based on the post-season analysis of documented production of enhanced sockeye salmon.

- (J) The Committee shall prepare an annual Taku Enhancement Production Plan (TEPP) by February 1. The TEPP will detail the planned enhancement activities to be undertaken by the Parties and the expected production from site-specific egg takes and fry releases, access improvements and all other enhancement activities outlined in the annual TEPP. The Committee shall use these data to prepare an initial enhancement production forecast based on the best available information.
- (K) The Panel shall review the annual TEPP and make recommendations to the Parties concerning the TEPP by February 28.

- (L) The Committee shall annually review and document joint enhancement projects and activities undertaken by the Parties, including the estimated returns of identifiable and unidentifiable enhanced sockeye salmon, and present the results to the Panel during the annual post-season review.
- (ii) Coho salmon: the following provisions apply to the U.S. District 111 drift gillnet fishery and the Canadian in-river fisheries:
 - (A) The Parties agree to implement an abundance-based approach to managing coho salmon on the Taku River.
 - (B) The following applies to the management and allocation of terminal run Canadian-origin Taku River coho salmon:
 - (i) the calculation of terminal abundance shall include harvest prior to statistical week 34;

- (ii) the following applies to the assessment of the terminal run of Taku River coho salmon after accounting for the harvest prior to statistical week 34:
 - (1) If the pre-season terminal abundance forecast is less than the lower end of the escapement goal range plus 5,000 fish, the Committee may recommend an alternate assessment program. Following the Panel's approval, an assessment fishery may be implemented which fully considers the conservation needs of the stock.
 - (2) When the terminal abundance exceeds the lower end of the escapement goal range, plus 5,000 coho salmon, and up to the MSY point goal plus 5,000 fish, Canada may harvest 5,000 coho salmon apportioned by bilaterally approved run timing;

(iii) The Parties’ annual terminal and in-river TAC share of Taku River coho salmon shall be as follows:

(1) For terminal abundances in excess of 75,000 coho salmon, AC accumulates as follows:

| Terminal Run Size | | Allowable Catch Range | | Harvest Share | |
|----------------------|---------|-----------------------|--------|---------------|--------|
| Lower | Upper | Lower | Upper | U.S. | Canada |
| 75,001 | 80,000 | 1 | 5,000 | 100% | 0% |
| 80,001 | 100,000 | 5,001 | 25,000 | 50% | 50% |
| Greater than 100,000 | | 25,001+ | | 90% | 10% |

Note: the harvest shares associated with the above terminal run sizes are based on an escapement goal range of 50,000 to 90,000 coho salmon with an MSY Point goal of 70,000 fish.

(iv) The Parties’ primary management objective is to achieve the agreed spawning escapement goal. If the projected spawning escapement of Canadian-origin Taku River coho salmon is greater than the agreed spawning escapement point goal, Canada may, in addition to its AC, harvest the projected surplus to spawning escapement apportioned by run timing.

- (v) The performance of coho salmon fisheries shall be evaluated on an annual basis as follows:
 - (1) no new directed terminal or in-river fisheries for Taku River coho salmon shall be undertaken prior to statistical week 34;
 - (2) coho salmon harvested incidentally in terminal, in-river, and assessment fisheries that occur prior to statistical week 34 are not included in paragraph 4 Trigger 2 considerations;
 - (3) if a Party does not fully harvest its AC to the extent that spawning escapement exceeds the upper end of the spawning escapement goal range in 3 consecutive years, the Panel shall review the Party's harvest and allocation and the factors contributing to fishery performance, and may recommend the adjustment of allocations to terminal or in-river fishery AC for the following year;

- (4) determination of the terminal abundance of Taku River coho salmon shall occur through the administration of a bilateral assessment program. When a mark-recapture program is employed to determine abundance, the program shall be designed to ensure that tag recovery (mark evaluation) is apportioned by run timing.
- (iii) Chinook salmon:
 - (A) the following provisions apply to Chinook salmon that originate from the Canadian portion of the Taku River (“Taku River Chinook”) with a mid-eye to fork length of 660 mm or greater (“large”):
 - (B) Both Parties shall take the appropriate management actions to ensure that the escapement objectives for Chinook salmon bound for the Canadian portion of the Taku River are achieved. The Parties agree to share the responsibility for conservation. Fishing arrangements must take biodiversity and eco-system requirements into account.
 - (C) Consistent with paragraph 2, management of directed fisheries shall be abundance-based through an approach developed by the Committee. The Parties shall implement assessment programs in support of the abundance-based management regime.

- (D) Unless otherwise approved by the Parties, directed fisheries on Taku River Chinook salmon shall occur only in the Taku River drainage in Canada, and in District 111 in the U.S.
- (E) Management of Taku River Chinook salmon shall take into account the conservation of specific stocks or conservation units when planning and prosecuting the Parties' respective fisheries. To avoid over-harvesting of specific components of the run, the Committee shall develop weekly harvest guidelines, or other agreed management measures, by apportioning the allowable harvest of each Party over the Chinook salmon run based on historical weekly run timing.
- (F) The Parties shall implement through the Committee a Chinook salmon genetic stock identification (GSI) program approved by the Parties to assist the management of Taku River Chinook salmon. The Parties agree to continue the development of joint GSI baselines.
- (G) The Parties shall periodically review the above-border Taku River Chinook salmon spawning escapement goal that is expressed in terms of large fish.

- (H) The Committee shall produce a pre-season forecast of the Taku River Chinook salmon terminal run⁴ size by December 1 of each year.
- (I) Directed fisheries may be implemented based on pre-season forecasts only if the pre-season forecast terminal run size equals or exceeds the spawning objective as defined in the annual management plan plus the combined Canada and U.S. base level catches (BLCs) and assessment fishery catches of Taku River Chinook salmon. The pre-season forecast shall only be used for management until bilaterally approved in-season projections become available.
- (J) For the purposes of determining whether to allow directed fisheries using in-season information, such fisheries shall not be implemented unless the projected terminal run size exceeds the spawning objective as defined in the annual management plan in addition to the combined Canada and U.S. BLCs and assessment fishery catches of Taku River Chinook salmon. The Committee shall determine when in-season projections can be used for management purposes and establish the methodology for in-season projections and update them weekly or at other approved intervals.

⁴ Terminal run = total Taku Chinook run size minus the U.S. troll catch of Taku Chinook salmon outside District 111.

- (K) The Total Allowable Catch (TAC) for directed fisheries shall be calculated as follows:
- (i) Base Terminal Run (BTR) = Spawning Objective
+Assessment Fishery + U.S. BLC + Canadian BLC;
 - (ii) Terminal Run – BTR = TAC.
- (L) Definitions include the following:
- (i) U.S. BLC: 3,500 large Chinook salmon⁵;
 - (ii) Canadian BLC: 1,500 large Chinook salmon⁶;
 - (iii) Assessment fishery: up to 1,400 large Chinook salmon.
- (M) Harvest sharing and accounting of the TAC shall be as follows:
- (i) 50% is allocated to the U.S.;
 - (ii) 50% is allocated to Canada;
 - (iii) If the pre-season TAC forecast exceeds 30,000 Chinook salmon, the Panel shall review and recommend potential harvest share adjustments to the Parties.

5 Includes average combined U.S. gillnet and sport catches of Taku Chinook salmon in District 111.

6 Includes average combined Canadian Aboriginal, commercial, and estimated sport catch of Taku Chinook salmon.

- (N) With consideration for the SEAK Chinook salmon terminal exclusion and provisions of Chapter 3, U.S. harvest of Taku River Chinook salmon up to 3,500 fish and non-Taku River Chinook salmon harvested in District 111 will be accounted for in Chapter 3.
- (O) The Parties shall determine the domestic allocation of their respective harvest shares.
- (P) When the terminal run is insufficient to provide for the Parties' Taku River Chinook salmon BLC and the lower end of the escapement goal range, the reductions in each Party's base level fisheries, i.e. the fisheries that contributed to the BLCs, shall be proportional to the Taku BLC shares. In this situation, the Committee may recommend details for an alternate assessment program. Following the Panel's approval, an assessment fishery may be implemented which fully considers the conservation needs of the stock.
- (Q) If the escapement of Taku River Chinook salmon is below the lower end of the agreed escapement range for three consecutive years, the Parties shall examine the management of base level fisheries and of any other fishery that harvests Taku River Chinook salmon stocks, with a view to rebuilding the escapement.

- (c) the Alsek River: The following provisions apply to the U.S. Subdistrict 182-30 commercial and subsistence fisheries and to Canadian in-river fisheries.

The Parties agree to continue to exchange information on Canadian-origin Alsek River salmon stocks to facilitate a complete understanding of life history and productivity of the stocks.

The Parties shall continue to develop and implement cooperative abundance-based management programs for Alsek River salmon, including agreed above-border spawning escapement and management goals for Chinook and sockeye salmon.

During the Chapter Period, either Party may bring proposals to the Panel for new commercial fisheries to harvest Alsek River drainage salmon. The Party making such a proposal is responsible for defining the specifics of the proposed fishery in terms of location, timing, and gear type to be used. That Party is responsible for recommending a set of fishery management measures for the proposed fishery or fisheries. Implementation of any such fishery shall not proceed without the consent of both Parties and until an approved abundance-based management regime has been developed.

- (i) Chinook salmon:

- (A) on an annual basis, weekly tissue samples shall be collected from incidentally caught Chinook salmon in the Dry Bay commercial fishery in addition to the normal sampling program;

(B) on an annual basis, the Committee shall produce an in-river abundance estimate of Alsek River Chinook salmon. The Parties shall maintain, through the Committee, a Chinook genetic stock identification (GSI) program approved by the Parties to assist the management of Alsek River Chinook salmon. The Parties agree to continue the development of joint GSI baselines.

(ii) Sockeye salmon:

(A) on an annual basis, the Committee shall refine and implement in-season abundance-based management. The Parties shall endeavour to continue to explore methods for determining in-river abundance (such as GSI);

(B) on an annual basis, weekly tissue samples shall be collected from the Dry Bay commercial fishery in addition to the normal sampling program;

- (C) the interim management intent of the U.S. is to pass sufficient sockeye salmon into Canada to achieve the agreed Klukshu River spawning escapement goal range plus 3,000 sockeye salmon.
 - (i) If the MSY point goal plus 3,000 sockeye salmon is not achieved for three of five consecutive years, the U.S. shall examine the management of their fisheries and shall take corrective action to ensure future catches are in line with this Treaty.
- (D) the U.S. shall manage fisheries with the intent of providing improved Canadian access to early season Alsek River stocks by enabling a greater proportion of sockeye salmon to pass upstream of the international border up to and including statistical week 27.

4. The Parties agree to manage their fisheries to the best of their abilities and to achieve approved spawning objectives and harvest sharing provisions of this Chapter. On an annual basis, the Committee shall review the performance of the fisheries, including the ability to meet spawning objectives and the relationship between actual harvests versus TAC allocations, and present the results to the Panel. The Committee shall develop these assessments based on bilaterally approved post-season run reconstructions:

- (a) (Trigger 1) Deviations from target escapements and harvests are anticipated to occur as a result of imprecision in management, pre-season forecast errors, in-season run projection errors, and other factors such as environmental conditions. Notwithstanding annual review and subsequent modification to address conservation concerns, the Parties shall review the overall management regime and recommend adjustments commencing the following year to better address conservation requirements if the lower end of agreed escapement goal ranges in three consecutive years is not achieved.
- (b) (Trigger 2) If in any three of five consecutive years either Party exceeds its allocation by more than 10% or if post-season it is determined there is no allocation and directed harvest is more than 1% of the point goal, that Party shall take corrective action to ensure future catches are in line with this Treaty commencing the following year. By the end of the Annual meeting of the Panel, proposals regarding what actions shall be taken and the expected outcomes thereof shall be discussed with the other Party prior to implementation.

(c) (Trigger 3) The Parties agree that if the TAC of one Party is not attained due to management actions by the other, compensatory adjustments shall be made in subsequent years. If a shortfall in the actual catch of a Party is caused by management action of that Party, no compensation shall be made. At the beginning and mid-point in the Chapter Period, the Parties agree that the harvest sharing performance over the previous five years shall be evaluated and adjustments made over the next five year period, if necessary. At the end of the Chapter period, cumulative overages and underages shall be carried forward to the next Chapter Period.

5. The Parties shall review midway through the Chapter Period, or other time mutually decided by the Parties, the current Chapter and determine if they want to renew this Chapter for an additional period of time.

6. The Parties shall consider cooperative enhancement possibilities and undertake , as soon as possible, studies on the feasibility of new enhancement projects on the Stikine and Taku rivers and adjacent areas for the purpose of increasing productivity of salmon stocks and providing greater harvests to the fishermen of Canada and the U.S.

7. Recognizing that stocks of salmon originating in Canadian sections of the Columbia River constitute a small portion of the total populations of Columbia River salmon, and that the arrangements for consultation and recommendation of escapement targets and approval of enhancement activities set out in Article VII are not appropriate to Columbia River system as a whole, the Parties consider it important to ensure effective conservation of up-river stocks which extend into Canada and to explore the development of mutually beneficial enhancement activities. Therefore, notwithstanding Article VII, paragraphs 2, 3, and 4, the Parties shall consult with a view to developing, for the transboundary sections of the Columbia River, a more practicable arrangement for consultation and setting escapement targets than those specified in Article VII, paragraphs 2 and 3. Any such arrangement is intended to *inter alia*:

- (a) ensure effective conservation of the stocks;
- (b) facilitate future enhancement of the stocks as jointly approved by the Parties;
- (c) avoid interference with United States management programs on the salmon stocks existing in the non-transboundary tributaries and the main stem of the Columbia River.

**Appendix to Annex IV, Chapter 1: Understanding on the Joint
Enhancement of Transboundary River Sockeye Stocks**

Pursuant to Annex IV of the Pacific Salmon Treaty, and recognizing the desire of Canada and the United States to continue a joint enhancement program for the transboundary rivers that is carefully planned and coordinated:

1. The Parties agree to:
 - (a) implement an enhancement program that is consistent with the protection of existing wild salmon stocks and the habitat upon which they depend;
 - (b) implement an enhancement program that is diverse, involves a variety of approaches to increasing production, and builds upon a good knowledge base of existing wild stocks of salmon;
 - (c) implement an enhancement program that includes comprehensive planning, assessment, and review;
 - (d) develop strategies for management of enhanced stocks prior to the return of adult fish;
 - (e) share the costs of jointly approved enhancement projects proportionally to the distribution of benefits, unless external funding can be found. The Parties shall recommend a plan, when required, for funding of projects, including:
 - (i) cost sharing arrangement between the Parties;
 - (ii) long-term funding obligations.

2. The Parties agree to maintain an Enhancement Subcommittee of the joint Transboundary Technical Committee whose Terms of Reference shall be, inter alia, to:

- (a) seek to identify diverse enhancement opportunities and to develop preliminary summaries of projects which may assist in meeting enhancement goals established by Annex IV, Chapter 1 of this Treaty;
- (b) communicate identified enhancement opportunities to the Panel and the Parties along with technical recommendations concerning these opportunities;
- (c) develop detailed feasibility studies for projects recommended by either Party or by the Panel, including:
 - (i) estimation of costs;
 - (ii) estimation of benefits to users and communities;
 - (iii) likelihood of success;
 - (iv) risk analysis;
 - (v) schedules for implementation;
 - (vi) specified timelines and thresholds for major decisions;
 - (vii) procedures for evaluation; and
 - (viii) recommend harvest opportunities of enhanced stocks;
- (d) monitor implementation of ongoing enhancement projects and annually report progress to the Parties and the Panel;
- (e) periodically provide detailed technical reviews pertaining to biological aspects and items listed in paragraph 2(c) of implemented projects as requested by either Party, with the concurrence of the other Party;

- (f) produce an annual Stikine Enhancement Production Plan (SEPP) and a Taku Enhancement Production Plan (TEPP) that detail:
 - (i) enhancement projects and activities to be undertaken by the Parties;
 - (ii) expected enhanced production from those projects and activities; and
 - (iii) assessment techniques that will be used to document enhanced production;
- (g) annually review and document the joint enhancement projects and activities undertaken by the Parties and assess enhanced returns; the Enhancement Subcommittee shall assess the enhancement activities each year against the appropriate SEPP and TEPP and provide explanations for any discrepancies.

3. The Panel shall consider technical input from the Enhancement Subcommittee, in addition to its knowledge of local economic, social, and cultural conditions and values, to communicate recommendations to the Parties concerning enhancement project selection, implementation, assessment and termination.

4. General Guidelines:

- (a) stock identification techniques shall be available to estimate the contribution of enhanced sockeye in mixed stock fisheries in order for large scale enhancement projects to proceed. The Committee shall recommend the most appropriate stock identification techniques for each project;

- (b) egg collection is limited to a maximum of 30% of the system specific escapement (where possible this limit should be applied to the female component of the escapement);
- (c) unless otherwise approved by the Parties, the overall objective is not to exceed a 1:1 ratio of enhanced: wild smolt.

5. the Stikine River:

The Parties shall pursue a diverse program to enhance sockeye salmon production in the Stikine River to meet the annual SEPP goal of 100,000 enhanced sockeye salmon. The existing enhancement program may be expanded to include new activities such as barrier removal, habitat improvement or other approved enhancement projects. The annual egg-take goal for the Stikine sockeye enhancement program reflects what is required to meet the annual enhancement goal taking into account the expected production from all other Stikine sockeye salmon enhancement projects. Eggs are incubated at the Port Snettisham central incubation facility (CIF), unless otherwise approved by the Parties. Fry are released into Tahltan Lake, Tuya Lake or other sites in the following manner, subject to review by the Committee:

- (a) if the count of sockeye salmon through the Tahltan Lake weir is less than 15,000 fish or an alternate threshold approved by the Parties, all Tahltan origin fry will be returned to Tahltan Lake;
- (b) if the count of sockeye salmon through the Tahltan Lake weir is greater than 15,000 fish or an alternate threshold approved by the Parties, subject to paragraph (c), the Tahltan origin fry will be distributed to Tahltan Lake, Tuya Lake or other sites in a manner that is identified in the SEPP;

- (c) egg takes may take place in locations other than at Tahltan Lake; fry outplants may take place in locations other than Tahltan and Tuya lakes.

6. the Taku River:

The Parties shall pursue a diverse Taku sockeye salmon enhancement program intended eventually to meet the annual goal of 100,000 enhanced sockeye salmon. The Parties shall expand the existing enhancement program to include new activities and may include:

- (a) continuation of the Trapper Lake enhancement project;
- (b) other barrier removal projects;
- (c) continuation of the Tatsamenie Lake enhancement efforts;
- (d) other projects focusing on salmon passage and habitat improvement. The Tatsamenie Lake salmon stock is used as a source of eggs unless alternate or additional egg sources are identified and approved by the Parties. The annual egg-take goal for the Taku sockeye salmon enhancement program is defined in the TEPP. Eggs taken as part of this enhancement effort are incubated at the Port Snettisham CIF unless otherwise approved by the Parties. Fry may be released into Tatsamenie Lake, Trapper Lake, or other sites in the Taku drainage, subject to review by the Committee.

7. Harvest principles:

- (a) the Parties desire to maximize the harvest of enhanced sockeye salmon in their existing fisheries while considering the conservation needs of wild salmon stocks;

- (b) to avoid impacts on co-migrating salmon stocks and species, exploitation rates applied to Taku and Stikine river sockeye salmon in existing mixed stock fisheries in Canada and the U.S., shall be at levels compatible with the maintenance of wild stocks and based on returns of identifiable enhanced fish.

8. Cost sharing for the continuation of existing enhancement projects: the costs of producing Taku and Stikine origin enhanced sockeye salmon shall be shared as follows:

- (a) Canada shall pay for:
 - (i) egg takes;
 - (ii) egg transports;
 - (iii) sampling and numerical analysis necessary to determine the contribution of enhanced sockeye salmon to Canadian fisheries;
 - (iv) limnological assessments;
 - (v) processing of sockeye otolith samples collected from spawning escapement, broodstock and juveniles;
- (b) The United States shall pay for:
 - (i) operations and improvements of that portion of the Port Snettisham CIF that is dedicated to enhancement projects on the transboundary rivers;
 - (ii) transports of fry to the enhancement sites;

- (iii) sampling and analysis necessary to determine the contribution of enhanced transboundary river sockeye salmon to United States fisheries; and
 - (iv) processing of all other sockeye otolith samples;
- (c) Projects that are conducted and paid for jointly by the Parties:
 - (i) disease sampling and analysis;
 - (ii) identification and evaluation of alternative sockeye salmon enhancement opportunities;
 - (iii) assessments of unforeseen issues that arise from joint enhancement activities; and
 - (iv) projects that investigate why outcomes differ from expected outcomes.