Appeal Nos. 23-35322, 23-35323, 23-35324, 23-35354

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

WILD FISH CONSERVANCY,

Plaintiff-Appellee/Cross-Appellant,

vs.

JENNIFER QUAN, in her official capacity as the Regional Administrator for the National Marine Fisheries Service, *et al.*,

Defendants-Appellants/Cross-Appellees,

and

STATE OF ALASKA and ALASKA TROLLERS ASSOCIATION,

Intervenor-Defendants-Appellants/Cross-Appellees.

On Appeal from the United States District Court for the Western District of Washington Case No. 2:20-cv-00417-RAJ-MLP

PLAINTIFF-APPELLEE/CROSS-APPELLANT'S RESPONSE TO ALASKA CONGRESSIONAL DELEGATION AMICI CURIAE BRIEF

Brian A. Knutsen
Emma A. O. Bruden
Kampmeier & Knutsen, PLLC
1300 S.E. Stark Street, Suite 202
Portland, Oregon 97214
Tel: (503) 841-6515
brian@kampmeierknutsen.com
emma@kampmeierknutsen.com

Eric A. Lindberg
Corr Cronin, LLP
1001 Fourth Avenue, Suite 3900
Seattle, Washington 98154
Tel: (206) 625-8600
elindberg@corrcronin.com

Attorneys for Plaintiff-Appellee/Cross-Appellant Wild Fish Conservancy

TABLE OF CONTENTS

TABLE OF CONTENTS i

GLOSSARY OF ACRONYMS ii

I. INTRODUCTION 1

II. ARGUMENT 2

A. The Partial Vacatur Does Not Affect the United States' Ability to Comply with the Pacific Salmon Treaty 2

B. The Economic, Cultural, and Societal Costs of Losing SRKWs or Chinook Salmon Populations Would be Incalculable 5

III. CONCLUSION 6

CERTIFICATE OF COMPLIANCE 8

GLOSSARY OF ACRONYMS

AABM	Aggregate Abundance-Based Management
BiOp	Biological Opinion
ESA	Endangered Species Act
ITS	Incidental Take Statement
NMFS	National Marine Fisheries Service
SEAK	Southeast Alaska
SRKW	Southern Resident Killer Whale
WFC_ER	Wild Fish Conservancy's Excerpts of Record, filed with Plaintiff-Appellee/Cross-Appellant's Motion for Injunction Pending Appeal
WFC_SER	Wild Fish Conservancy's Supplemental Excerpts of Record, filed with Plaintiff-Appellee/Cross-Appellant's Response to Intervenor-Defendant-Appellant State of Alaska's Motion for Stay Pending Appeal
WFC_SA	Wild Fish Conservancy's Supplemental Appendix, filed with Plaintiff-Appellee/Cross-Appellant's Response to Alaska Congressional Delegation Amici Curiae Brief

Plaintiff-Appellee/Cross Appellant Wild Fish Conservancy ("Conservancy") respectfully submits this response to the Alaska Congressional Delegation Amici Curiae Brief in Support of Intervenor-Defendants-Appellants' Motion for Stay Pending Appeal ("Amici Brief").

I. INTRODUCTION.

The Amici Brief largely rehashes arguments made in the State of Alaska's Motion for Stay Pending Appeal ("Motion to Stay") and in the Federal Defendants' Response in Support of the Motion to Stay. The Conservancy addressed those arguments in its response to the Motion to Stay and reply to the Federal Defendants' Response and does not repeat those efforts here. Instead, the Conservancy herein addresses two issues raised by the Amici. First, contrary to Amici's arguments, the District Court's partial vacatur of the incidental take statement ("ITS") does not hamper the ability of the United States to comply with any requirement of the Pacific Salmon Treaty. Second, while the Conservancy recognizes the economic impact to the commercial fishing industry and endeavored to minimize such impacts through its proposal for a narrow partial vacatur of the ITS, the economic, cultural, and societal costs of losing Southern Resident Killer Whales ("SRKWs") or Chinook salmon populations due, in part, to unmitigated overfishing would be incalculable.

II. ARGUMENT.

A. The Partial Vacatur Does Not Affect the United States' Ability to Comply with the Pacific Salmon Treaty.

The District Court's narrow partial vacatur of the ITS will not affect the United States' ability to meet its obligations under the Pacific Salmon Treaty and is, in fact, fully consistent with the Treaty. Amici's vague assertions to the contrary appear to be nothing more than hollow scare tactics. The Court should reject such unfounded arguments.

"[T]he Treaty established fishing regimes that set upper limits on intercepting fisheries, defined as fisheries in one country that harvest salmon originating in another country . . . ." WFC_ER434. "The fishery and stock-specific annual limits in the agreed regimes were negotiated with the clear understanding that, as previously described above, more restrictive fishery and stock-specific measures often would be required and applied in each country as necessary to meet domestic objectives, such as those required to meet the [Endangered Species Act] obligations for listed Chinook salmon species." ER_WFC609.

The National Marine Fisheries Service ("NMFS") therefore plainly could have imposed harvest limits or restrictions beyond those set in 2019 Pacific Salmon Treaty through the agency's Endangered Species Act ("ESA") section 7 consultation on the Southeast Alaska salmon fisheries. *See* WFC_ER452, 609, 677; *see also* WFC_SA62 (explaining that the "AABM" Southeast Alaska fisheries

must be managed so as **not to exceed** the catch limits). Indeed, NMFS's 2019 biological opinion on the Southeast Alaska salmon fisheries ("SEAK BiOp")—which was just analyzing the SEAK fisheries—explained that the Chinook harvest regimes set in the 2019 Treaty were insufficient to meet U.S. domestic interests and that more would be necessary:

> A key objective of the U.S. Section during the negotiating process for a new Agreement was therefore to achieve harvest reductions to help address ongoing conservation concerns for Puget Sound Chinook salmon and coincidentally provide benefits for SRKWs . . . [,] but there was a practical limit to what could be achieved through the bilateral negotiation process. . . . [T]he U.S. Section generally recognized that more would be required to mitigate the effects of harvest and other limiting factors that that contributed to the reduced status of Puget Sound Chinook salmon and SRKWs . . . .

WFC_ER441–42; *see also* WFC_ER452 ("[A] Party may choose voluntarily to apply more constraints to its fisheries than are specifically required by the Agreement.").

NMFS decided not to impose limits or restrictions under the ESA to protect U.S. domestic interests in preserving threatened Chinook salmon and endangered SRKWs and issued the ITS authorizing the full extent of Southeast Alaska harvests allowed under the 2019 Pacific Salmon Treaty. *See* WFC_ER759. Instead, NMFS violated the ESA and the National Environmental Policy Act in adopting and relying on indefinite and uncertain mitigation.

The District Court's partial vacatur order is squarely contemplated by NMFS

in the SEAK BiOp and is fully consistent with the Treaty. Such relief does not have any impact of the United States' ability to fulfill its obligations under the Treaty. Notably, the Amici do not cite to any provision of the Pacific Salmon Treaty that the United State could not comply with under the District Court's remedy order. *See* Amici Brief 8–9. The Court should reject Amici's unsupported arguments.

Canada has imposed restrictions on its fisheries beyond the limits set by the 2019 Pacific Salmon Treaty to protect depressed Chinook salmon populations and SRKWs. *See, e.g.*, WFC_SER93–110; *see also* WFC_SA151; WFC_SA152–153; WFC_SA159. Such restrictions do not interfere with Canada's obligations under the Treaty any more than the District Court's partial vacatur order.

The Amici Brief also incorrectly implies that the prey increase program and other mitigation identified in NMFS's SEAK BiOp are requested under the Pacific Salmon Treaty. The Amici Brief provides:

> Congress has allocated tens of millions of dollars to meet the United States' obligations under the Treaty, including providing more than $18 million annually to implement mitigation and conservation programs.

Amici Brief 2–3. The prey increase program and other mitigation identified in the SEAK BiOp are not required under, or even mentioned in, the Pacific Salmon Treaty. *See generally* WFC_SA3–149. Those measures were illegally adopted by NMFS in lieu of imposing restrictions under the ESA to ensure the continued survival of SRKWs and Puget Sound Chinook salmon.

The Court should reject Amici's unfounded contentions that the District Court's remedy order somehow interferes with the United States' ability to comply with the Pacific Salmon Treaty.

B. The Economic, Cultural, and Societal Costs of Losing SRKWs or Chinook Salmon Populations Would Be Incalculable.

The Conservancy recognizes and is sympathetic to the economic harm that the commercial troll fishing industry in Southeast Alaska faces. Southeast Alaska is not alone though, as Oregon, Washington, and Canada are likewise needing to restrict behavior for the benefit of SRKW and Chinook. *E.g.*, WFC_SA151; WFC_SA152–153; WFC_SA158–59; WFC_SA160; WFC_SA164–65 ("This year, commercial troll fishing for Chinook is closed off [the coast of Oregon] to protect weak stocks and ensure their long term survival."); WFC_SA168. Though restricting the SEAK commercial troll fishery will cause some economic harm, Congress has already determined that the value of SRKW and Puget Sound Chinook salmon is "incalculable," and these species must "be afforded the highest of priorities." *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 174, 187 (1978).

Indeed, a loss of SRKWs or Chinook salmon populations in the Pacific Northwest would inflict enormous economic, cultural, and societal harm to the public, Tribes and First Nations, and communities throughout the region. *See, e.g.*, WFC_SA150–172; *see also* WFC_SA155 ("Southern Resident killer whales are loved by hundreds of thousands of people in [British Columbia] and around the

world and are an essential keystone species for the Salish Sea. . . . [W]e must do everything we can to avoid the extinction of this important population and aid their recovery."); WFC_SA156 ("Closure of the Alaskan troll fishery is a key step in supporting the domestic rebuilding of Canadian Chinook salmon . . . ."); WFC_SA160 ("The potential loss of these [invaluable at-risk salmon] populations would disrupt ecological balance and severely impact indigenous communities' livelihoods and cultural heritage."); WFC_SA170–71 ("I can't think of two species more beloved than Orca whales and Chinook salmon to our region."); WFC_SA172 ("The fishery's impact is especially concerning because it kills wild Snake River spring/summer Chinook, a species that includes several populations that are quasi-extinct."). The Conservancy therefore requests the Court prioritize threatened and endangered species over commercial economic gains, as Congress intended.

III. CONCLUSION.

The Conservancy respectfully requests that the Court deny the Motion to Stay.

//

//

Respectfully submitted this 12th day of June 2023.

KAMPMEIER & KNUTSEN, PLLC

By: s/ Brian A. Knutsen
Brian A. Knutsen, WSBA No. 38806
By: s/ Emma A. O. Bruden
Emma A. O. Bruden, WSBA No. 56280
1300 S.E. Stark Street, Suite 202
Portland, Oregon 97214
Tel: (503) 841-6515 (Knutsen)
(503) 719-5641 (Bruden)
Email: brian@kampmeierknutsen.com
emma@kampmeierknutsen.com

Paul A. Kampmeier, WSBA No. 31560
705 Second Avenue, Suite 901
Seattle Washington 98104
Tel: (206) 858-6983
Email: paul@kampmeierknutsen.com

CORR CRONIN, LLP

Eric A. Lindberg, WSBA No. 43596
1015 Second Avenue, Floor 10
Seattle, Washington 98104
Tel: (206) 625-8600
Email: elindberg@corrcronin.com

Attorneys for Plaintiff Wild Fish Conservancy

CERTIFICATE OF COMPLIANCE

I hereby certify that this brief complies with the requirements of Federal Rules of Appellate Procedures 27(d)(1) and 32(a)(5) and (a)(6) because it has been prepared in 14-point Times New Roman font, a proportionally spaced font.

I further certify that this motion complies with Circuit Rule 27-1(1)(d) because this response, excluding those documents identified at Federal Rules of Appellate Procedures 27(a)(2)(B) and 32(f), does not exceed 20 pages.

DATED this 12th day of June 2023.

By: s/ Emma Bruden
Emma A. O. Bruden, WSBA No. 56280

Attorney for Plaintiff-Appellee/Cross-Appellant

Appeal Nos. 23-35322, 23-35323, 23-35324, 23-35354

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

WILD FISH CONSERVANCY,

Plaintiff-Appellee/Cross-Appellant,

vs.

JENNIFER QUAN, in her official capacity as the Regional Administrator for the National Marine Fisheries Service, *et al.*,

Defendants-Appellants/Cross-Appellees,

and

STATE OF ALASKA and ALASKA TROLLERS ASSOCIATION,

Intervenor-Defendants-Appellants/Cross-Appellees.

On Appeal from the United States District Court for the Western District of Washington Case No. 2:20-cv-00417-RAJ-MLP

PLAINTIFF-APPELLEE/CROSS-APPELLANT'S SUPPLEMENTAL APPENDIX

(WFC_SA1–170)

Brian A. Knutsen
Emma A. O. Bruden
Kampmeier & Knutsen, PLLC
1300 S.E. Stark Street, Suite 202
Portland, Oregon 97214
Tel: (503) 841-6515
brian@kampmeierknutsen.com
emma@kampmeierknutsen.com

Eric A. Lindberg
Corr Cronin, LLP
1001 Fourth Avenue, Suite 3900
Seattle, Washington 98154
Tel: (206) 625-8600
elindberg@corrcronin.com

Attorneys for Plaintiff-Appellee/Cross-Appellant Wild Fish Conservancy

TABLE OF CONTENTS

Pacific Salmon Treaty ..... WFC_SA3–149

Letter from Watershed Watch Salmon Society ..... WFC_SA150–51

Letter from Raincoast Conservation Foundation ..... WFC_SA152–53

Letter from Georgia Strait Alliance ..... WFC_SA154–55

Letter from Pender Ocean Defenders ..... WFC_SA156–57

Letter from Coastal Conservation Association Oregon & Washington ..... WFC_SA158–59

Letter from Skeena Wild Conservation Trust ..... WFC_SA160–61

Letter from Kathleen Hansen, Director, Rich Passage Estates HOA .... WFC_SA162

Letter from Tom Hansen ..... WFC_SA163

Letter from Paul Engelmeyer ..... WFC_SA164–65

Letter from Walter Hart ..... WFC_SA166

Letter from Fred Koontz ..... WFC_SA167–69

Letter from Marilyn McFarland ..... WFC_SA170–71

Letter from The Conservation Angler ..... WFC_SA172

PACIFIC SALMON COMMISSION

Treaty Between the Government of Canada and the Government of the United States of America Concerning Pacific Salmon, as amended through February 2022

Prepared by the
Pacific Salmon Commission

TREATY BETWEEN THE GOVERNMENT OF CANADA AND THE GOVERNMENT OF THE UNITED STATES OF AMERICA CONCERNING PACIFIC SALMON

Table of Contents

Article I: Definitions 2
Article II: Commission and Panels 3
Article III: Principles 5
Article IV: Conduct of Fisheries 6
Article V: Salmon Enhancement Programs 7
Article VI: Fraser River 7
Article VII: Transboundary Rivers 8
Article IX: Steelhead 10
Article X: Research 10
Article XI: Domestic Allocation 10
Article XII: Technical Dispute Settlement 10
Article XIII: Annexes 11
Article XIV: Implementation 11
Article XV: Entry Into Force and Termination of Treaty 12
Annex I: Panels (amended December 4, 2002) 12
Annex II: Fraser Panel Area 13
Annex III: Technical Dispute Settlement Board 14
Annex IV 14
Chapter 1: Transboundary Rivers 14
Chapter 2: Northern British Columbia and Southeastern Alaska 39
Chapter 3: Chinook Salmon 47
Chapter 4: Fraser River Sockeye and Pink Salmon 85
Chapter 5: Coho Salmon 94
Chapter 6: Southern British Columbia and Washington State Chum Salmon 111
Chapter 7: General Obligations 115
Chapter 8: Yukon River (added December 4, 2002) 115
Attachments to the June 30, 1999 Agreement between the Parties 127
Memorandum of Understanding, January 28, 1985 136
Diplomatic Note of August 13, 1985 regarding implementation of Article XV (paragraph 3) of the Pacific Salmon Treaty 141

The Government of the United States of America and the Government of Canada,

Considering the interests of both Parties in the conservation and rational management of Pacific salmon stocks and in the promotion of optimum production of such stocks;

Recognizing that States in whose waters salmon stocks originate have the primary interest in and responsibility for such stocks;

Recognizing that salmon originating in the waters of each Party are intercepted in substantial numbers by the nationals and vessels of the other Party, and that the management of stocks subject to interception is a matter of common concern;

Desiring to cooperate in the management, research and enhancement of Pacific salmon stocks;

Have agreed as follows:

Article I: Definitions

As used in this Treaty,

1. "enhancement" means man-made improvements to natural habitats or application of artificial fish culture technology that will lead to the increase of salmon stocks;
2. "fishery" means the activity of harvesting or seeking to harvest salmon;
3. "fishery regimes" means the fishing limitations and arrangements adopted by the Parties pursuant to Article IV, paragraph 6;
4. "interception" means the harvesting of salmon originating in the waters of one Party by a fishery of the other Party;
5. "overfishing" means fishing patterns which result in escapements significantly less than those required to produce maximum sustainable yields;
6. "stocks subject to this Treaty" means Pacific salmon stocks which originate in the waters of one Party and
   (a) are subject to interception by the other Party;
   (b) affect the management of stocks of the other Party; or
   (c) affect biologically the stocks of the other Party; and
7. "transboundary river" means a river that rises in Canada and flows to the sea through the United States.

Article II: Commissions and Panels

1. The Parties shall establish a Pacific Salmon Commission, hereinafter referred to as "the Commission" to be composed of two national sections, a Canadian Section and a United States Section.
2. The Commission shall have legal personality and shall enjoy in its relations with other organizations and in the territories of the Parties such legal capacity as may be necessary to perform its functions and achieve its ends. The immunities and privileges which the Commission and its officers shall enjoy in the territory of a Party shall be subject to agreement between the Commission and the Party concerned.
3. The Commission shall consist of not more than eight Commissioners, of whom not more than four shall be appointed by each Party. Each Party may also appoint not more than four alternate Commissioners, to serve in the absence of any Commissioner appointed by that Party.
4. The Commissioners and alternate Commissioners shall hold office at the pleasure of the Party by which they were appointed.
5. At the first meeting of the Commission one section shall select from its members a Commission Chairman, and the other section shall select from its members a Vice-Chairman, each of whom shall hold office for the calendar year in which the Treaty enters into force and for such portion of the subsequent year as the Commission may determine. Thereafter the Chairman and Vice-Chairman shall hold office for a term of twelve months and shall be selected by their respective sections. The section which selects the first Chairman shall be determined by lot and thereafter the offices of the Chairman and Vice-Chairman shall alternate between the sections. If either officer becomes vacant before the end of a term, the appropriate section shall select a replacement for the remainder of the term.
6. Each section shall have one vote in the Commission. A decision or recommendation of the Commission shall be made only with the approval of both sections.
7. Subject to the approval of the Parties, the Commission shall make such by-laws and procedural rules, for itself, for the Panels established pursuant to paragraph 18, and for the committees established pursuant to paragraph 17, as may be necessary for the exercise of their functions and the conduct of their meetings.

8. The Commission may make recommendations to or advise the Parties on any matter relating to the Treaty.
9. Unless otherwise agreed by the Parties, the seat of the Commission shall be at New Westminster, British Columbia.
10. The Commission shall hold an annual meeting and may hold other meetings at the request of the Chairman or of either Party. The Chairman shall notify the Commissioners of the time and place of meetings. Meetings may be held at the seat of the Commission or at such other place as may be determined in accordance with the by-laws and procedural rules of the Commission.
11. Each Party shall pay the expenses of its own section.
12. The Commission shall prepare an annual budget of joint expenses and submit it to the Parties for approval. The Parties shall bear the costs of the budget in equal shares unless otherwise agreed, and shall pay their shares as the by-laws may specify after the budget has been approved by both Parties.
13. The Commission shall authorize the disbursement of funds contributed by the Parties pursuant to paragraph 12, and may enter into contracts and acquire property necessary for the performance of its functions.
14. The Commission shall submit to the Parties an annual report on its activities and an annual financial statement.
15. The Commission shall appoint an Executive Secretary, who, subject to the supervision of the Commission, shall be responsible for the general administration of the Commission.
16. The Commission may engage staff or authorize the Executive Secretary to do so. The Executive Secretary shall have full authority over the staff subject to the direction of the Commission. If the office of the Executive Secretary is vacant the Commission shall determine who shall exercise that authority.
17. The Commission shall establish a Committee on Research and Statistics and a Committee on Finance and Administration. The Commission may eliminate or establish committees as appropriate.
18. The Commission shall establish Panels as specified in Annex I. The Commission may recommend to the Parties the elimination or establishment of Panels as appropriate.

19. The Panels shall provide information and make recommendations to the Commission with respect to the functions of the Commission and carry out such other functions as the Treaty may specify or as the Commission may direct.

20. In cases where fisheries intercept stocks for which more than one Panel is responsible, the appropriate Panels shall meet jointly to carry out the functions specified in paragraph 19. If the Panels cannot agree, each may make an independent report to the Commission.

21. Each Panel shall consist of not more than six members from each Party. Each Party may designate alternate Panel members to serve in the absence of any Panel member appointed by that Party.

22. Except as otherwise provided in the Treaty, paragraphs 4, 5, 6, 10 and 11 apply, *mutatis mutandis*, to each Panel.

Article III: Principles

1. With respect to stocks subject to this Treaty, each Party shall conduct its fisheries and its salmon enhancement programs so as to:
   (a) prevent overfishing and provide for optimum production; and
   (b) provide for each Party to receive benefits equivalent to the production of salmon originating in its waters.

2. In fulfilling their obligations pursuant to paragraph 1, the Parties shall cooperate in management, research and enhancement.

3. In fulfilling their obligations pursuant to paragraph 1, the Parties shall take into account:
   (a) the desirability in most cases of reducing interceptions; and
   (b) the desirability in most cases of avoiding undue disruption of existing fisheries; and
   (c) annual variations in abundance of the stocks.

Article IV: Conduct of Fisheries

In order to facilitate the implementation of Articles III, VI and VII:

1. Each Party shall submit an annual report on its fishing activities in the previous year to the other Party and to the Commission. The Commission shall forward the reports to the appropriate Panels.
2. The Panels shall consider the reports submitted pursuant to paragraph 1 and shall provide their views to the Commission. The Commission shall review the reports of the Panels and shall provide its views to the Parties.
3. Each year the State of origin shall submit preliminary information for the ensuing year to the other Party and to the Commission, including:
   (a) the estimated size of the run;
   (b) the interrelationship between stocks;
   (c) the spawning escapement required;
   (d) the estimated total allowable catch;
   (e) its intentions concerning management of fisheries in its own waters; and
   (f) its domestic allocation objectives whenever appropriate.

The Commission shall forward this information to the appropriate Panels.

4. The Panels shall examine the information submitted pursuant to paragraph 3 and report their views to the Commission with respect to fishery regimes for the following year.
5. The Commission shall review the reports of the Panels and shall recommend fishery regimes to the Parties.
6. On adoption by both Parties, the fishery regimes referred to in paragraph 5 shall be attached to this Treaty as Annex IV.
7. Each Party shall establish and enforce regulations to implement the fishery regimes adopted by the Parties. Each Party, in a manner to be determined by the Commission, shall notify the Commission and other Party of these regulations and shall promptly communicate to the Commission and to the other Party any in-season modification.

Article V: Salmon Enhancement Programs

1. Salmon enhancement programs that may be established by the Parties shall be conducted subject to the provisions of Article III.
2. Each year each Party shall provide to the other Party and to the Commission information pertaining, *inter alia*, to:
   (a) operations of and plans for existing projects;
   (b) plans for new projects; and
   (c) its views concerning the other Party's salmon enhancement projects.

   The Commission shall forward this information to the appropriate Panels.
3. The Panels shall examine the information and report their views to the Commission in light of the obligations set forth in Article III.
4. The Commission shall review the reports of the Panels and may make recommendations to the Parties.

Article VI: Fraser River

1. This Article applies to Fraser River sockeye and pink salmon harvested in the area specified in Annex II.
2. Notwithstanding the provisions of Article IV, paragraph 7, on adoption by the Parties of the fishery regime for the stocks covered by this Article, the Fraser River Panel shall propose regulations to the Commission for the harvest of salmon referred to in paragraph 1.
3. The Fraser River Panel shall review with other appropriate Panels the fishery regimes and the information provided pursuant to Article IV, paragraph 3, with respect to salmon other than Fraser River sockeye and pink salmon before proposing regulations pursuant to paragraph 2. The Fraser River Panel and the Commission shall ensure that regulatory proposals and recommendations, to the extent practicable, meet the requirements of the Parties with respect to the management of stocks other than Fraser River sockeye and pink salmon.

4. In implementing this Article, the Fraser River Panel and the Commission shall take into account and seek consistency with existing aboriginal rights, rights established in existing Indian treaties and domestic allocation objectives.
5. On the basis of the proposals made by the Panel, the Commission shall recommend regulations to the Parties for approval. The Parties shall review the recommendations for, *inter alia*, consistency with domestic legal obligations. The regulations shall become effective upon approval by the Party in whose waters such regulations are applicable.
6. During the fishing season, the Fraser River Panel may make orders for the adjustment of fishing times and areas stipulated in the annual regulations in response to variations in anticipated conditions. The Parties shall review the orders for consistency with domestic legal obligations. The Parties shall give effect to such orders in accordance with their respective laws and procedures.
7. The Parties shall not regulate their fisheries in areas outside the area specified in Annex II in a manner that would prevent achievement of the objectives of the fishery regime for the salmon referred to in paragraph 1.

Article VII: Transboundary Rivers

1. This Article applies to salmon originating in transboundary rivers.
2. Notwithstanding Article IV, paragraph 3(c), whenever salmon originate in the Canadian portion of a transboundary river, the appropriate Panel shall provide its views to the Commission on the spawning escapement to be provided for all the salmon stocks of the river if either section of the Panel so requests.
3. On the basis of the views provided by the Panel pursuant to paragraph 2, the Commission shall recommend spawning escapements to the Parties.
4. Whenever salmon originate in the Canadian portions of transboundary rivers, or would originate there as a result of enhancement projects, salmon enhancement projects on the transboundary river shall be undertaken co-operatively, provided, however, that either Party, with the consent of the Commission, may separately undertaken salmon enhancement projects on the transboundary rivers.

Article VIII: Yukon River

1. Notwithstanding Articles III, paragraph 1(b), and VII, arrangements for consultation, recommendation of escapement targets and approval of enhancement activities on the Yukon River require further development to take into account the unique characteristics of that River.
2. The Parties consider it important to ensure effective conservation of stocks originating in the Yukon River and to explore the development of co-operative research and identification of potential enhancement opportunities.
3. The Parties shall initiate in 1985, and conclude, as soon as possible, negotiations to, *inter alia*.
   (a) Account for United States harvests of salmon originating in the Canadian section of the River;
   (b) develop co-operative management procedures taking into account United States management programs for stocks originating in the United States section of the River;
   (c) consider co-operative research programs, enhancement opportunities, and exchanges of biological data; and
   (d) develop an organizational structure to deal with Yukon River issues.
4. Prior to the entry into force of this Treaty, the Parties shall agree upon:
   (a) the range within which the accounting of United States interceptions referred to in paragraph 3(a) shall be established;
   (b) arrangements for exchange of available data on the stocks; and
   (c) proposals for research.

Article IX: Steelhead

In fulfilling their functions, the Panels and Commission shall take into account the conservation of steelhead.

Article X: Research

1. The Parties shall conduct research to investigate the migratory and exploitation patterns, the productivity and the status of stocks of common concern and the extent of interceptions.
2. The Commission may make recommendations to the Parties regarding the conduct and coordination of research.
3. Subject to normal requirements, each Party shall allow nationals, equipment and vessels of the other Party conducting research approved by the Commission to have access to its waters for the purpose of carrying out such research.

Article XI: Domestic Allocation

1. This Treaty shall not be interpreted or applied so as to affect or modify existing aboriginal rights or rights established in existing Indian treaties and other existing federal laws.
2. This Article shall not be interpreted or applied so as to affect or modify any rights or obligations of the Parties pursuant to other Articles and Annexes to this Treaty.

Article XII: Technical Dispute Settlement

1. Either Party may submit to the Chairman of the Commission, for referral to a Technical Dispute Settlement Board, any dispute concerning estimates of the extent of salmon interceptions and data related to questions of overfishing. The Commission may submit other technical matters to the Chairman for referral to a Board. The Board shall be established and shall function in accordance with the provisions of Annex III. The Board shall make findings of fact on the disputes and the other technical matters referred to it.

2. The findings of the Board shall be final and without appeal, except as provided in paragraph 3, and shall be accepted by the Commission as the best scientific information available.
3. Either Party may, by application in writing to the Chairman of the Commission, request reconsideration of a finding of a Board, provided that such request is based on information not previously considered by the Board and not previously known to or reasonable discoverable by the Party requesting such reconsideration. The Chairman shall, if possible, refer the request to the Board which made the finding. Otherwise, the Chairman shall refer the request to a new Board constituted in accordance with the provisions of Annex III.

Article XIII: Annexes

1. All references to this Treaty shall be understood to include the Annexes.
2. The Commission, whenever appropriate, shall review the Annexes and may make recommendations to the Parties for their amendment.
3. The Annexes may be amended by the Parties through an Exchange of Notes between the Government of Canada and the Government of the United States of America.
4. The Commission shall publish the texts of the Annexes whenever amended.

Article XIV: Implementation

Each Party shall:

(a) enact and enforce such legislation as may be necessary to implement this Treaty;
(b) require reports from its nationals and vessels of catch, effort and related data for all stocks subject to this Treaty and make such data available to the Commission; and
(c) exchange fisheries statistics and any other relevant information on a current and regular basis in order to facilitate the implementation of this Treaty.

Article XV: Entry Into Force and Termination of Treaty

1. This Treaty is subject to ratification. It shall enter into force upon the exchange of instruments of ratification at Quebec City, P.Q., Canada, March 17, 1985.
2. At the end of the third year after entry into force and at any time thereafter, either Party may give notice of its intention to terminate this Treaty. The Treaty shall terminate one year after notification.
3. Upon the entry into force of this Treaty, the Convention between Canada and the United States of America for the Protection, Preservation and Extension of the Sockeye Salmon Fishery in the Fraser River System, as amended, signed May 26, 1930, shall be terminated. However, the International Pacific Salmon Fisheries Commission shall continue to function insofar as is necessary to implement Annex IV Chapter 4, paragraph (1) (c). Following the termination of the Convention, the transfer of responsibilities from the International Pacific Salmon Fisheries Commission to the Commission, the Fraser River Panel and the Government of Canada shall be as agreed by the Parties.

Annex I: Panels (amended December 4, 2002)

The following panels shall be established pursuant to Article II, paragraph 18:

(a) a Southern Panel for salmon originating in rivers with mouths situate south of Cape Caution, except as specified in sub-paragraph (b);

(b) a Fraser River Panel for Fraser River sockeye and pink salmon harvested in the area specified in Annex II; and

(c) a Northern Panel for salmon originating in rivers with mouths situate between Cape Caution and Cape Suckling.

(d) a Transboundary Panel for salmon originating in the Alsek, Stikine and Taku River systems.

(e) a Yukon River Panel for salmon originating in the Yukon River.

Annex II: Fraser Panel Area

The area comprises the waters described in Article I of the Convention between Canada and the United States of America for Protection, Preservation and Extension of the Sockeye Salmon Fishery in the Fraser River System, as amended, signed May 26, 1930, as follows:

1. The territorial waters and the high seas westward from the western coast of Canada and the United States of America and from a direct line drawn from Bonilla Point, Vancouver Island, to the lighthouse on Tatoosh Island, Washington--which line marks the entrance to Juan de Fuca Strait,--and embraced between 48 and 49 degrees north latitude, excepting therefrom, however, all the waters of Barkley Sound, eastward of a straight line drawn from Amphitrite Point to Cape Beale and all the waters of Nitinat Lake and the entrance thereto.

2. The waters included within the following boundaries:

   Beginning at Bonilla Point, Vancouver Island, thence along the aforesaid direct line drawn from Bonilla Point to Tatoosh Lighthouse, Washington, described in paragraph numbered 1 of this Article thence to the nearest point of Cape Flattery, thence following the southerly shore of Juan de Fuca Strait to Point Wilson, on Quimper Peninsula, thence in a straight line drawn to Point Partridge on Whidbey Island thence following the western shore of the said Whidbey Island, to the entrance to Deception Pass, thence across said entrance to the southern side of Reservation Bay, on Fidalgo Island, thence following the western and northern shore line of the said Fidalgo Island to Swinomish Slough[1], crossing the said Swinomish Slough, in line with the track of the Great Northern Railway[2], thence northerly following the shore line of the mainland to Atkinson Point at the northerly entrance to Burrard Inlet, British Columbia, thence in a straight line to the southern end of Bowen Island, thence westerly following the southern shore of Bowen Island to Cape Roger Curtis, thence in a straight line to Gower Point, thence westerly following the shore line to Welcome Point on Sechelt Peninsula, thence in a straight line to Point Young on Lasqueti Island, thence in a straight line to Dorcas Point on Vancouver Island, thence following the eastern and southern shores of the said Vancouver Island, to the starting point at Bonilla Point, as shown on the British Admiralty Chart Number 579, and on the United States

[1] Swinomish Slough is now known as Swinomish Channel.
[2] The Great Northern Railway has changed its name to Burlington Northern Railway.

Coast and Geodetic Survey Chart Number 6300, as corrected to March 14, 1930, copies of which are annexed to this Convention and made a part thereof.

3. The Fraser River and the streams and lakes tributary thereto.

Annex III: Technical Dispute Settlement Board

1. Each Technical Dispute Settlement Board shall be composed of three members. Within 10 days of receiving a request under Article XII to refer a matter to a Board, the Chairman of the Commission shall notify the Parties. Within 20 days of this notification, each Party shall designate one member and the Parties shall jointly designate a third member, who shall be Chairman of the Board.
2. The Board shall determine its rules of procedure, but the Commission or the Parties may specify the date by which the Board shall report its findings. The Board shall provide an opportunity for each Party to present evidence and arguments, both in writing and, if requested by either Party, in oral hearing. The Board shall report its findings to the Commission, along with a statement of its reasons.
3. Decisions of a Board, including procedural rulings and findings of fact, shall be made by majority vote and shall be final and without appeal except as provided in Article XII, paragraph 3.
4. Remuneration of the members and their expense allowances shall be determined on such basis as the Parties may agree at the time the Board is constituted. The Commission shall provide facilities for the proceedings.

Annex IV

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

(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 run[3] 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.

(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 salmon[4];

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

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

(ii) Canadian BLC: 2,300 large Chinook salmon[5];

(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.

[5] Includes average combined Canadian Aboriginal, commercial, and sport catches of Stikine Chinook salmon.

(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 run[6] 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

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

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.

(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 salmon[7];

(ii) Canadian BLC: 1,500 large Chinook salmon[8];

(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.

(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

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

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

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.

Chapter 2: Northern British Columbia and Southeastern Alaska

This Chapter shall apply to the period from 2019 through 2028, unless both Parties agree that amendments are required to this Chapter by January 2024 to support conservation of Nass and Skeena River sockeye salmon or avoid undue disruption of the pink salmon fishery in District 104. The Parties shall complete a review of the results of the implementation of this

Chapter by the Commission post-season meeting in January 2022. The review shall identify management actions taken to support the conservation of Nass River and Skeena River sockeye, to evaluate the consistency of those actions with the obligations of this Chapter and outline, if feasible, the benefit of those actions for Nass River and Skeena River sockeye.

Subject to the availability of funds, the United States (U.S.) shall make $1.1 million available on an annual basis to U.S. management agencies for the specific purposes identified in this Chapter.

The Parties agree that:

1. With respect to the Portland Canal chum salmon fishery, a Party shall not conduct net fisheries in Alaskan Section 1A and Canadian sub-areas 3-15 and 3-16 or conduct directed chum fisheries in Alaskan Section 1B north and east of Akeku Point or in Canadian sub-areas 3-11 and 3-13 unless the Parties approve these chum fisheries.
2. With respect to sockeye salmon, the Parties shall develop a coordinated approach to management that reflects their commitment to apply appropriate management measure for Nass River and Skeena River sockeye salmon.
3. The Parties shall maintain a joint Northern Boundary Technical Committee (the "Committee") that reports, unless the Parties otherwise decide, to the Northern Panel and the Commission. The Committee shall, *inter alia*:
   (a) evaluate the effectiveness of management actions;
   (b) identify and review the status of pink, chum, sockeye, and coho stocks;
   (c) provide the most current information on the stocks' harvest rates and patterns, and develop a joint data base for assessments;
   (d) devise analytical methods for the development of alternative regulatory and production strategies;
   (e) identify information and research needs, including future monitoring programs for stock assessments; and
   (f) for each season, make stock and fishery assessments and recommend to the Northern Panel conservation measures that are consistent with this Treaty.
4. Canada shall provide the Committee with pre-season run-size forecasts for Skeena River and Nass River sockeye salmon prior to the annual January post-season meeting of the Northern Panel, as well as updated weekly run-size estimates as in-season information becomes available. The Parties agree that the 50% probability (p50) of the run-size

forecasts may be used to make management decisions regarding fishing plans for Canada and the U.S., respectively.

5. The Parties shall continue to exchange the data and information from the in-season management regime at both the Skeena Tyee test fishery and from the Nass River assessments to facilitate understanding of run-size estimation.

6. The U.S. shall:

(a) manage the Alaskan District 104 purse seine fishery prior to statistical week 31 to:

(i) achieve an annual catch share of Nass and Skeena sockeye of 2.45% of the Annual Allowable Harvest (AAH) of the Nass and Skeena sockeye stocks in that year. The methodology for AAH calculations is provided in the Appendix to this Chapter,

(ii) carry forward from year to year annual deviations from that annual catch share. Details of the procedure are outlined in the Appendix to this Chapter;

(b) manage the Alaskan District 101 drift gillnet fishery to:

(i) achieve an annual catch share of Nass sockeye of 13.8% of the AAH of the Nass sockeye stocks in that year. The methodology for AAH calculations is provided in the Appendix to this Chapter,

(ii) carry forward from year to year annual deviations from that annual catch share. Details of the procedure are outlined in the Appendix to this Chapter.

7. Based on run-size estimates for Nass River and Skeena River sockeye, the Parties shall undertake additional management actions prior to statistical week 31 in District 104 as follows:

(a) Skeena River

(i) The expected total run is below 900,000 sockeye salmon. At this level, there are no Canadian commercial marine harvests. The U.S. shall undertake measures to reduce the impact of the District 104 purse seine fishery, which may include delaying the start date and duration of the fishery.

(ii) The expected total run is below 600,000 sockeye salmon. At this level, there are no Canadian marine or in-river commercial harvests, with the exception of terminal fisheries adjacent to enhancement spawning channels. The U.S. shall undertake additional measures to reduce the impact of the District 104 purse seine fishery, which may include delaying the start date and duration of the fishery, or reducing the fishing area.

(b) Nass River

(i) The expected total run is below 200,000 sockeye salmon. At this level, there are no Canadian commercial marine harvests. The U.S. shall undertake measures to reduce the impact of District 101 drift gillnet and District 104 purse seine fisheries, which may include delaying the start date and duration of these fisheries.

(ii) The expected total run is below 180,000 sockeye salmon. At this level, there are no Canadian marine or in-river commercial harvests. The U.S. shall undertake measures to reduce the impact of District 101 drift gillnet and District 104 purse seine fisheries, which may include delaying the start date, reducing the duration, reducing the area, or implementing mesh restrictions (District 101 drift gillnet fishery only) for these fisheries.

8. With respect to pink salmon, Canada shall:

(a) manage the Canadian Area 3-1, 3-2, 3-3 and 3-4 net fishery to:

(i) achieve an annual catch share of 2.49% of the AAH of Alaskan Districts 101, 102 and 103 pink salmon in that year. The methodology for AAH calculations is provided in the Appendix to this Chapter,

(ii) carry forward from year to year annual deviations from that annual catch share. Details of the procedure are outlined in the Appendix to this Chapter;

(b) manage the Canadian Area 1 troll fishery to:

(i) achieve an annual catch share of 2.57% of the AAH of Alaskan Districts 101, 102 and 103 pink salmon in that year. The methodology for AAH calculations is provided in the Appendix to this Chapter,

(ii) carry forward from year to year annual deviations from that annual catch share. Details of the procedure are outlined in the Appendix to this Chapter.

9. In order to accomplish the objectives of this Chapter, each Party shall not initiate new intercepting fisheries, or conduct or redirect fisheries in a manner that intentionally increases interceptions.

10. Canada agrees to complete a comprehensive escapement goal analysis (prior to the 2023 fishing season) for Nass and Skeena river sockeye salmon that shall be peer-reviewed by an independent contractor and then submitted to the Committee and Northern Panel for further review.

11. The Northern Panel and the Committee shall co-develop the Terms of Reference for the (biological or MSY-based) escapement goal analysis and shall include a review of:

(a) long-term run-timing patterns;

(b) short-term run-timing anomalies;

(c) the potential influence of stock-specific abundance changes on perceived run timing shifts;

(d) data limitations for modeling timing through the District 104 fishery; and

(e) any other related information that could be relevant to management of Boundary Area fisheries.

12. The U.S. agrees to complete a harvest pattern analysis of the pink salmon fishery in District 104 salmon that shall be peer-reviewed by an independent contractor and then submitted to the Committee and the Northern Panel for further review.

13. The Northern Panel and the Committee shall co-develop the Terms of Reference for the harvest pattern analysis and shall include a review of:

(a) the long-term changes in abundance of the various pink salmon stocks in the Boundary Area;

(b) the changes in the timing, and location, of the pink salmon harvest in District 104;

(c) the impact of pink salmon harvest in District 104 on Skeena River and Nass River sockeye; and

(d) the efficacy of assessing pink salmon run timing through District 104 using available data.

14. The Committee shall review the sockeye run reconstruction model to provide recommendations to the Northern Panel, at or before the January 2022 Commission post-season meeting, regarding the creation of a simpler run reconstruction model using genetic data and to provide recommendations on any improvements to the program, if needed.

15. The Parties shall continue to collect sockeye salmon genetic samples from appropriate marine fisheries for use in the annual run reconstruction including Alaska Districts 101, 102, 103, and 104 purse seine and Districts 101 and 106 drift gillnet fisheries. The Parties shall also take sockeye salmon genetic samples in Canadian Area 3 and 4 gillnet and seine fisheries for use in the annual run reconstruction or other fisheries as jointly determined by the Parties.

Appendix to Annex IV, Chapter 2: Understanding on the Application of Annex IV, Chapter 2 (Northern British Columbia and Southeastern Alaska)

1. Annual Allowable Harvest ("AAH")

(a) Combined Nass and Skeena Sockeye AAH for Alaska District 104 Purse Seine Fishery

(i) The AAH each year shall be calculated as the combined total run of adult Nass and Skeena sockeye salmon in that year, less the combined Nass and Skeena escapement target of 1.1 million fish. If the actual Nass and Skeena spawning escapement for the season is below the target level, the actual spawning escapement shall be used in the AAH calculation.

(ii) The total run calculation includes the catches of Nass and Skeena sockeye salmon in the principal boundary area fisheries and the spawning escapements to the Nass and Skeena watersheds. This includes the catch of Nass and Skeena sockeye salmon in: Alaskan Districts 101, 102, 103, 104 and 106 net fisheries; Canadian Areas 1, 3, 4 and 5 net fisheries; and Canadian Nass and Skeena in-river fisheries. Catches in other boundary area fisheries may be included in the total run calculation as determined by the Committee.

(b) Nass Sockeye AAH for Alaska District 101 Drift Gillnet Fishery

(i) The AAH each year shall be calculated as the total run of adult Nass sockeye in that year less the escapement target of 0.2 million fish. If the actual Nass spawning escapement for the season is below the target level, the actual spawning escapement shall be used in the AAH calculation.

(ii) The total run calculation includes the catches of Nass sockeye salmon in the principal boundary area fisheries and the spawning escapement to the Nass watershed. This includes the catch of Nass sockeye salmon in: Alaskan Districts 101, 102, 103, 104 and 106 net fisheries; Canadian Areas 1, 3, 4, and 5 net fisheries; and Canadian Nass in-river fisheries. Catches in other boundary area fisheries may be included in the total run calculation as determined by the Committee.

(c) Districts 101, 102 and 103 Pink Salmon AAH for Canadian Area 3(1-4) Net and Area 1 Troll Fisheries

(i) The AAH each year shall be calculated as the total run of adult pink salmon to Alaskan Districts 101, 102 and 103 in that year, less the minimum escapement target of 10.75 million fish. If the actual escapement for the season is below the target level, the actual escapement shall be used in the AAH calculation.

(ii) The total pink salmon run to Alaskan Districts 101, 102 and 103 shall be calculated as the catch of Alaskan pink salmon in: Canadian Areas 1, 3, 4 and 5 net and troll fisheries; Alaskan Districts 101, 102, 103 and 104 net and troll fisheries; and in the escapements to Districts 101, 102 and 103.

2. Exchange of Management and Stock Assessment Information

(a) Pre-season

The Committee shall provide the pre-season estimates of the AAHs by May 1 of each year.

(b) In-season

The Parties shall exchange management and assessment information in-season. The exchange shall occur weekly (or more often, if required) and includes (but is not limited to) catch, catch per unit effort, escapement and run-size estimations.

(c) Post-season

The Committee shall determine the calculation of the allowable and actual harvests of salmon, as specified in this Chapter (prior to the annual January post-season meeting unless the Committee determines otherwise) using the agreed post-season accounting methods. These methods are expected to change as improved techniques or assessments become available. Any new jointly determined method shall be used in Committee post-season accounting. These new methods could include (but are not limited to) changes to escapement targets, stock identification methods and reconstruction models. Any new methods shall not be used to alter the AAH shares in this Chapter, or to recalculate previous years for which the accounting has been finalized.

3. Overage and underage provisions for paragraphs 6(a), 6(b), 8(a), and 8(b) of this Chapter (sockeye and pink salmon)

(a) The intent of the overage/underage provision is to provide an arrangement that makes the Parties accountable for catch shares but that offers flexibility in the Parties' management of fisheries subject to this Treaty.

(b) Although the management intent is to harvest salmon at the allowable percentage AAH, the Parties recognize that overages and underages may occur and that an accounting mechanism is required.

(c) The payback mechanism for each fishery shall be based on the number of fish and on the use of the accounting method referred to in paragraph 2(c) of this Appendix.

(d) After each season, the Committee shall determine the calculation of the allowable and actual harvests of salmon specified in this Chapter based on the post-season accounting method. If the actual harvest deviates from the annual allowable harvest that is stipulated in this Chapter, the amount of the deviation shall be added to any cumulative deviation.

(e) The management intent for each fishery shall be to return any overages to a neutral or negative balance as soon as possible. After five years of consecutive overages, the Party with a cumulated overage shall provide the Northern Panel with specific management actions to eliminate the overage in that fishery.

4. Unless the Parties jointly decide otherwise, the accrual of underage is not intended to allow a Party to modify its fishing behaviour in any given year to harvest the total

accrued underage. The Parties shall manage their fishing behaviour with the intent to harvest no more than 150% of their AAH in any season.

5. The Parties agree to review this Chapter a minimum of two years prior to its expiration with a view to renewing it. If such renewal is not successfully concluded before this Chapter expires, then the Parties shall carry forward the overages and underages described in this Appendix to the next Chapter period.

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 changes[9] that a Party is considering that may alter the stock or age composition and incidental mortality of a fishery regime's catch;

[9] The model configuration BPCVI-28 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.

(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,

(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 model[10] 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;

(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 guidelines[11]. 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;

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

[11] Guidelines in TCCHINOOK(13)-1 and PSC Technical Report 25. (Correct reference to TCCHINOOK (13)-1 updated in February 2023)

(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

(e) create and maintain a work group to discuss the programs initiated in sub-paragraphs (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)[12], and

(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)[13];

(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.

[12] The NBC AABM Chinook salmon fishery includes portions of Aboriginal rights based fisheries.

[13] The WCVI AABM Chinook salmon fishery includes:

- Sport fishery in Pacific Fishery Management Areas (PFMA) 21, 23, 24 inside the Canadian "surfline" 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 surfline, during the period August 1 through October 15.
- Sport fishery in PFMA 25, 26, 27 inside the Canadian "surfline" 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 surfline, 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 stock[14]. The work group shall report to the Commission by October 2019;

(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 analysis[15] 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.

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

[14] The work shall be consistent with paragraph 7 of Chapter 1 of this Treaty.

[15] 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.

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 2019[16];

(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

[16] 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.

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 years[17], 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

[17] 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.

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

(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.

Replaces previous version by Commission decision on October 17, 2019.[18]

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	42,100	42,300	29,200
0.30	47,000	47,700	33,700
0.35	51,900	53,200	38,300
0.40	56,800	58,700	42,800
0.45	61,600	64,100	47,300
0.50	66,500	69,600	51,900
0.55	71,400	75,100	65,800
0.60	76,300	80,500	71,100
0.65	81,200	86,000	76,400
0.70	86,000	91,500	81,700
0.75	90,900	96,900	87,000
0.80	95,800	102,400	92,300
0.85	100,700	107,900	97,500
0.90	105,500	113,300	102,800
0.95	110,400	118,800	108,100
1.00	115,300	124,200	113,400
1.05	122,900	129,700	118,700
1.10	133,500	135,200	134,900
1.15	144,200	140,600	140,700
1.20	154,900	146,100	167,300
1.25	185,900	151,600	173,900
1.30	192,600	157,200	180,500
1.35	199,300	163,300	191,800
1.40	206,000	169,500	198,500

[18] The Commission adopted a new Chinook model October 17, 2019; revisions to Chapter 3 Table 1, Table 2 and Appendix C were required to maintain relationships between AIs and catch limits.

1.45	212,700	175,700	205,300
1.50	219,400	181,800	212,000
1.55	226,100	188,000	218,800
1.60	250,900	194,200	225,500
1.65	258,200	200,300	232,300
1.70	265,400	225,300	239,000
1.75	272,700	231,400	245,800
1.80	279,900	237,600	252,500
1.85	287,200	243,700	259,300
1.90	308,000	249,800	266,000
1.95	315,600	256,000	272,700
2.00	323,100	262,100	279,500
2.05	330,700	268,200	286,200
2.10	338,300	274,400	293,000
2.15	345,900	280,500	299,700
2.20	353,500	286,600	306,500
2.25	361,100	292,700	313,200

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

REPLACED BY COMMISSION DECISION OF OCTOBER 17, 2019

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

REPLACED BY COMMISSION DECISION ON OCTOBER 17, 2019

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

Replaces previous version by Commission decision on October 17, 2019.[19]

CPUE-based Tier	AI-based Tier	Catch Limit
Less than 2.0	Less than 0.895	Commission Determination
2.0 to less than 2.6	Between 0.895 and 1.03	111,833
2.6 to less than 3.8	Between 1.035 and 1.24	140,323
3.8 to less than 6.0	Between 1.245 and 1.55	205,165
6.0 to less than 8.7	Between 1.555 and 1.87	266,585
8.7 to less than 20.5	Between 1.875 and 2.28	334,465
20.5 and greater	Greater than 2.28	372,921

REPLACED BY COMMISSION DECISION ON OCTOBER 17, 2019

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

[19] The Commission adopted a new Chinook model October 17, 2019; revisions to Chapter 3 Table 1, Table 2 and Appendix C were required to maintain relationships between AIs and catch limits.

Appendix A to Annex IV, Chapter 3: Understandings Regarding Chinook Technical Committee Assignments Relating to 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 model[20] 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

(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

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

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 2019[21].

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 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

[21] 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.

out in this Chapter. Beginning with the 2019-2021 catch years[22], 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 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.

[22] 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.

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 HRIs[23]

Replaces previous version by Commission decision on October 17, 2019[24]

Southeast Alaska All Gear	North BC Troll & QCI Sport	WCVI Troll & Outside Sport
Proportionality Constant (PC) = 12.611	Proportionality Constant (PC) = 11.931	Proportionality Constant (PC) = 12.544
Harvest Rate Index (HRI) = EXP(LN(Troll Catch / AI) - PC)	Harvest Rate Index = EXP(LN(Troll Catch / AI) - PC)	Harvest Rate Index = EXP(LN(Troll Catch / AI) - PC)
Troll Catch = (Total Catch - Net Catch) * 0.8 = EXP(PC + LN(HRI * AI))	Troll Catch = Total Catch * 0.8 = EXP(PC + LN(HRI * AI))	Troll Catch = Total Catch * 0.8 = EXP(PC + LN(HRI * AI))
Total Catch = Net Catch + Troll Catch / 0.8	Total Catch = Troll Catch / 0.8	Total Catch = Troll Catch / 0.80
Reduction in Total Catch from 2009 Agreement:	Reduction in Total Catch from 2009 Agreement: 0%	Reduction in Total Catch from 2009 Agreement:
AIs less than 1.875 - 7.5%, Net Catch = 15,725		AIs less than 1.08 - 12.5%
AIs between 1.875 and 2.28 - 3.25%, Net Catch = 16,448		AIs between 1.08 and 1.32 - 4.8%
AIs greater than 2.28 - 1.5%, Net Catch = 16,745		AIs greater than 1.32 - 2.4%
For AIs less than 1.035	For AIs less than 1.295	For AIs less than 0.545
Total Catch = 17,748.1 + 97,554.54 * AI	Total Catch = 14,961.96 + 109,287.75 * AI	Total Catch = 6,510.71 + 90,706.71 * AI
Troll Catch = (2,023.1 + 97,554.54 * AI) * 0.8	Troll Catch = (14,961.96 + 109,287.75 * AI) * 0.8	Troll Catch = (6,510.71 + 90,706.71 * AI) * 0.8
HRI = 0.271[1] to 0.266	HRI = 0.733[1] to 0.637	HRI = 0.296[1] to 0.293

[23] 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.

[24] The Commission adopted a new Chinook model October 17, 2019; revisions to Chapter 3 Table 1, Table 2 and Appendix C were required to maintain relationships between AIs and catch limits.

For AIs between 1.035 and 1.245	For AIs between 1.295 and 1.655	For AIs between 0.545 and 1.075
Total Catch = -101,708.76 + 213,868.28 * AI	Total Catch = -3,119.8 + 123,299.28 * AI	Total Catch = 7,595.81 + 105,824.22 * AI
Troll Catch = (-117,433.76 + 213,868.28 * AI) * 0.8	Troll Catch = (-3,119.8 + 123,299.28 * AI) * 0.8	Troll Catch = (7,595.81 + 105,824.22 * AI) * 0.8
HRI = 0.269 to 0.318	HRI = 0.637 to 0.639	HRI = 0.341 to 0.322
For AIs between 1.245 and 1.555	For AIs greater than 1.655	For AIs between 1.075 and 1.175
Total Catch = 18,502.79 + 133,945.77 * AI	Total Catch = 16,791 + 122,647.76 * AI	Total Catch = 8,264.25 + 115,136.87 * AI
Troll Catch = (2,777.79 + 133,945.77 * AI) * 0.8	Troll Catch = (16,791 + 122,647.76 * AI) * 0.8	Troll Catch = (8,264.25 + 115,136.87 * AI) * 0.8
HRI = 0.363 to 0.362	HRI = 0.699 to 0.675[2]	HRI = 0.350 to 0.349
For AIs between 1.555 and 1.875		For AIs between 1.175 and 1.325
Total Catch = 18,734.27 + 145,107.76 * AI		Total Catch = 9,444.89 + 131,585.46 * AI
Troll Catch = (3,009.27 + 145,107.76 * AI) * 0.8		Troll Catch = (9,444.89 + 131,585.46 * AI) * 0.8
HRI = 0.392 to 0.391		HRI = 0.398 to 0.396
For AIs between 1.875 and 2.285		For AIs greater than 1.325
Total Catch = 19,595.54 + 151,775.37 * AI		Total Catch = 9,682.99 + 134,902.64 * AI
Troll Catch = (3,147.54 + 151,775.37 * AI) * 0.8		Troll Catch = (9,682.99 + 134,902.64 * AI) * 0.8
HRI = 0.409		HRI = 0.406 to 0.394[2]
For AIs greater than 2.285		

Total Catch = 19,949.47 + 154,520.29 * AI		
Troll Catch = (3,204.47 + 154,520.29 * AI) * 0.8		
HRI = 0.416 to 0.415[2]		

[1] Assumes a minimum AI of 0.5
[2] Assumes a maximum AI of 3.0

Any changes to the calculation of the annual AI or HRI metrics will require a recalculation of the proportional constants, catch equations and HRI levels contained in Appendix C.

Appendix C to Annex IV, Chapter 3: Relationships between AIs, Catches and HRIs[25]

Southeast Alaska All Gear	North BC Troll & QCI Sport	WCVI Troll & Outside Sport
Proportionality Constant (PC) = 12.38 Harvest Rate Index (HRI) = EXP(LN(Troll Catch / AI) - PC) Troll Catch = (Total Catch - Net Catch) * 0.8 = EXP(PC + LN(HRI * AI)) Total Catch = Net Catch + Troll Catch / 0.8 <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>For AIs less than 1.005</u> Total Catch = 15,725 + 102,213 * AI	Proportionality Constant (PC) = 11.83 Harvest Rate Index = EXP(LN(Troll Catch / AI) - PC) Troll Catch = Total Catch * 0.8 = EXP(PC + LN(HRI * AI)) Total Catch = Troll Catch / 0.8 <u>Reduction in Total Catch from 2009 Agreement:</u> 0% <u>For AIs less than 1.205</u> Total Catch = 130,000 * AI	Proportionality Constant (PC) = 13.10 Harvest Rate Index = EXP(LN(Troll Catch / AI) - PC) Troll Catch = Total Catch * 0.8 = EXP(PC + LN(HRI * AI)) Total Catch = Troll Catch / 0.80 <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 0.5</u> Total Catch = 112,304 * AI

REPLACED BY COMMISSION DECISION ON OCTOBER 17, 2019

[25] 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 = (102,213 * AI) * 0.8
HRI = 0.344

<u>For AIs between 1.005 and 1.2</u>

Total Catch = -106,144 + 224,081 * AI
Troll Catch = (-121,869 + 224,081 * AI) * 0.8
HRI increasing from 0.346 to 0.412

<u>For AIs between 1.205 and 1.5</u>

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

<u>For AIs between 1.505 and 1.8</u>

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

Troll Catch = (130,000 * AI) * 0.8
HRI = 0.757

<u>For AIs between 1.205 and 1.5</u>

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

<u>For AIs greater than 1.5</u>

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

Troll Catch = (112,304 * AI) * 0.8
HRI = 0.184

<u>For AIs between 0.5 and 0.925</u>

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

<u>For AIs between 0.93 and 1.0</u>

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

<u>For AIs between 1.005 and 1.12</u>

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

REPLACED BY COMMISSION DECISION ON OCTOBER 17, 2019

<u>For AIs between 1.805 and 2.2</u> Total Catch = 16,448 + 159,023 * AI Troll Catch = (159,023 * AI) * 0.8 HRI = 0.535 <u>For AIs greater than 2.2</u> Total Catch = 16,745 + 161,899 * AI Troll Catch = (161,899 * AI) * 0.8 HRI = 0.544		<u>For AIs greater than 1.12</u> Total Catch = 167,023 * AI Troll Catch = (167,023 * AI) * 0.8 HRI = 0.273

REPLACED BY COMMISSION DECISION ON OCTOBER 17, 2019

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 Stock[8])	Canadian ISBM CYER Limit	US ISBM CYER Limit	Management Objective
SEAK/	Situk[1] (TBD)	NA	NA	500-1,000
TBR	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 (TBD)[10]	TBD	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)	NA[3]	85% avg 09-15	TBD[6]

[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.

[10] The CTC will be reporting on CWT recoveries for the Phillips River stock until 2024, when all age classes from the last tagged brood (2019) recruit to fisheries, however as the criteria for calculations of mortality distributions (which are the basis for CYERs) are: (1) recoveries available for three ages at least, and (2) minimum of 35 estimated recoveries per age, the CYER for Phillips cannot be calculated past 2022. The Phillips River will continue as an escapement indicator and Canada is continuing to assess options for a potential CWT indicator stock that is representative of Mainland Inlet Chinook stocks.

Chapter 4: Fraser River Sockeye and Pink Salmon

The parties have agreed to provisionally apply this chapter as of 1 January 2020 until it formally enters into force.

1. This Chapter shall apply to the period from 2020 through 2028 ("Chapter Period"). The Fraser River Panel ("the Panel") shall undertake a review of the effectiveness of the implementation of this Chapter 4, if either Party has a significant concern. The review shall include biological and conservation considerations, effectiveness of assessment programs, management decisions, and achievement of Treaty harvest objectives by both Parties. The Panel shall identify any appropriate modifications to the implementation of this Chapter and make proposed recommendations to the Pacific Salmon Commission (the "Commission") for their consideration prior to the next fishing season.

2. The U.S. share of the annual Fraser River sockeye and pink salmon Total Allowable Catch (the "TAC"), as defined in paragraph 3 to be harvested in the waters of Washington State is as follows:

   (a) for sockeye salmon, the U.S. catch in the Fraser Panel Area shall not exceed 16.5

percent of the TAC;

(b) for pink salmon, the U.S. catch in the Fraser Panel Area shall not exceed 25.7 percent of the TAC.

3. The TAC shall be calculated as the remaining portion of the annual aggregate Fraser River sockeye and pink runs (excluding any catch of Fraser River sockeye identified in Alaskan waters) after the spawning escapement targets established, unless otherwise mutually decided by the Panel, by applying Canada's pre-season escapement plan (subject to any adjustments made pursuant to paragraph 3(b)), the agreed Fraser River Aboriginal Exemption (AFE), and the retained catch in Panel-authorized test fisheries are deducted. The TAC shall be calculated separately for Fraser River sockeye and pink salmon. The following definitions and procedures apply to the TAC calculations:

(a) The annual U.S. share shall be calculated based on the last in-season run size estimates adopted by the Panel, using the escapement targets established by applying Canada's pre-season escapement plan, which may be adjusted pursuant to paragraph 3(b), and taking into account any adjustments under paragraph 8. The Panel has applied this methodology beginning with the 2018 season.

(b) For the purposes of in-season management by the Panel, the spawning escapement objective is the target set by Canada, including any extra requirements that may be identified and mutually decided by the Panel, for natural, environmental, or stock assessment factors, to ensure that the fish reach the spawning grounds at target levels. If the Panel does not mutually decide on additional escapement amounts, the Commission staff shall make a recommendation that shall become effective upon consent by at least one National Section of the Panel. Any additional escapement amounts that Canada believes are necessary beyond those determined pursuant to the above shall not affect the U.S. share.

(c) The agreed AFE is that number of sockeye that is subtracted from the total run size in determining the TAC upon which the U.S. shares that are specified in paragraph 2 are calculated. Any Canadian harvests in excess of these amounts count against the TAC, and do not affect the U.S. share. The agreed AFE is the actual catch of Fraser River sockeye harvested in both the in-river and marine area Aboriginal Fisheries, up to 400,000 sockeye annually.

(d) To calculate the TAC by stock management group, the AFE shall be allocated to management groups as follows: The Early Stuart sockeye exemption shall be up to 20% of the AFE, and the remaining balance of the AFE exemption shall be based on the average proportional distribution for the most recent three cycles and modified annually, as required, to address concerns for Fraser River sockeye stocks and other species and as otherwise mutually decided by the Panel. If, either in the pre-season or in-season, there is insufficient harvestable surplus (defined as run size minus escapement goal, minus management adjustments made pursuant to paragraph 3(b), minus test fishing catches) in any stock management group to allow for the total AFE distribution to that stock management group as described above, the AFE for that stock management group shall be the greater of: (a) the catch, (b) the projected catch by aboriginal fisheries or (c) the available harvestable surplus. The remaining balance of AFE that is not distributed to that stock management group shall be re-distributed to the other stock management groups in the same proportions that are specified above, unless otherwise mutually decided by the Panel. The Panel shall develop procedures to implement potential AFE redistributions.

(e) Each Fraser River sockeye stock is assigned to one of four stock management groups. The stock management groups are Early Stuart, Early Summer, Mid-Summer and Late Run. The annual U.S. share of sockeye available for harvest in the Panel Area is calculated by applying the percentage share provided in paragraph 2(a) to the aggregate TAC, defined as the sum of the TACs calculated for each of the four stock management groups. To the extent practicable, the Panel shall develop and implement a fishing plan that provides the U.S. fishery with the opportunity to harvest its 16.5 percent aggregate share of the TAC of Fraser River sockeye. To accomplish this, the Panel to the extent practical, shall strive to concentrate the U.S. sockeye fishery on the most abundant management group (or groups), i.e., those that provide the largest percentage of the available TAC. It is understood that, despite concentrating the U.S. harvest in this manner, the overlapping of management groups may result in more than 16.5 percent of the TAC for one or more of the less abundant management groups being harvested by the U.S. fishery. A small but acceptable rate of incidental harvest

may occur on one or more overlapping management groups that have little or no TAC as defined in this Chapter.

(f) Notwithstanding paragraph 3(e), in order to address specific conservation and harvest objectives in any given year, the Panel may, by mutual decision, assign Fraser River sockeye stocks to five or more management groups. If the Panel adopts more than four Fraser River sockeye stock management groups, the TAC calculation, overlapping stock harvest approach, and incidental harvest provisions apply in a similar fashion as with the four stock management groupings set out in paragraph 3(e). As part of the decision to adopt more than four stock management groups, the Panel shall mutually decide on how the AFE would be apportioned among the stock management groups.

(g) To the extent practicable, the Panel shall develop and implement a fishing plan that provides the U.S. fishery with the opportunity to harvest its 25.7 percent share of the Fraser River pink salmon TAC. To accomplish this, the Panel shall take into consideration the availability of both the sockeye salmon TAC and pink salmon TAC, through the entire fishing season, while to the extent practical, minimizing the impacts on overlapping sockeye management groups with little or no TAC. It is understood that the overlapping of sockeye and pink salmon migrations may result in a small but acceptable rate of incidental harvest on one or more overlapping sockeye management groups that have little or no TAC as defined in this Chapter.

4. Pursuant to Article IV, paragraph 3 of the Treaty, Canada shall annually establish the Fraser River sockeye and pink salmon spawning escapement targets for the purpose of calculating the annual TAC. For the purposes of pre-season planning, if possible, Canada shall provide forecasts of run size and spawning escapement requirements by stock management groupings to the Fraser River Panel no later than the annual meeting of the Commission. Canada shall provide the Panel forecasts of migration patterns, including run timing and diversion rate, and any in-season adjustments in escapement requirements, as they become available in order to accommodate the management needs of the Panel in a timely manner. In addition, the United States shall provide, on a timely basis, run size forecasts of U.S. origin sockeye and pink salmon stocks affected by Panel management.

5. To support Fraser River Panel decisions including those related to fishery management, the Panel shall develop test fishing plans, fishing plans, and in-season decision rules as may be necessary to implement this Chapter. The Parties shall establish and maintain data sharing principles and processes that enable the Parties, the Commission staff, and the Panel to manage their fisheries in a timely manner consistent with this Chapter. With respect to management responsibilities, all activities of the Parties, the Commission staff, and the Panel shall be consistent with the Exchange of Notes between the Government of Canada and the Government of the United States of America constituting an Agreement regarding the implementation of Article XV (paragraph 3) of the Pacific Salmon Treaty signed on January 28, 1985, done at Ottawa on 13 August 1985.

6. The Panel pre-season planning meetings that do not occur simultaneously with the Commission meetings shall be held alternately in Canada and the United States. Scheduled in-season management meetings shall be held in Richmond, British Columbia unless the Panel mutually decides otherwise. As decided, the Panel meetings may be held by telephone conference call.

7. The Parties may adjust the specific areas within the Fraser Panel Area in which Panel decisions apply, by mutual decision, through annual regulatory control letters, as necessary, to simplify domestic fishery management and ensure adequate consideration of the effect on other stocks and species harvested in the Area.

8. The Commission staff shall annually adjust the calculation of the U.S. share for harvest overages and underages based on post-season catch estimates as follows:

   (a) The U.S. share shall be adjusted in the amount of any harvest overage or underage of the same species from the previous year or years as provided in subparagraphs (b) and (c). In making that adjustment, the U.S. current year share shall not reduced by more than 5 percent or increased by more than 15 percent because of the adjustment, unless otherwise determined by Panel decision. The Panel shall attempt to fully implement any adjustments to the U.S. share by the expiration of this Chapter. Any remaining balance from the harvest overage or underage shall be incorporated in the subsequent year's allocation. Any residual overage or underage remaining at the last year of this Chapter shall be carried forward into the next Chapter Period.

(b) The U.S. share shall be adjusted to account for management imprecision in U.S. fisheries subject to the limitations prescribed in subparagraph (c). Additionally, the U.S. share shall be adjusted for underages that occur as a result of Canada directly impeding the U.S. from pursuing its in-season share of the TAC. This latter circumstance shall be noted in-season by the Panel including the effect Canada's catch had on impeding the U.S. pursuit of its in-season share, and shall be compensated for as an underage pursuant to paragraph (a).

(c) The U.S. share shall not be adjusted:

(i) for underages which occur because the U.S. fishery failed to deploy sufficient effort;

(ii) for underages which occur because too few fish were available to the U.S. fishery due to migration patterns (e.g., diversion rates) or harvesting constraints for intermingled stocks or species;

(iii) for the portion of an underage that results from an increase in the estimated TAC that is identified after the year's fishery ends but that would not have been available due to harvest constraints for intermingled stocks or species;

(iv) for an overage resulting from TAC reductions after the scheduling of the last Panel approved U.S. fishery of the season; or

(v) for any harvest of Fraser River sockeye that occurs in Alaska.

(d) Fisheries that occur after the last U.S. Fraser River Panel approved fishery are expected to remain similar to those of recent years.

9. The Parties shall establish a Technical Committee (the "Committee") for the Panel:

(a) The members of the Committee shall coordinate the technical aspects of the Panel activities with the Commission staff and the National Sections of the Panel, and shall report, unless otherwise mutually decided, to their respective National Sections of the Panel. The Committee may receive assignments of a technical nature from the Panel and shall report results directly to the Panel.

(b) Membership of the Committee shall consist of up to five technical representatives as may be designated by each National Section of the Commission.

(c) Members of the Committee shall analyze proposed management regimes, provide technical assistance in the development of proposals for management plans,

explain technical reports and provide information and technical advice to their respective National Sections of the Panel.

(d) The Committee shall work with the Commission staff during pre-season development of the fishery regime and management plan and during in-season consideration of regulatory options for the sockeye and pink salmon fisheries of Fraser Panel Area waters and during post-season evaluations of the season to ensure that:

(i) domestic allocation objectives of both Parties are given full consideration;

(ii) conservation requirements and management objectives of the Parties for species and stocks other than Fraser River sockeye and pink salmon in the Fraser Panel Area during periods of Panel regulatory control are given full consideration; and

(iii) the Commission staff is informed in a timely manner of management actions being taken by the Parties in fisheries outside of the Fraser Panel Area that may harvest sockeye and pink salmon of Fraser River origin.

(e) the Commission staff shall consult regularly in-season with the Committee to ensure that its members are fully informed in a timely manner on the status of Fraser River sockeye and pink salmon stocks, and the expectations of abundance, migration routes and proposed regulatory options, so the members of the Committee can brief their respective National Sections prior to each in-season Panel meeting.

10. The Parties agree that Panel management actions should meet the following objectives, listed in order of priority:

(a) obtain spawning escapement goals by stock or stock grouping;

(b) meet Treaty defined international allocation; and

(c) achieve domestic objectives.

11. The Panel shall manage its fisheries in a manner consistent with the other chapters of Annex IV to ensure that the conservation needs and management requirements for other salmon species and other sockeye and pink salmon stocks are taken into account.

12. The Parties agree to develop regulations to give effect to the provisions of the preceding paragraphs. Upon approval of the pre-season plan and during the period of Panel regulatory control, all sockeye and pink fisheries under the Panel's jurisdiction are closed

unless opened for fishing by in-season order of the Panel.

13. Pursuant to the Parties' obligations under Article VI the Panel shall use the following in-season decision process:

(a) The mid-point forecast provided by Canada shall be used for management purposes until in-season updates of run size become available. Based upon advice from the Committee and Commission staff, the Panel may adopt more precautionary or optimistic applications of the forecast information until in-season updates of run size are available. The Commission staff shall provide the Panel with recommendations for in-season run size and other factors relevant to sound fisheries management decisions. The Parties and the Commission staff shall identify further their responsibilities in annual workplans. Based on information such as, but not limited to, in-season estimates of run timing and diversion rate, the Commission staff shall make recommendations to the Panel regarding in-season decision-making.

(b) The Commission staff shall provide the Panel with projected harvestable surpluses and status of harvest from fisheries under Panel management. These projections shall incorporate any Panel decision on management adjustments that deal with environmental conditions during in-river migration that could significantly impact the Panel's ability to achieve spawning escapement objectives and other considerations mutually decided to by the Panel.

(c) Any changes from the Commission staff recommendations for paragraphs 13(a) and 13(b) shall be based on mutual consent of the National Sections of the Fraser Panel. Acceptance of the Commission staff recommendation requires approval of at least one of the National Sections.

(d) The respective National Sections of the Panel shall develop proposed regulations for their domestic Panel Area fisheries consistent with recommendations and projections provided by the Commission staff as described in paragraphs13(a) and 13(b) as may be modified pursuant to paragraph 13(c). Either National Section may ask the Commission staff for advice in designing its fisheries proposals. The Commission staff shall assess and provide advice as to whether proposed fishery regulations for Panel Area fisheries are consistent with recommendations and projections described in paragraphs 13(a) and 13(b) and Panel objectives.

Subsequently, after full discussion of a Panel Area fishery proposal, the following may occur: (i) the Panel may adopt the proposal based on mutual consent or; (ii) the proposing National Section may modify and re-submit its proposal in response to advice from staff or concern(s) raised by the other National Section; or (iii) while acknowledging objection(s) of the other National Section, the Panel shall approve the fishery proposal. If the Panel approves a fishery under the latter circumstance (paragraph 13(d)(iii)), prior to the commencement of the proposed fishery, the proposing National Section must provide a written rationale for the proposed fishery.

(e) If, post-season, a Party believes that it has been adversely affected by a fishery that is objected to pursuant to paragraph 13(d)(iii) or paragraph 13 (f); the Commission staff shall prepare an objective report on the circumstances of the fishery and its consequences for the January Commission meeting following the season in question. The Panel shall review the staff report and determine what action is required. If the Panel cannot come to a mutual decision on the appropriate action, the issue shall be referred to the Commission for resolution during its February annual meeting.

(f) Pursuant to Article VI, paragraph 7 of this Treaty, the Parties shall communicate and consult with one another in a timely manner regarding their fishing plans for Fraser River sockeye outside of the Panel's regulatory control. If a party has an objection to the other party's fishing plans as they relate to achievement of Panel objectives, the implementing party will provide the rational for such plans.

14. The Parties agree that:

(a) Fraser River sockeye are caught incidental to fisheries in Alaska District 104 directed at pink salmon;

(b) Fraser River sockeye comprise a minor portion of the catch in that fishery and are not the target stock in that fishery;

(c) the extent of these incidental catches is unpredictable from year to year; and

(d) paragraph 8(c)(v) is premised on the fact that the circumstances described in paragraphs 14(a), (b) and (c) are ongoing.

Chapter 5: Coho Salmon

This Chapter shall apply to the period from 2019 through 2028.

1. Recognizing that some coho stocks are below levels necessary to sustain maximum harvest, the Parties shall develop regimes for the sustainable management of coho stocks.

2. The Parties shall establish regimes for their fisheries that are consistent with management objectives described in this Chapter and that are recommended and approved by the Commission:

   (a) for coho stocks that are shared by the respective fisheries of the U.S. and Canada, the Southern Panel shall recommend fishery regimes for coho salmon that originate in rivers with mouths situated south of Cape Caution, as provided in Annex I to this Treaty; and

   (b) for coho stocks that are shared by the respective fisheries of the U.S. and Canada, the Northern Panel shall recommend fishery regimes, as provided in Attachment B, for coho salmon that originate in rivers with mouths situated between Cape Caution and Cape Suckling.

3. The Northern Boundary Technical Committee shall carry out technical assignments, at the direction of the Northern Panel and the Commission, for coho salmon that originate in rivers and mouths situated between Cape Caution and Cape Suckling, to:

   (a) evaluate the effectiveness of management actions;

   (b) identify and review the stocks' status;

   (c) provide current information on the stocks' harvest rates and patterns, and develop a database for assessments;

   (d) collate available information on the stocks' productivity in order to identify escapements and associated exploitation rates that produce maximum sustainable harvests (MSH);

   (e) provide historical catch data, associated fishing regimes, and information on stock composition in fisheries harvesting these stocks;

   (f) devise analytical methods to develop alternative regulatory and production strategies to meet the Commission's objectives;

   (g) identify information and research needs, which include monitoring programs for

stock assessments; and

(h) for each season, conduct stock and fishery assessments and recommend to the Commission conservation measures that are consistent with the principles of this Chapter.

Southern Coho Management Plan

4. This Southern Coho Management Plan ("Plan") specifies how the Parties' fisheries impact on coho salmon that originate in southern British Columbia, Washington and Oregon shall be managed, subject to future approved technical refinements. The Parties shall implement this Plan in their respective fisheries, as well as any technical refinements that are approved.

5. The Parties shall cooperate to develop coho salmon management programs that are designed to:

(a) limit total fishery exploitation to enable management units ("MUs") to produce MSH over the long term and to maintain the genetic and ecological diversity of the component populations; further MSH is interpreted throughout this Chapter to include the concept of maintaining the genetic and ecological diversity of component populations;

(b) improve long-term prospects to sustain healthy fisheries for both Parties;

(c) establish an approach to fishery resource management that responds to resource status, that is cost-effective, and sufficiently flexible to use technical capability and information as they are developed and approved;

(d) provide a predictable framework for planning a fishery's impact on naturally spawning populations of coho; and

(e) establish an objective means to monitor, evaluate and modify the management regimes, as appropriate.

6. The Parties shall establish and maintain a joint Working Group to implement this Plan. The Working Group shall develop assessment tools and resolve technical differences that may arise. The Working Group shall develop mechanisms to address circumstances

when annual limits on exploitation rates (ER)[26] for boundary area fisheries are exceeded. These mechanisms may include provisions for management error and adjustments for overages, but shall not create catch entitlements for any fishery or Party.

7. The Parties shall establish and maintain a joint Coho Technical Committee (the "Committee") that reports, unless otherwise approved by the Parties, to the Southern Panel. The Committee shall, *inter alia,* at the direction of the Panel:

(a) evaluate the effectiveness of management actions;

(b) identify and review the stocks' status;

(c) provide current information on the stocks' harvest rates and patterns, and develop a joint database for assessments;

(d) review available information on the productivity of coho stocks in order to support identification of escapements and associated ERs, which produce MSH;

(e) devise analytical methods or recommendations for consideration by the Working Group to develop alternative regulatory and production strategies and to address uncertainties caused by data limitations and variation in environmental conditions, in order to meet the Southern Panel's objectives;

(f) identify the information and research needs that are required to implement this Plan;

(g) develop and enhance regional coho pre-season and post-season evaluation tools and protocols to provide a consistent means of evaluating the cumulative impact of U.S. and Canadian fisheries on MUs and stocks of conservation concern;

(h) oversee the exchange of the Parties' determinations of the status of MUs and information on abundance and distribution of coho that are available for the upcoming season, and review the technical basis for that information;

(i) review the ERs that result from the application of this Plan and advise the Southern Panel if impacts on the MUs are excessive, given the status of those affected MUs;

(j) oversee the exchange of pre-season expectations and post-season estimates of

[26] $\frac{\text{TotalFishingMortality}_{\text{allfisheries}}}{\text{TotalFishingMortality}_{\text{allfisheries}} + \text{Escapement}}$

MU-specific mortalities in the fisheries of each Party;

(k) oversee the exchange of information regarding mark-selective fisheries, including estimates of interceptions of mass-marked hatchery coho, if requested by the Southern Panel; and

(l) undertake bilateral, technical investigations and recommend methods to address data uncertainty and the impact of environmental change, for consideration by the Working Group.

8. Unless otherwise approved by the Parties, the Parties shall:

(a) manage their fisheries to limit ERs on the following MUs:

Southern B.C. Inside Management Units	**U.S. Inside Management Units**
Interior Fraser	**Skagit**
Lower Fraser	**Stillaguamish**
Strait of Georgia	**Snohomish**
	Hood Canal
	Strait of Juan de Fuca
	U.S. Outside Management Units
	Quillayute
	Hoh
	Queets
	Grays Harbor

(b) establish and document the derivation of the following targets for MUs that originate within their respective jurisdictions:

(i) escapement goal or ER that achieves MSH;

(ii) MSH ERs for each MU; and

(iii) ERs for three status categories, *Low*, *Moderate* and *Abundant.* Each Party shall provide maximum ER targets for each MU and status category that originate within its jurisdiction. Until a Party provides the MU ER targets, that Party shall provide maximum ER targets for each MU that originate

within its jurisdiction consistent with the attainment of MSH and within the ranges defined below:

Status	Total Exploitation Rate
Low	Up to 20 %
Moderate	21% – 40 %
Abundant	41% – 65 %

(c) manage all fisheries in their respective jurisdictions, whether directed at coho or not, whether mark-selective or not, to ensure that cumulative ERs on MUs described in paragraph 8(a) do not exceed the limits established in paragraph 9, except:

(i) Until Canada establishes status determination methods for Canadian MUs other than the Interior Fraser MU, the Parties shall implement this Chapter to comply with status and associated ER caps that relate to the Interior Fraser MU and U.S. MUs only. The Parties shall jointly discuss the management for status and ER caps for the other MUs. Timing of implementation of management to the remaining Canadian MUs shall be included in the discussions.

(ii) The MU status determination methods developed by a Party shall be reviewed by the Committee. The Committee shall provide recommendations to the Parties for consideration in improving the effectiveness of the management regime. When a Party completes or updates the status determination methods, breakpoints, and associated ER caps for any of its MUs, the Parties shall discuss a Party's intention to introduce individual MUs for management via a meeting of the bilateral Working Group.

(iii) When Canada completes determination of status for Canadian MUs that are not yet implemented under this Chapter, the Parties shall include these MUs in the Plan for the season after completion of their status determination methods, bilateral scientific review, and bilateral

implementation talks, as long as Canada provides sufficient notice to the U.S. prior to the Commission's annual management cycle. In most circumstances, this notice is required during or prior to the annual Fall session of the Commission;

(d) implement additional fishery management measures that are practicable and necessary to conserve component stocks of the MUs that originate within their respective jurisdictions;

(e) maintain capabilities and programs to conduct stock assessments, evaluate fishery impacts, and meet this Plan's objectives;

(f) improve coordination between their domestic management processes through regular bilateral preseason planning discussions at regularly scheduled Panel meetings and through timely bilateral information exchange among fishery managers;

(g) each year, through their respective domestic processes, classify the status of each MU that originates in their rivers as, *Low*, *Moderate* or *Abundant*, and provide any changes in maximum, status-dependent ERs. In mid-March every year, the Parties shall exchange information on the status of each MU, the associated ER that applies to each MU and other factors, including preliminary fishery expectations, that are relevant to the development of plans for their respective fisheries, including those that may result in domestic constraints below the ER caps specified in this Chapter to facilitate domestic fishery planning processes. In any given year, the Parties shall not change the status or associated ER caps for an MU after March 31; and

(h) By June 30 of each year, through Canadian and U.S. domestic management authorities, exchange information on the implementation of management measures to ensure that the cumulative ERs do not exceed allowable levels for MUs and that total exploitation by all fisheries is consistent with target levels established by the Parties for resource conservation. Specifically:

(i) By April 30 of each year, the U.S. shall provide Canada with projected ERs for its fisheries on Interior Fraser MU for the coming season,

(ii) When methodologies to establish status benchmarks and associated ER caps have been established for other Canadian MUs, the U.S. shall provide Canada with estimates of the impact of its fisheries on the Canadian MUs by April 30 in addition to the Interior Fraser MU,

(iii) By June 30 of each year, Canada shall provide the U.S. with projected ERs for its fisheries on U.S. MUs specified in paragraph 8(a) for the coming season.

9. Each Party shall, in the pre-season, plan its intercepting fisheries so that the total ERs do not exceed the MU-specific ER caps as follows:

(a) The following principles apply to the ER caps in the tables in sub-subparagraphs 9(b) to (d):

(i) For MUs in *Low* status, the Parties shall plan and manage their respective fisheries to reduce the impact on those MUs. The producing Party shall bear a greater share of the conservation responsibility for MUs in *Low* status, and the intercepting Party shall not be required to reduce its impact below a 10% ER, subject to actions that may be taken under paragraph 11(b),

(ii) For MUs in *Moderate* status, the producing Party should receive the majority of the allowable ER; this share should increase for MUs in *Abundant* status, and

(iii) Neither Party should be unduly prevented from accessing its own stocks to achieve its fishery objectives or harvesting other allocations agreed under this Treaty;

(b) Canadian ER cap on U.S. Inside MUs (Table 1):

Condition of U.S. Inside MUs	**Canadian ER Caps**	**MU Applicability**
Normal Low (> 1 Inside MU low)	0.11	All MUs with Total ER ≤ 0.20
Composite Low (Only 1 Inside MU Low)	0.13	The MU with Total ER ≤ 0.20
Normal Moderate (> 1 Inside MU Moderate)	.124 + .13 x ER	All MUs with 0.20<Total ER ≤ 0.40
Composite Moderate (Only 1 Inside MU Moderate)	.134 + .13 x ER	The MU with 0.20<Total ER ≤ 0.40
Abundant	.084 + .28 x ER	MUs with 0.40<Total ER ≤ 0.60
Abundant	.024 + .38 x ER	MUs with 0.60 < Total ER

(c) Canadian ER cap on U.S. Outside MUs (Table 2):

Condition of U.S. Outside MUs	**Canadian ER Caps**	**MU Applicability**
Normal Low (> 1 Outside MU low)	0.10	All MUs with Total ER ≤ 0.20
Composite Low (Only 1 Outside MU Low)	0.12	The MU with Total ER ≤ 0.20
Normal Moderate (> 1 MU Outside Moderate)	.024 + .38 x ER	All MUs with 0.20<Total ER ≤ 0.40
Composite Moderate (Only 1 Outside MU Moderate)	.054 + .33 x ER	The MU with 0.20<Total ER ≤ 0.40
Abundant	.024 + .38 x ER	MUs with 0.40 < Total ER

(d) U.S. status-dependent ER caps for Canadian MUs are specified in this table and shall only be used to manage the impacts of the Parties' respective fisheries on the Interior Fraser MU until Canada develops biological status determination methods for the other Canadian MUs. The Parties agree that the status of the Interior Fraser MU shall be managed at a *Low* status until Canada establishes status determination methods that would provide the basis for a change:

Condition of Canadian MUs	**U.S. ER Caps**	**MU Applicability**
Low	0.10	All MUs with Total ER ≤ 0.20
Moderate	0.12	All MUs with 0.20<Total ER ≤ 0.40
Abundant	0.15	MUs with 0.40<Total ER

(e) The Parties recognize that bilateral review of methodologies employed to establish target MU-specific status-dependent ERs is desirable;

(f) The intercepting ER caps established for each Party under this paragraph are maximums. If, for any MU, the intercepting Party does not require the full ER cap to harvest its own stocks, that Party may implement fishing plans that result in ERs below the caps. If this occurs, the producing Party may plan fisheries to use the unused portion of the cap, if the cumulative ER limit established for that MU is not exceeded;

(g) If a producing Party identifies concerns about increasing trends in ER on its MU by the intercepting Party over two or more years, the Parties shall initiate a bilateral discussion on an appropriate response for implementation in the following year;

(h) The Parties shall establish a bilateral technical plan to develop and implement this Chapter. The Parties commit to joint development of pre-season planning and post-season evaluation tools and protocols. If the Parties determine that implementation experience and the bilateral planning tools and protocols indicate that the ER caps specified in paragraphs 9(b) to (d) are inconsistent with the

objectives identified in paragraph 5, the Parties shall undertake discussions, which may refer to the work of the Committee described in paragraph 7, to revise these ER caps in a manner that is consistent with those objectives.

10. Each year, the Committee shall provide post-season estimates of MU ERs for fisheries conducted two years prior, as well as pre-season estimates of MU ERs planned for the upcoming season. The Committee shall review estimates of ERs to determine why ER limits established pursuant to paragraphs 9(b) to (d) were exceeded, or if there are trends identified under paragraph 9(g), including the effects of management error, imprecision or uncertainty of abundance forecasts. The Committee shall report the results to the Southern Panel, and if the ER limits under paragraphs 9(b) to (d) are exceeded, the Parties shall discuss whether the regimes should be adjusted to meet the objectives of this Chapter.

11. Each Party may:

(a) plan and manage fisheries to achieve a lower ER than the rates allowed under paragraphs 9(b) to (d) to address domestic management objectives;

(b) request additional reductions in ERs determined under paragraphs 9(b) to (d) to meet critical conservation concerns not adequately addressed by the ER caps. The requesting Party shall describe the measures taken in its own fisheries to respond to the conservation concern and make its request in a timely manner relative to pertinent management planning processes. The Southern Panel shall develop bilateral guidance to indicate how this could be implemented in a responsible and timely manner during a Party's domestic preseason planning;

(c) request increases in the MU-specific ER caps determined under paragraphs 9(b) to (d) if the Party can demonstrate that the ER caps prevent it from accessing its own stocks to meet its fishery management objectives or from harvesting other allocations provided under this Treaty. The Southern Panel shall develop bilateral guidance to indicate how this could be implemented in a responsible and timely manner during a Party's domestic preseason planning; and

(d) request that the Committee evaluate the performance of the management regime described in this Plan and recommend measures to correct for systematic biases and potential improvements to the Southern Panel.

12. The Parties shall review this Plan no later than three years after this Chapter enters into force and every three years after that date, unless otherwise specified by the Southern Panel. The review shall include an assessment of the effectiveness of this Plan in achieving the management objectives of the Parties and any other issues either Party wants to raise, including, but not limited to:

    (a) whether the ER caps established under paragraphs 9(b) to (d) have prevented either Party from accessing its own stocks to meet its fishery management objectives or from harvesting other allocations that are provided under this Treaty; and

    (b) issues associated with the procedures and methods employed to estimate and account for total coho mortalities, including those incurred in mark-selective fisheries. The Parties shall modify this Plan, if necessary, based on the review and the need to incorporate results of bilateral technical developments (e.g., to establish criteria to define MUs and to biologically determine allowable ERs, to develop a common methodology for measuring ERs in Canadian and U.S. fisheries, development of bilateral management planning tools, etc.).

13. Test fisheries sanctioned by the Fraser Panel of the Commission for the purposes of providing information for the management of Fraser sockeye and pink salmon should be conducted in a manner that minimizes coho by-catch mortalities, unless those mortalities are required to support improvements in scientific or technical information about fish stocks.

Table 1. Canadian ER Caps on U.S. INSIDE MUs

	Total ER for U.S. MU	Canadian ER Cap		Canadian Share of Total ER	
		Normal	Composite	Normal	Composite
	0.10	0.110	0.130	110%	130%
	0.11	0.110	0.130	100%	118%
	0.12	0.110	0.130	92%	108%
	0.13	0.110	0.130	85%	100%
LOW	0.14	0.110	0.130	79%	93%
	0.15	0.110	0.130	73%	87%
	0.16	0.110	0.130	69%	81%
	0.17	0.110	0.130	65%	76%
	0.18	0.110	0.130	61%	72%
	0.19	0.110	0.130	58%	68%
	0.20	0.110	0.130	55%	65%
	0.21	0.151	0.161	72%	77%
	0.22	0.153	0.163	69%	74%
	0.23	0.154	0.164	67%	71%
	0.24	0.155	0.165	65%	69%
	0.25	0.157	0.167	63%	67%
	0.26	0.158	0.168	61%	65%
	0.27	0.159	0.169	59%	63%
	0.28	0.160	0.170	57%	61%
	0.29	0.162	0.172	56%	59%
MODERATE	0.30	0.163	0.173	54%	58%
	0.31	0.164	0.174	53%	56%
	0.32	0.166	0.176	52%	55%
	0.33	0.167	0.177	51%	54%
	0.34	0.168	0.178	49%	52%
	0.35	0.170	0.180	48%	51%
	0.36	0.171	0.181	47%	50%

0.37	0.172	0.182	47%	49%
0.38	0.173	0.183	46%	48%
0.39	0.175	0.185	45%	47%
0.40	0.176	0.186	44%	47%

Table 1 (cont'd)

	Total ER for U.S. MU		Canadian ER Cap		Canadian Share of Total ER	
			Normal	Composite	Normal	Composite
	0.41	0.199		48%		
	0.42	0.202		48%		
	0.43	0.204		48%		
	0.44	0.207		47%		
	0.45	0.210		47%		
	0.46	0.213		46%		
	0.47	0.216		46%		
	0.48	0.218		46%		
	0.49	0.221		45%		
	0.50	0.224		45%		
	0.51	0.227		44%		
	0.52	0.230		44%		
	0.53	0.232		44%		
	0.54	0.235		44%		
ABUNDANT	0.55	0.238		43%		
	0.56	0.241		43%		
	0.57	0.244		43%		
	0.58	0.246		42%		
	0.59	0.249		42%		
	0.60	0.252		42%		
	0.61	0.256		42%		
	0.62	0.260		42%		
	0.63	0.263		42%		
	0.64	0.267		42%		
	0.65	0.271		42%		

Table 2. Canadian ER Caps on U.S. OUTSIDE MUs

	Total ER for U.S. MU	Canadian ER Cap		Canadian Share of Total ER	
		Normal	Composite	Normal	Composite
	0.10	0.100	0.120	100%	120%
	0.11	0.100	0.120	91%	109%
	0.12	0.100	0.120	83%	100%
	0.13	0.100	0.120	77%	92%
LOW	0.14	0.100	0.120	71%	86%
	0.15	0.100	0.120	67%	80%
	0.16	0.100	0.120	63%	75%
	0.17	0.100	0.120	59%	71%
	0.18	0.100	0.120	56%	67%
	0.19	0.100	0.120	53%	63%
	0.20	0.100	0.120	50%	60%
	0.21	0.104	0.123	49%	59%
	0.22	0.108	0.127	49%	58%
	0.23	0.111	0.130	48%	56%
	0.24	0.115	0.133	48%	56%
	0.25	0.119	0.137	48%	55%
	0.26	0.123	0.140	47%	54%
	0.27	0.127	0.143	47%	53%
	0.28	0.130	0.146	47%	52%
	0.29	0.134	0.150	46%	52%
MODERATE	0.30	0.138	0.153	46%	51%
	0.31	0.142	0.156	46%	50%
	0.32	0.146	0.160	46%	50%
	0.33	0.149	0.163	45%	49%
	0.34	0.153	0.166	45%	49%
	0.35	0.157	0.170	45%	48%
	0.36	0.161	0.173	45%	48%

0.37	0.165	0.176	44%	48%
0.38	0.168	0.179	44%	47%
0.39	0.172	0.183	44%	47%
0.40	0.176	0.186	44%	47%

Table 2. (cont'd)

	Total ER for U.S. MU	Canadian ER Cap		Canadian Share of Total ER	
		Normal	Composite	Normal	Composite
	0.41	0.180		44%	
	0.42	0.184		44%	
	0.43	0.187		43%	
	0.44	0.191		43%	
	0.45	0.195		43%	
	0.46	0.199		43%	
	0.47	0.203		43%	
	0.48	0.206		43%	
	0.49	0.210		43%	
	0.50	0.214		42%	
	0.51	0.218		42%	
	0.52	0.222		42%	
	0.53	0.225		42%	
	0.54	0.229		42%	
ABUNDANT	0.55	0.233		42%	
	0.56	0.237		42%	
	0.57	0.241		42%	
	0.58	0.244		42%	
	0.59	0.248		42%	
	0.60	0.252		42%	
	0.61	0.256		42%	
	0.62	0.260		42%	
	0.63	0.263		42%	
	0.64	0.267		42%	
	0.65	0.271		42%	

Chapter 6: Southern British Columbia and Washington State Chum Salmon

This Chapter shall apply to the period from 2019 through 2028.

1. The Parties shall establish and maintain a Joint Chum Technical Committee (the "Committee"). The Committee shall report, unless the Parties otherwise decide, to the Southern Panel and the Commission. The Committee shall, *inter alia*:
   (a) maintain and present to the Panel historical catch and escapement information for stocks referred to in this Chapter;
   (b) use available information to estimate and document stock composition and exploitation rates in fisheries referred to in this Chapter;
   (c) annually review the Parties' assessment of stock status and fisheries activities for chum fisheries referred to in this Chapter;
   (d) identify high priority research and information needs for the Parties, including fishery and escapement monitoring and assessment, stock identification, and enhancement; and
   (e) periodically or when requested by the Panel;
      (i) exchange available information on the productivity and escapement requirements of stocks referred to in this this Chapter,
      (ii) identify and document stocks of concern (with respect to conservation) referred to in this Chapter,
      (iii) evaluate the effectiveness and performance of management strategies, and
      (iv) evaluate the effectiveness of alternative regulatory and production strategies recommended by the Parties.
2. When the Parties provide stock composition information for fisheries, the Committee shall evaluate and use bilaterally approved methods to report its conclusions.
3. The Parties shall assess catch levels and attempt to collect additional genetic samples from any chum salmon caught between July 1 and September 15 in the boundary area fisheries (U.S. Areas 4B, 5, 6C, 7, and 7A; Canadian Areas 18, 19, 20, 21, and 29).
4. From July 1 to September 15, Canada shall require the live release of chum salmon from all purse seine gear fishing in the Strait of Juan de Fuca (Canadian Area 20) and the United States (U.S.) shall require the same for the non-Indian seine fisheries in Areas 7

and 7A. By U.S. regulation, purse seine fisheries are not permitted in U.S. Areas 4B, 5, or 6C.

5. Canada shall manage its Johnstone Strait, Strait of Georgia, and Fraser River chum salmon fisheries to provide continued rebuilding of depressed naturally spawning chum salmon stocks, and, to the extent practicable, not increase interceptions of U.S. origin chum salmon. Terminal fisheries conducted on specific stocks with identified surpluses shall be managed to minimize the interception of non-targeted stocks.

6. Canada shall manage its Johnstone Strait mixed stock fishery as follows:

   (a) The Inside Southern Chum run size estimate by Canada of 1.0 million chum is defined as the Inside Southern Chum Critical Threshold. Inside Southern Chum salmon levels of less than this Threshold are considered critical for the purposes of this Chapter;

   (b) For run sizes above the Inside Southern Chum Critical Threshold, Canada shall conduct fisheries with an exploitation rate of up to 20% in Johnstone Strait of Inside Southern chum salmon; and

   (c) When run sizes are expected to be below the Inside Southern Chum Critical Threshold, Canada shall notify the U.S. and shall only conduct assessment fisheries and non-commercial fisheries. Canada shall suspend the operation of commercial fisheries that target chum salmon in Johnstone Strait.

7. Canada shall manage its Fraser River fisheries for chum salmon as follows:

   (a) For Fraser River terminal area run sizes, identified in-season at abundance levels lower than 900,000 chum salmon, the Canadian commercial chum salmon fisheries within the Fraser River and in associated marine areas (Area 29), shall be suspended; and

   (b) For Fraser River terminal area run sizes, identified in-season at abundance levels greater than 900,000 chum salmon, the Canadian commercial chum salmon fisheries within the Fraser River shall be guided by the limits of the in-river Total Allowable Catch set by Canada.

8. Canada shall manage the Nitinat gill net and purse seine fisheries for chum salmon to minimize the harvest of non-targeted stocks.

9. The U.S. shall manage its chum salmon fishery in Areas 7 and 7A as follows:

(a) Inside Southern chum salmon levels of less than the Inside Southern Chum Critical Threshold of 1.0 million as estimated by Canada are considered critical for purposes of this Chapter;

(b) For the run sizes below the Inside Southern Chum Critical Threshold, the U.S. catch of chum salmon in Areas 7 and 7A shall be limited to chum salmon taken incidentally to other species and in other minor fisheries, but shall not exceed 20,000. Catches for the purpose of genetic stock identification sampling shall not be included in this limit;

(c) For run sizes above the Inside Southern Chum Critical Threshold, the catch ceiling for the U.S. chum salmon fishery in Areas 7 and 7A shall be 125,000 chum salmon, except as provided in sub-paragraph (d);

(d) Canada shall provide a run size estimate of chum salmon entering the Fraser River no later than October 22 of each year. Canada shall notify the U.S. whenever Canada updates the formal Fraser River chum run size estimate if that update results in a change to the U.S. catch ceiling. If the Fraser run size estimate is less than 1,050,000, the U. S. shall limit its fishery impacts on Fraser River chum salmon by restricting catch in Areas 7 and 7A to not exceed 20,000 additional chum salmon from the day following the date the U.S. is notified. If the Fraser River run size estimate is between 1,050,000 and 1,600,000, the U.S catch ceiling shall remain at 125,000. If the Fraser River run size estimate is above 1,600,000, the U.S. catch ceiling shall be revised to 160,000;

(e) U.S. commercial fisheries for chum salmon in Areas 7 and 7A shall not occur prior to October 10 of each year;

(f) The U. S. shall manage the Areas 7 and 7A fisheries for chum salmon in order to minimize the harvest of non-target species;

(g) U.S. catch shortfalls may not be accrued; however, overages shall be carried forward as indicated in sub-paragraphs (h), (i), and (j);

(h) Due to management imprecision:

(i) if the U.S. chum catch ceiling is 125,000, a catch in the U.S. of up to 135,000 chum salmon shall not result in an overage calculation. A catch

that exceeds 135,000 shall result in an overage, which is calculated by subtracting 125,000 from the total U.S. chum catch; and

(ii) if the U.S. chum catch ceiling is 160,000, a catch in the U.S. of up to 170,000 shall not result in an overage calculation. A catch that exceeds 170,000 shall result in an overage, which is calculated by subtracting 160,000 from the total U.S. chum catch;

(i) Overages under paragraph 9 (h)(i) or 9 (h)(ii) shall be accounted for by reducing the U.S. annual catch ceilings in up to two subsequent non-critical Inside Southern chum salmon years;

(j) From the day following the date the U.S. is notified of a run size below the Inside Southern Chum Critical Threshold as defined in paragraph 9(a) or below a Fraser River chum run size estimate of 1,050,000, any catch that exceeds 20,000 chum salmon results in an overage. Overages shall be accounted for by reducing the U.S. annual catch ceilings in up to two subsequent non-critical Inside Southern chum salmon years;

(k) If, subsequent to the revision of the U.S. catch ceiling to 160,000, further in-season run size information changes such that the Fraser River chum run size estimate is revised downward to between 1,050,000 and 1,600,000, the U.S. shall manage their fisheries in Area 7 and 7A to stay below the catch ceiling of 125,000. If the lower catch ceiling has already been reached, the U.S. shall terminate these fisheries; and

(l) In the circumstances described in paragraph 9(k), overage calculations shall be based on the highest catch ceiling determined in that season provided the U.S. terminates these fisheries.

10. The U.S. shall conduct its chum salmon fishery in the Strait of Juan de Fuca (U.S. Areas 4B, 5 and 6C) with a view to maintaining the limited effort nature of this fishery, and, to the extent practicable, not increase interceptions of Canadian origin chum salmon. The U.S. shall continue to monitor this fishery to determine if recent catch levels indicate an increasing level of interception.

11. The Parties shall exchange all information concerning non-target catch of other salmon species, including steelhead, from the chum salmon fisheries covered by this Chapter in the annual post-season report.

12. If circumstances arise that are inconsistent with a Party's understanding of the intent of this Chapter, the Southern Panel shall discuss the matter in the post-season and explore options for taking the appropriate corrective action.

Chapter 7: General Obligations

With respect to intercepting fisheries not dealt with elsewhere in this Annex, unless otherwise agreed, neither Party shall initiate new intercepting fisheries, nor conduct or redirect fisheries in a manner that intentionally increases interceptions.

Chapter 8: Yukon River (added December 4, 2002)

1. The Parties recognize:
   (a) the uniqueness of the Yukon River and its salmon fisheries; having as their principal goal to rebuild and conserve stocks and provide benefits to the fisheries of both countries on this river system, which means the maintenance in both countries of viable fisheries on the Yukon River;
   (b) that subsistence fisheries in Alaska have priority over other fisheries in Alaska;
   (c) that aboriginal fisheries in Yukon have priority over other fisheries in Yukon;
   (d) that salmon stocks originating from the Yukon River in Canada are harvested by fishers of both Canada and the United States and that effective conservation and management of these resources are of mutual interest; and
   (e) that considerable work remains to be done to understand the composition of stocks in the various Yukon River fisheries and to develop effective management techniques based on precautionary management approaches.

Definitions

2. For the purpose of this Chapter,
   (a) "Enhancement" means expanding a wild salmon stock beyond its natural production level;

(b) "Mainstem Yukon River in Canada" means the Yukon River drainage in Canada, excluding the Porcupine River drainage;

(c) “Restoration” means returning a wild salmon stock to its natural production level;

(d) “Yukon” means the Yukon Territory of Canada;

(e) "Yukon River" means the entire Yukon River drainage in Canada and the United States;

(f) "Yukon River in Canada" means the entire Yukon River drainage in Canada, including the Porcupine River drainage; and

(g) “Total Allowable Catch (TAC)” means the total run size of each salmon stock less the agreed spawning escapement objective for that stock.

Application

3. This Chapter applies to salmon originating in the Yukon River.

General

4. Each Party shall designate its management entity responsible for the harvest of salmon referred to in paragraph 3.

5. The Parties shall seek to ensure effective conservation and management of stocks originating in the Yukon River.

6. When a fishery is managed under a guideline harvest range regime:

(a) the United States shall manage its fishery with a view to delivering to the Alaska-Yukon border the agreed spawning objective plus the midpoint of the Canadian guideline harvest range; and

(b) Canada shall manage its fishery within its guideline harvest range with a view to achieving the agreed spawning escapement objective. In years when the number of salmon reaching the Yukon River mainstream border exceeds the upper end of the Canadian guideline harvest range plus the upper end of the agreed spawning escapement objective, Canada may, subject to paragraph 18, utilize the surplus.

7. The respective management entities shall consult closely and where possible co-ordinate pre season management planning and in season responses to run assessments. If it is

determined in season that pre season management measures agreed to by the Panel are insufficient to achieve agreed spawning escapement objectives, the management entities shall consider taking further conservation measures to meet the escapement objectives.

8. The harvest sharing arrangement for Canadian-origin Mainstem Yukon River chum salmon shall be specified in Appendix 1, as amended from time to time by agreement of the Parties.

9. The harvest sharing arrangement for Canadian-origin Mainstem Yukon River chinook salmon shall be specified in Appendix 2, as amended from time to time by agreement of the Parties.

10. Subject to budgetary limitations, the Parties shall seek to implement the fisheries research and management programs recommended by the Panel on the advice of the Joint Technical Committee (JTC) for co-ordinated management of Yukon River chum and chinook salmon stocks.

11. Notwithstanding paragraph 10, each Party shall seek to implement such research and management programs as may be required to implement this Agreement.

12. The Parties shall maintain efforts to increase the in river run of Yukon River origin salmon by reducing marine catches and by-catches of Yukon River salmon. They shall further identify, quantify and undertake efforts to reduce these catches and by-catches.

Yukon River Panel

13. Subject to the approval of the Parties, the Yukon River Panel shall make such by laws and procedural rules for itself as may be necessary for the exercise of its functions and the conduct of its meetings.

14. The Yukon River Panel shall make recommendations to the management entities concerning the conservation and co-ordinated management of salmon originating in the Yukon River in Canada.

15. The respective management entities shall take into account the recommendations of the Yukon River Panel in the adoption of regulations, and shall ensure the enforcement of these regulations. These entities shall exchange annual fishery management plans prior to each season.

16. Based on recommendations of the Joint Technical Committee,

(a) the Yukon River Panel may from time to time recommend spawning escapement objectives for implementation by the Parties through their management entities; and

(b) the Yukon River Panel may revise the spawning escapement objectives for rebuilt stocks in Appendixes 1 and 2.

17. Each year the Yukon River Panel shall review the performance of the fishery management regimes of both Parties for the preceding season with a view to making recommendations to the respective management entities for improving management performance in order to achieve agreed objectives in future years.

18. For any year when a strong run is anticipated, the Yukon River Panel may recommend a spawning escapement objective greater than the agreed level.

19. If the Panel makes such a recommendation as specified in paragraph 18, the United States will endeavour, for that year, to deliver to the Canadian border on the mainstem Yukon River the number of salmon necessary to meet the spawning escapement objective recommended by the Panel, plus the agreed Canadian harvest share.

20. In any year of a strong run, the United States agrees to consider increasing the border escapement to a level greater than agreed in order to allow a higher spawning escapement for that year.

Joint Technical Committee

21. The Parties shall maintain the Yukon River Joint Technical Committee (JTC) established by paragraph C.2 of the Memorandum of Understanding regarding the Treaty, done at Ottawa 28 January 1985, which shall continue to report to the Yukon River Panel. The JTC shall meet annually or more frequently at the direction of the Yukon River Panel to, *inter alia*:

(a) assemble and refine information on migratory patterns and the extent of exploitation in fisheries harvesting Yukon River origin salmon;

(b) review existing assessment techniques and investigate new ways for determining total return and escapement and make recommendations on optimum spawning escapement objectives;

(c) examine past and current management regimes and recommend how they may be better formulated to achieve escapement objectives;

(d) exchange information on existing and proposed restoration and enhancement programs, identify restoration and enhancement opportunities and evaluate the management consequences of harvests of restored or enhanced fish;

(e) develop and recommend restoration and enhancement programs to be funded by the Yukon River Salmon Restoration and Enhancement Fund;

(f) monitor and co-ordinate agreed research programs and recommend research required in order of priority to enable the Parties to effectively implement this Chapter;

(g) evaluate annually the status of Canadian origin chum and chinook salmon stocks and make recommendations for adjustments to the rebuilding programs set out in this Chapter;

(h) annually, no later than 30 April, provide the Panel with run outlooks and proposed in-season management strategies designed to achieve escapement objectives and agreed harvest shares of Canadian-origin salmon stocks;

(i) use existing procedures and investigate new ways to evaluate progress in rebuilding salmon stocks where necessary;

(j) investigate and recommend stock separation studies that would assist in developing specific fishery management programs for individual salmon stocks;

(k) review and analyse the effectiveness of alternative fishery regulatory measures to satisfy conservation objectives;

(l) submit an annual report to the Yukon River Panel on fishery performance, including harvests and fishing effort of all user groups, fish values made available by either side and biological status of stocks;

(m) review information available on coho salmon originating in the Yukon River, and undertake assessments of such stocks;

(n) report on the condition of salmon habitat and recommend measures to be taken to protect or enhance salmon habitat;

(o) when appropriate, provide an evaluation of the ecological and genetic risks of restoration or enhancement, socio-economic impacts, and identify alternative actions including but not restricted to fishery management actions;

(p) recommend levels for restored stocks consistent with natural habitat capacity; and

(q) undertake other assignments as may be requested from time to time by the Yukon River Panel.

Rebuilding Mainstem Yukon River Chum and Chinook Stocks

22. With respect to chum and chinook salmon originating in the Yukon River in Canada, when spawning escapements fall below target levels for rebuilt stocks as specified in Appendices 1 and 2 to Chapter 8, Annex IV, upon recommendation of the Yukon River Panel, the Parties shall, through their respective management entities, implement a brood year rebuilding program for the Canadian mainstem stocks. The objective of the rebuilding plan shall be to systematically, as per paragraph 23 below, rebuild the spawning escapement in subsequent return years to the escapement objectives specified from time to time in Appendix 1 for chum and in Appendix 2 for chinook salmon.

23. The rebuilding program shall take into account the relative health of the brood years with the object of rebuilding stronger brood years in one cycle and weaker brood years in no more than three cycles in equal increments. For greater certainty, a cycle for chum salmon is typically considered to be four years, and for chinook salmon, six years, although the Panel may incorporate other age components in designing rebuilding programs.

24. Based on the recommendations of the JTC, the Yukon River Panel shall establish and modify as necessary interim escapement objectives of the rebuilding program.

Porcupine River

25. To ensure maximum benefits accrue to Porcupine River spawning escapements, the Parties shall:

(a) not initiate new fisheries on Canadian origin stocks within the Porcupine River drainage before December 31, 2006; and

(b) following this period, any Party that intends to initiate a new fishery on the Porcupine River shall inform the Yukon River Panel, which shall recommend conservation and management measures.

26. With respect to the Fishing Branch River chum salmon, the Parties agree that when spawning escapements fall below target levels for this stock as specified in Appendix 1 to Attachment B, the Yukon River Panel shall consider the need to develop a rebuilding plan based on information and analysis from the JTC. If the Yukon River Panel decides that such a plan is needed, it shall request the JTC to prepare a range of rebuilding plan options, including allowing this stock to rebuild as a result of the rebuilding program for the Yukon River Mainstem fall chum salmon stock. The Panel shall determine which plan to recommend to the respective management entities.

27. The Parties shall, through their respective management entities, implement the rebuilding plan.

28. Following rebuilding, the Yukon River Panel may recommend catch shares for the Canadian origin Porcupine River chum salmon stocks.

29. If sufficient information becomes available for chinook and coho salmon stocks originating in the Porcupine River in Canada, the Panel, upon recommendation of the JTC, shall develop a conservation and management program for these stocks.

Habitat

30. In light of the benefits they receive from the salmon originating in their portions of the Yukon River, the Parties agree that:

(a) salmon should be afforded unobstructed access to and from, and use of, existing migration, spawning and rearing habitats;

(b) respective water quality standards should be maintained and enforced;

(c) productive capacity of the salmon habitat on both sides of the Alaska-Yukon border should be maintained in order to achieve the objectives of this Chapter; and

(d) should access be obstructed, water quality standards be degraded or productive capacity of the salmon habitat be diminished to a degree that affects the objectives established in this Chapter, the Yukon River Panel may recommend corrective actions which may include adjustments to fishing patterns, border escapement objectives and guideline harvest ranges.

Restoration and Enhancement

31. Each Party shall assist the Yukon River Panel in developing and implementing the programs referred to in paragraph 1 of Attachment C and shall, in particular, provide essential support, as required, for programs in its portion of the Yukon River.

32. Unless the Parties jointly decide otherwise, on the basis of recommendations by the Yukon River Panel, the primary objective of:

    (a) restoration and conservation programs and projects shall be to increase spawning escapements in areas requiring restoration;

    (b) enhancement projects shall be to increase harvests taking into account the conservation of wild stocks.

33. Harvest shares for salmon produced by enhancement activities shall be recommended by the Yukon River Panel.

34. The Principles and Guidelines for operation of the Yukon River Restoration and Enhancement Fund are set out in Appendix 1 to Attachment C.

35. Contributions to be made by the United States to the Fund are set out in Appendix 2 to Attachment C.

Appendix 1: Escapement Objectives for and Harvest Sharing of Canadian-Origin Chum Salmon

1. Subject to paragraph 16 of this Chapter, the Parties agree that the escapement objective for the rebuilt chum salmon stock:

    (a) in the mainstem Yukon River in Canada shall be greater than 80,000 chum salmon; and

    (b) upstream from the Fishing Branch River weir site shall be 50,000 to 120,000 chum salmon.

2. Harvest of Mainstem Yukon River chum salmon shall be shared beginning in 2001, and continuing until amended by the Parties, on the following basis:

    (a) when the Total Allowable Catch (TAC) is between zero and 120,000 chum salmon, the guideline harvest range for Canada shall be between 29% and 35% of the TAC;

(b) when the TAC is above 120,000 chum salmon, the guideline harvest range shall be between 29% and 35% of 120,000, i.e., 34,800 and 42,000 chum salmon, plus 50% of the portion of the TAC greater than 120,000 chum salmon.

Appendix 2: Escapement Objective for and Harvest Sharing of Canadian-Origin Yukon River Chinook Salmon

1. Subject to paragraph 16 of this Chapter, the Parties agree that the spawning escapement objective for the rebuilt chinook salmon stock in the Mainstem Yukon River shall be 33,000 to 43,000 chinook salmon.
2. Harvest of Mainstem Yukon River chinook salmon shall be shared beginning in 2001, and continuing until amended by the Parties, on the following basis:
   (a) when the Total Allowable Catch (TAC) is between zero and 110,000 chinook salmon, the guideline harvest range for Canada shall be between 20% and 26% of the TAC;
   (b) when the TAC is above 110,000 chinook salmon, the guideline harvest range for Canada shall be between 20% and 26% of 110,000, i.e., 22,000 and 28,600 chinook salmon, plus 50% of the portion of TAC greater than 110,000 chinook salmon.

Attachment C: Restoration and Enhancement Fund

1. Parties hereby establish the Yukon River Salmon Restoration and Enhancement Fund, hereinafter referred to as “the Fund”, to be managed by the Yukon River Panel, which shall be used for the following purposes:
   (a) programs, projects and associated research and management activities on either side of the Alaska-Yukon border directed at the restoration, conservation and enhancement of Canadian origin salmon stocks;
   (b) programs and projects that are directed at developing stewardship of salmon habitat and resources and maintaining viable salmon fisheries in the Yukon River in Canada.
2. Programs, projects and activities shall be funded based on the Principles and Guidelines set out in Appendix 1 hereto.

3. Subject to the availability of appropriated funds, the United States shall, beginning in U.S. fiscal year 2002, make an annual financial contribution to the Fund, in the amount set out in Appendix 2 hereto. The United States will endeavour to make the contribution in the first quarter of each U.S. fiscal year.
4. If in any year the United States does not make an annual contribution as required in paragraph 3, this Chapter is suspended until the United States makes such contribution for that year.
5. The cost of administering the Fund shall be drawn from the Fund.
6. The Fund shall be open for additional financial contributions from any source.
7. Monies from the Fund shall be disbursed by the Yukon River Panel according to the following rules:
   (a) with regard to paragraphs 1 a) and b), the percentage in Appendix 2 hereto of annual available funds shall be disbursed on Canadian programs and projects approved by the Canadian section of the Yukon River Panel based on recommendations by the Canadian section of the JTC and found by the Yukon River Panel as a whole to be consistent with the Principles and Guidelines set out in Appendix 1 hereto; and
   (b) the balance of annual available funds shall be disbursed at the direction of the Yukon River Panel as a whole based on recommendations by the JTC as a whole.
8. Monies disbursed from the Fund shall be accounted for as directed by the Yukon River Panel.

Appendix 1: Principles and Guidelines For Restoration, Conservation and Enhancement Programs and Projects

Principles

1. Restoration, conservation and enhancement programs and projects shall be consistent with the protection of existing wild salmon stocks and the habitats upon which they depend.
2. Given the wild nature of the Yukon River and its salmon stocks, and the substantial risks associated with large-scale enhancement through artificial propagation, such enhancement activities are inappropriate at this time.

3. Artificial propagation shall not be used as a substitute for effective fishery regulation, stock and habitat management or protection.

Guidelines

4. The priorities for implementing programs and projects using monies disbursed from the Fund shall be in this order with regard to Attachment C, paragraph 1 a):
   (a) restoring habitat and wild stocks;
   (b) conserving habitat and wild stocks;
   (c) enhancing habitat; and
   (d) enhancing wild stocks.
5. Programs and projects using monies disbursed from the Fund with regard to Attachment C, paragraph 1 b) shall be limited to:
   (a) encouraging habitat stewardship, conservation and reclamation in activities and industries that impact salmon and their habitats.
   (b) maintaining viable salmon fisheries in the Yukon River in Canada, thus establishing incentives for the conservation and stewardship of salmon and their habitats. Funding for commercial salmon fishing and processing shall be limited to the development of infrastructure, capital equipment expenditures and, in years when no commercial processing occurs, the maintenance of processing infrastructure.
6. Programs and projects shall be evaluated by the Yukon River Panel based on a Yukon River basin wide stock rebuilding and restoration plan to be developed and updated periodically by the Panel. As an integral part of restoration, habitat conservation, and enhancement planning the Panel shall undertake careful assessment and inventory of wild stocks, their health, habitat, and life history.
7. The Yukon River Panel shall apply the most stringent of the fish genetics and fish disease policies of the management entity of either Party to restoration or enhancement programs and projects.
8. Following JTC evaluation of proposed programs and projects, each Party shall provide an opportunity for public comment and review of the proposed programs and projects, along with the JTC evaluation.

9. The Yukon River Panel shall decide which programs and projects to fund, based on these guidelines, the JTC evaluation and any public comments received.

Appendix 2: U.S. Contributions

1. Subject to the availability of appropriated funds, beginning in U.S. fiscal year 2002, the United States shall contribute 1.2 million USD annually to the Fund until this Appendix is amended by the Parties.
2. The percentage of annually available funds to be made available for projects referred to in paragraph 7 a) of Attachment C shall be 50% until this Appendix is amended by the Parties.

Attachments to the June 30, 1999 Agreement between the Parties

Attachment A:

Amendment to Annex I of the Pacific Salmon Treaty

The Parties agree to add paragraph (d) as follows:

(d) a Transboundary Panel for salmon originating in the Alsek, Stikine and Taku River systems.

Attachment B:

Management of Northern Boundary Coho

1. The Government of Canada and the Government of the United States (the "Parties") agree on the following actions to be taken by their respective management authorities in implementation of the conservation provisions of the Pacific Salmon Treaty.
2. If projected all-gear commercial catch of coho salmon in Southeast Alaska is less than 1.1 million wild fish (as determined from the historical relationship between average catch per boat day in the Alaska troll fishery during statistical weeks 28 and 29 and the total all-gear coho catch in Southeast Alaska), then Alaska will close its troll fishery for up to seven days beginning on or about July 25. If Alaska closes its troll fishery based on this assessment, Canada will close its troll fishery in Areas 1, 3, 4, 5 and adjacent offshore areas for the same time period.
3. If the Alaska Fisheries Performance District ("FPD") Area 6 troll fishery statistical week 27, 28 and 29 average catch per boat day is:
   (a) less than 10, Alaska will close its troll during statistical weeks 31, 32 and 33 in waters south of a line from
      1) Male Point at 54°47'46"N - 130°36'57"W to
      2) Foggy Point at 54°55'20"N - 130° 58'43"W to
      3) Duke Point at 54°55'20"N - 131°11'52"W to
      4) Percy Point at 54°56'49"N - 131°36'58"W to
      5) Rip Point at 55°02'15"N - 131°58'51"W to
      6) Leading Point at 54°48'43"N - 132°22'25"W to

7) Dall Island at 54°48’43”N - 132°49’06”W to
8) Sakie Point at 55°03’25”N - 133°13’30”W to
9) Eagle Point on Dall Island at 55°14’32”N - 133°13’06”W to
10) Point Arboleda at 55°19’08”N - 133°27’35”W to
11) Point San Roque at 54°20’12”N - 133° 32’36”W to
12) Cape Ulitka at 55°33’47”N - 133°43’39”W to
13) Cape Lynch at 55°46’59”N - 133°41’47”W to
14) Helm Point at 55°49’34”N - 134°16’41”W and then
15) westward along the parallel of latitude of 55°49’34”N to the limit of the U.S. Exclusive Economic Zone.

Canada agrees to close its troll fishery in Areas 1, 3, 4, 5 and adjacent offshore areas for the same time period.[27]

(b) between 10 and 14, Alaska will close its troll fishery during statistical weeks 31 and 32 in waters south of a line from:

1) Male Point at 54° 47’46”N - 130°36’57”W to
2) Foggy Point at 54°55’20”N - 130°58’43”W to
3) Duke Point at 54°55’20”N - 131°11’52”W to
4) Percy Point at 54° 56’49”N - 131° 36’58”W to
5) Rip Point at 55°02’15”N - 131°58’51”W to
6) Leading Point at 54°48’43”N - 132°22’25”W to
7) Dall Island at 54°48’43”N - 132° 49’06”W to
8) Sakie Point at 55°03’25” - 133°13’30”W and then
9) westward along the parallel of latitude of 55°03’25”N to the limit of the U.S. Exclusive Economic Zone.

Canada agrees to close its troll fishery in Areas 1, 3, 4 and 5 and adjacent offshore areas for the same time period.

(c) between 15 and 22, Alaska will close its troll fishery beginning in statistical week 31 and continuing for 10 days in the same waters referred to in subparagraph (b)

[27] The Parties agree to review the decision to close the fishery after fourteen days and consider any new information regarding the need for continuation of the fishery closure.

above. Canada agrees to close its troll fishery in Areas 1, 3, 4 and 5 and adjacent offshore areas for the same time period.

4. In addition, the Parties agree:

   (a) Canadian managers from the North Coast Division and U.S. managers from Southeast Alaska will exchange on a weekly basis information on coho regarding stock status, catches and fishery management information including open areas and times for each fishery;

   (b) the Northern Boundary Technical Committee shall develop a work plan to develop MSY escapement goals for Skeena and Nass River coho, to improve stock assessment programs, to develop in-season and post-season abundance determinations and to improve fishery performance data;

   (c) that the calculation of the catch per unit effort (the "CPUE") associated with the closure of the Southeast Alaska troll fishery when the all-gear harvest is projected to be less than 1.1 million wild fish may change over time as methods and assessments improve. Any new method will be bilaterally reviewed prior to its implementation;

   (d) that, in the event that Alaskan troll fishery effort in FPD Area 6 is insufficient to provide necessary CPUE data for the determination under paragraph 2 above, the Parties agree to consult prior to statistical week 29 and consider other in-season abundance data to make such determinations; and

   (e) that, during the period of closure referred to above, the Parties may agree on the employment of selective fishing techniques in their troll fisheries to access other species or stocks pursuant to relevant Annex IV provisions.

5. Alaska will maintain its troll management plan with regard to closure of up to 10 days in early to mid August. Alaska may modify its troll management plan in future years to address or reduce incidental mortality of chinook in the coho fishery. Alaska will consult with Canada regarding any such changes prior to implementation.

The provisions of this agreement are without prejudice to the position of either Party with respect to the location of the maritime boundary in the Dixon Entrance area.

Attachment C:

Northern Boundary and Transboundary Rivers Restoration and Enhancement Fund

The Government of Canada and the Government of the United States agree that:

1. There shall be established a Northern Boundary and Transboundary Rivers Restoration and Enhancement Fund, hereinafter referred to as "the Northern Fund".
2. The geographic area for the Northern Fund shall be Northern and Central British Columbia, Southeast Alaska, and the drainage of the Alsek, Taku and Stikine Rivers.
3. The Northern Fund shall be used to support the following activities:
   (a) development of improved information for resource management, including better stock assessment, data acquisition, and improved scientific understanding of factors affecting salmon production in the freshwater and marine environments;
   (b) rehabilitation and restoration of habitat, and improvement of natural habitat to enhance productivity and protection of Pacific salmon; and
   (c) enhancement of wild stock production through low technology techniques rather than through large facilities with high operating costs.
4. The Northern Fund shall be constituted by a grant of $75 million USD to be provided by the United States subject to the obtaining of specific legislative authority and the availability of funds. Either Party may make additional contributions to the Northern Fund. Contributions to the Northern Fund by a third party may be made with the agreement of the Parties.
5. The Northern Fund shall be held by the Pacific Salmon Commission pursuant to the Pacific Salmon Commission bylaws and invested in accordance with the terms of a "Trust Agreement" to be drawn up by the Parties.
6. The Northern Fund shall be administered by a Northern Fund Committee, composed of 3 representatives appointed by the Government of Canada and 3 representatives appointed by the Government of the United States, which will be responsible for the approval of expenditure of monies from the Northern Fund. Expenditures shall not exceed the earnings from the invested principal of the Northern Fund. The cost of administering the Northern Fund shall be drawn from the income of the Northern Fund.
7. The Northern Fund Committee shall develop procedures for the acceptance, review, evaluation and approval of proposals for the use of the income of the Northern Fund.

8. Monies from the Northern Fund shall be disbursed by the Pacific Salmon Commission at the direction of the Northern Fund Committee. No funds may be disbursed from the Northern Fund after the expiration of the fishery arrangements in Chapters 1, 2 and 3 of Annex IV of the Pacific Salmon Treaty until new fishing arrangements are agreed by the Parties.
9. In the event that the above provisions relating to the Northern Fund, or the Pacific Salmon Treaty, are terminated, all monies in the Northern Fund shall, subject to the provisions of the Trust Agreement, revert back to the Party that contributed those monies. Any investment income earned up to the date of reversion shall be distributed to the Parties in proportion to their contribution.

Southern Boundary Restoration and Enhancement Fund

The Government of Canada and the Government of the United States agree that:

1. There shall be established a Southern Boundary Restoration and Enhancement Fund, hereinafter referred to as "the Southern Fund."
2. The geographic area for the Southern Fund shall be southern British Columbia, the States of Washington and Oregon, and the Snake River basin in Idaho.
3. The Southern Fund shall be used to support the following activities:
   (a) development of improved information for resource management, including better stock assessment, data acquisition, and improved scientific understanding of limiting factors affecting salmon production in the freshwater and marine environments;
   (b) rehabilitation and restoration of marine and freshwater habitat, and improvement of habitat to enhance productivity and protection of Pacific Salmon; and
   (c) enhancement of wild stock production through low technology techniques rather than through large facilities with high operating costs.
4. The Southern Fund shall be constituted by a grant of $65 million USD to be provided by the United States, subject to the obtaining of specific legislative authority and the availability of funds. Either Party may make additional contributions to the Fund. Contributions to the Southern Fund by a third party may be made with the agreement of the Parties.

5. The Southern Fund shall be held by the Pacific Salmon Commission pursuant to the Pacific Salmon Commission bylaws and invested in accordance with the terms of a "Trust Agreement" to be drawn up by the Parties.
6. The Southern Fund shall be administered by a Southern Fund Committee, composed of 3 representatives appointed by the Government of Canada and 3 representatives appointed by the Government of the United States, which will be responsible for the approval of expenditure of moneys from the Southern Fund. Expenditures shall not exceed the earnings from the invested principal of the Southern Fund. The cost of administering the Southern Fund shall be drawn from the income of the Southern Fund.
7. The Southern Fund Committee shall develop procedures for the acceptance, review, evaluation and approval of proposals for the use of the income of the Southern Fund.
8. Monies from the Southern Fund shall be disbursed by the Pacific Salmon Commission at the direction of the Southern Fund Committee. No funds may be disbursed from the Southern Fund after the expiration of the fishery arrangements in Chapters 3 to 6, inclusively, of Annex IV of the Pacific Salmon Treaty until new fishing arrangements are agreed by the Parties.
9. In the event that the above provisions relating to the Southern Fund, or the Pacific Salmon Treaty, are terminated, all monies in the Southern Fund shall, subject to the provisions of the Trust Agreement, revert back to the Party that contributed those monies. Any investment income earned up to the date of reversion shall be distributed to the Parties in proportion to their contribution.

Attachment D: Renewed Cooperation on Scientific and Institutional Matters

Recognizing the advantages of enhanced cooperation in the management and stewardship of Pacific salmon,

Recognizing the benefits of increased stability in the management and stewardship of Pacific salmon under the Pacific Salmon Treaty,

Recognizing the benefits of continued bilateral agreement,

Recognizing the advantages of consultation and cooperation on science and information exchange,

Recognizing the benefits of processes for getting information for management, including the development of common assessment models,

Recognizing the need to develop clearer distinctions between technical and policy issues,

Recognizing that improved institutional arrangements and greater cooperation on science will facilitate improved resource management,

The Government of Canada and the Government of the United States (the "Parties") agree to:

(a) participate, to the extent practicable, in each other's public consultation processes leading to the establishment of annual management regimes;

(b) encourage greater cooperation between fisheries managers through, *inter alia*, staff exchange arrangements, workshops and timely exchange of data;

(c) review the committee structure of the Pacific Salmon Commission (the "Commission") to ensure that current committees are functioning effectively;

(d) request the Commission to eliminate the Committee on Research and Statistics and to reconstitute it as the Committee on Scientific Cooperation which shall be comprised of no more than eight members, drawn from both governmental and non-governmental scientific communities, to be nominated four each by the respective National Sections of the Commission with the mandate to:

(i) assist in consultation with the scientific and technical committees of the Commission in setting the scientific agenda for the Commission, including identifying emerging issues and subjects for research and monitoring progress;

(ii) monitor the progress of the Parties in enhancing cooperation and consultation on science including such matters as timely data exchange, the development of common assessment models, and scientific and technical exchanges;

(iii) provide support to the scientific and technical committees of the Commission including advising the Commission at its request on the distinction between

technical and policy issues, and assisting in arranging peer review evaluation of scientific reports;

(iv) undertake the tasks assigned to it in the agreement on Habitat and Restoration; and

(v) make recommendations to the Parties on enhancing scientific consultation and cooperation;

(e) encourage the resolution of scientific issues at the technical level through the Commission's committees; and

(f) request the Commission to elaborate rules and procedures, as necessary, for the implementation of the process set out in Article XII of the Pacific Salmon Treaty.

Attachment E: Habitat and Restoration

Considering the agreements between the Parties to implement abundance-based management regimes designed to prevent overfishing;

Taking into account the decline in the abundance and productivity of important naturally spawning stocks of Pacific salmon subject to this Treaty;

Recognizing that it is vital to protect and restore the salmon habitat and to maintain adequate water quality and quantity in order to improve spawning, the safe passage of adult and juvenile salmon and, therefore, to optimize the production of important naturally spawning stocks;

Recognizing that the Parties can achieve the principles and objectives of this Treaty only if they maintain and increase the production of natural stocks;

Recognizing that a carefully designed enhancement program would contribute significantly to the restoration of depressed natural stocks and help the Parties optimize production; and

Desiring to cooperate to optimize production of important naturally spawning stocks,

The Parties agree:

1. To use their best efforts, consistent with applicable law, to:

(a) protect and restore the habitat to promote the safe passage of adult and juvenile salmon and to achieve high levels of natural production;

(b) maintain and, as needed, improve safe passage of salmon to and from their natal streams; and

(c) maintain adequate water quality and quantity.

2. To promote these objectives by requesting that the Commission:

(a) maintain a page on its web site that documents citations, references, or links to publicly accessible information published by the Parties, management entities, or others related to the habitat protection and restoration projects and programs that are important to Pacific salmon stocks subject to this Treaty; and

(b) periodically review and discuss information on the habitat of naturally spawning stocks subject to this Treaty that cannot be restored through harvest controls alone, any non-fishing factors that affect the safe passage or survival of salmon, options for addressing non-fishing constraints and restoring optimum production, and progress of the Parties' efforts to achieve the objectives for the stocks under this Treaty.

Memorandum of Understanding, January 28, 1985

The Government of Canada and the United States of America have agreed to record the following in connection with the Treaty Concerning Pacific Salmon; in order to set out the intention of the Parties with respect to implementation of Article III, paragraph 1(b) of the said Treaty, Data Sharing and the Yukon River, Transboundary Rivers and the Northern Boundary - Southern Alaska fisheries:

A. Implementation of Article III, paragraph 1 (b)

The principal goals of the Treaty are to enable both countries, through better conservation and enhancement, to increase production of salmon and to ensure that the benefits resulting from each country's efforts accrue to that country. In this regard, research on the migratory movements of stocks subject to interception must be continued for several years. Such research is required not only to determine with more precision the extent of interceptions by both sides, but also to provide an improved basis for conservation and enhancement. The resultant long-term increases in production of salmon should fully justify the short-term expenditures on research.

With respect to the obligation to provide each Party with benefits equivalent to the production of salmon originating in its rivers (contained in Article III, paragraph 1(b) of the Treaty), it is recognized that data on the extent of interceptions in some areas are imprecise and that it is therefore not possible to determine with certainty the total production of salmon from each country's rivers. It is also recognized that methods of evaluating benefits accruing within each country may differ. For these reasons, it is anticipated that it will be some time before the Commission can develop programs to implement the provisions of Article III, paragraph 1(b) in a complete and comprehensive manner. Nevertheless, in the short term, the Commission shall ensure that the annual fishery regimes and understandings regarding enhancement are developed in an equitable manner taking into account the principle outlined in Article III 1(b). In particular, the Commission's decisions take into account changes in the benefits flowing to each of the Parties through alteration in fishing patterns, conservation actions, or as the result of changes in the abundance of the runs.

In the longer term, if it is determined that one country or the other is deriving substantially greater benefits than those provided from its rivers, it would be expected that the Parties would develop a phased program to eliminate the inequity within a specified time period, taking into account the provisions of Article III, paragraph 3. Since correction of imbalances is a national responsibility and may involve differential fishery adjustments or enhancement projects on a regional basis within either country, the Party with the advantage shall submit appropriate proposals to the Commission for consideration. Such proposals shall be discussed within the Commission and can be reflected in the agreed fishery regimes and co-ordinated enhancement planning in ensuing years.

B. Data Sharing

Considering that development of comprehensive evaluations of management is required in order to assess the impact of such regimes on interception fisheries and on the stocks which contribute to those fisheries for the affective implementation of the Treaty, the Parties consider it necessary to develop a coast-wide stock assessment and management data system, including catch, effort, escapement, and coded-wire tag data that will yield reliable management information in a timely manner and develop analytical models along with standardized methods for monitoring fishing effort. The Parties agree to maintain a coded-wire tagging and recapture program designed to provide statistically reliable data for stock assessments and fishery evaluations. The Parties agree to establish a working group prior to April 1, 1985 to review the program and to make recommendations to the Commission before April 1, 1987.

Therefore, the Parties agree to

(a) develop the capability to use current season coded-wire tag data, fishing data, spawning escapement data, and age composition data for the pre-season management process for the next season;

(b) continue in 1985 and 1986 the research program begun in 1982 in northern British Columbia and Southeast Alaska, designed to develop agreed estimates of rates of interception of salmon in the area;

(c) continue efforts to develop analytical models that forecast abundance and analyze recovery and escapement data to refine stock productivity estimates and monitor and forecast management needs;

(d) improve evaluation of escapements through improved monitoring (key index area streams, standardization of methods, etc.) and coded-wire tag recovery in escapements;

(e) develop and maintain coded-wire tagging programs for key stocks or index groups to measure exploitation rates and better define time-area distribution for development of management options;

(f) obtain coastwide estimates for non-reported incidental catches of juvenile salmon;

(g) evaluate and develop alternative techniques such as electrophoresis, scale analysis, etc., for stock identification in order to identify stocks not represented by coded-wire tag groups;

(h) explore the feasibility of in-season management;

(i) review annually methodologies and procedures for the purpose of determining performance of applied measures and maintaining "state-of-the-art" fishery management techniques.

C. Yukon River

Considering that salmon stocks originating from the Canadian section of the Yukon River and the Canadian section of the Porcupine River are harvested by fishermen of both Canada and the United States and that effective conservation and management of these resources is of mutual interest, the Parties, in order to facilitate implementation of Article VIII, shall

1. During March 1985, meet in order *inter alia*, to

(a) determine current stock status;

(b) develop preliminary escapement goals;

(c) examine enhancement opportunities;

(d) examine conservation concerns, including habitat degradation, and recommend management strategies and goals;

(e) develop and recommend co-operative research proposals for 1985 and thereafter; and

(f) notwithstanding the Transboundary River Annex and other provisions of this Memorandum establish the range within which the percentage of the United States harvest of each species of salmon originating in Canadian sections of the rivers that shall be deemed to by of United States origin shall be set, as required by Article VIII, paragraph (4).

2. During March 1985, establish a technical committee to compile available data and itemize research requirements for effective future management and conservation.

3. Notwithstanding the Transboundary River Annex and other provisions of this Memorandum, during October 1985, initiate negotiations as required by Article VIII, paragraph (3), to determine *inter alia*, the percentage of the United States harvest of each species of salmon originating in Canadian sections of the rivers that shall be deemed to be of United States origin.

D. Transboundary Rivers

Whereas salmon originating in Canadian sections of Transboundary Rivers are subject to harvesting by United States fishermen in United States waters;

And whereas the Parties have encountered difficulties in determining the percentage of the total allowable catch of salmon that shall be deemed to be of United States origin for the purpose of implementing Article III, paragraph 1(b) of the Treaty,

The Parties therefore agree that the Commission shall determine this percentage during the first year following the entry into force of the Treaty.

E. Northern Boundary – Southeastern Alaska

In recognition of the Northern Boundary Technical Committee Report that Area 3 net fisheries in Canada harvest both Canadian and United States pink stocks along the boundary areas, Canada

shall provide to the United States a plan that ensures that fisheries in this Area are not increased during the period of mid-July through mid-August.

Diplomatic Note of August 13, 1985 regarding implementation of Article XV (paragraph 3) of the Pacific Salmon Treaty

His Excellency Paul Heron Robinson, Jr.
Embassy of the United States of America
100 Wellington Street
Ottawa, Ontario
K1P 5T1

August 13, 1985

Excellency,

I have the honour to refer to the discussions between representatives of our two Governments and to the Treaty between the Government of Canada and the Government of the United States of America concerning Pacific Salmon (the Treaty) and to confirm on behalf of the Government of Canada the understanding set out below that has been reached between our two Governments concerning the implementation of Article XV, paragraph 3 of the Treaty.

A. Prior to the first anniversary of the date of entry into force of the Treaty:

1. The Fraser River Panel established pursuant to the Treaty shall assume the following responsibilities consistent with the Treaty:

(a) review and evaluate information provided by the Parties, pursuant to Article IV, paragraph 3, in order to provide recommendations to the Commission for the fishery regime included in Annex IV;
(b) make proposals to the Commission regarding regulations for the harvest of Fraser River sockeye and pink salmon within the Fraser Panel Area (the Area);
(c) collect in-season information on catches within the Area; review information on escapements within the Area; collate information provided by the Parties pursuant to sub-paragraphs D. 3 and D. 4 for fisheries outside the Area; conduct test fishing

on Fraser River sockeye and pink salmon; collect data on upriver escapements by observation at Hell's Gate and through the conduct of a hydroacoustic program at Mission Bridge; and design and conduct studies to identify and discriminate between races of Fraser River sockeye and pink salmon harvested in the fisheries including specification of samples required from upriver sections of the Fraser River and from sites outside the Area;

(d) make orders for the adjustment of the fisheries pursuant to Article VI, paragraph 6, on the basis of information garnered under sub-paragraph (c); and

(e) provide the Commission, at the end of each fishing season, with an accounting of the catches, wherever made, of Fraser River sockeye and pink salmon and with an appraisal of the extent to which the Panel achieved the objectives set by the Parties.

2. Canada shall assume all responsibilities of the International Pacific Salmon Fisheries Commission (IPSFC) except those responsibilities specified in sub-paragraph 1.

B. The IPSFC will continue to discharge its responsibilities in the interval between the entry into force of the Treaty, and pursuant to paragraph A, the assumption of responsibilities by Canada and the Fraser River Panel.

C. Prior to the fourth anniversary of the entry into force of the Treaty, the Commission shall review the division of responsibilities set out above.

D. Canada and the United States shall provide to the Commission:

1. the information required by Article IV, paragraph 3;
2. samples required for the racial work referred to in sub-paragraph A.1 (c);
3. information on in-season catches, by time, area, species and gear type, for fisheries outside the Area that harvest sockeye and pink salmon bound for the Fraser River.
4. post-season statistical information regarding Fraser River sockeye and pink salmon catches by time, area, species and gear type;
5. data on spawning escapements for all sockeye and pink stocks which migrate through the Area; and

6. information on any problems identified in achieving national goals resulting from in-season regulation of Area fisheries.

E. The following administrative arrangements shall apply to the transfers of staff from IPSFC:

1. Appropriate members of the existing Fishery Management Division and of other Divisions of the IPSFC shall be transferred to the Commission so that it shall have the capability to perform the following duties:
   (a) the discharge of the responsibilities of the Commission and of the Fraser River Panel as specified, *inter alia*, in sub-paragraph A.1.;
   (b) interpretation of statistical and biological data and other information referred to in paragraph D;
   (c) collection and assembly of such data as may be required by the Commission and its Panels; and
   (d) preparation of such publications as may be decided upon by the Commission.
2. The staff shall be under the direction of the Executive Secretary pursuant to Article II, paragraph 16.
3. The Operations Division shall be transferred to the Department of Fisheries and Oceans (DFO), Canada, to the extent practicable, and shall continue to carry out upriver work on pink and sockeye salmon in coordination with the staff of the Commission. While there will be some duplication of work in the spawning areas during this initial period, it is anticipated that the Operations Division will eventually be integrated into DFO's Fraser River Management and Enhancement Operations to streamline upriver operations and to avoid duplication. The close working relationship that now exists at the staff level between the IPSFC Fishery Management Division and Operations Division should be maintained between the Commission staff and the appropriate DFO responsibility centres.
4. The Environment Conservation Division, Biology Division and Engineering Division, and appropriate members of the Fishery Management and

Administrative Divisions shall be transferred to DFO and integrated as practicable.

5. The transfer of the Fishery Management Division and Operations Division of the IPSFC referred to in sub-paragraphs 1, 3 and 4 shall occur during the period September 1985 to March 1986. The transfer of the Environment Conservation Division, the Biology Division, the Engineering Division and members of the Administrative Division referred to in sub-paragraph 4 may occur at any time within the year after the date of entry into force of the Treaty. Officials of the Parties shall consult with each other and with the IPSFC staff to seek agreement on the specific timing of these transfers, taking into account the need for continued sound management of the fishery resource and administrative and budgetary cycles of the two Governments.

F. In order to ensure continuity in the methodology of collection of upriver data required for the management of Fraser River sockeye and pink salmon:

1. Pending the entry into force of the Treaty, DFO staff shall participate in work directed by IPSFC staff on upriver activities, i.e., production system activities.
2. In the first two years following entry into force of the Treaty, former IPSFC staff members whose responsibilities included upriver work and who become employees of DFO, shall participate as practicable in the carrying out of Canada's upriver responsibilities. With respect to upstream spawning escapement work, the advice of the new Commission's staff shall be sought as appropriate.
3. On request of either Party, opportunities shall be provided for technical experts of either Party or the Commission to observe the data collection operations of the Parties related to the activities of the Fraser River Panel.

G. The Parties shall consult with each other and with the IPSFC staff, with a view, *inter alia*, to offering employment to IPSFC employees with the new Commission, the Fraser River Panel, or within government agencies of the two Parties on terms

and conditions comparable, to the extent practicable, with those they enjoy in IPSFC.

H.

1. The IPSFC library in New Westminster, British Columbia, which contains irreplaceable historical records, shall be transferred to the new Commission and shall be readily accessible to the Fraser River Panel, the Commission and others whose professional needs require use of these library facilities.
2. Other IPSFC assets necessary for the work of the Commission and the Fraser River Panel shall be transferred to the Commission.
3. The remaining assets shall be transferred to Canada.
4. Prior to its dissolution the IPSFC shall in cooperation with the Parties, discharge all its outstanding debts, obligations and liabilities.

I. For a Term to be agreed upon, the new Commission shall maintain the IPSFC scientific and technical publication series in order to provide for reporting of past scientific work carried out under the auspices of the IPSFC.

I have the honour to propose that if the understanding set out in this Note is acceptable to the Government of the United States of America, this Note and your reply to that effect, shall constitute an Agreement between the Government of Canada and the Government of the United States of America regarding the implementation of the Treaty and shall enter into force on the date of your reply.

At the end of the third year after entry into force and at any time thereafter, either Party may give notice of its intention to terminate this Agreement. The Agreement shall terminate one year after notification.

Accept Excellency, the assurance of my highest consideration.

The Secretary of State for External Affairs

#75, 210 – 128 West Hastings St.
Vancouver, B.C.
V6B 1G8
p: 604-262-1963
w: watershedwatch.ca

June 11, 2023

Re: Support for U.S. District Court's ruling to Protect Endangered Chinook salmon and Southern Resident Killer Whales

Dear Honourable members of the Court,

Watershed Watch Salmon Society respectfully urges the Ninth Circuit to uphold District Court Judge Jones' finding that harvest from Alaska's Southeast troll fishery has a significant and measurable impact on the availability of Chinook salmon in the Pacific Northwest.

Watershed Watch Salmon Society is a federally registered Canadian charity that has advocated for the conservation of Pacific salmon for the past 25 years. During that time, we have seen many once-abundant populations of salmon, including Chinook, become endangered. Commercial over-harvest has been a major factor in these declines, and the highest risk fisheries occur when harvesters target stocks of unknown origin in mixed-stock fisheries. This is the case in the southeast Alaska troll fishery, where it is impossible to harvesters to know, prior to harvest, whether a salmon is from an endangered population or not.

When populations of salmon reach the low abundances that warrant an "endangered" classification, the following major repercussions ensue:

1. Marine and terrestrial food webs, which support apex predators like Orca and Grizzly Bear, are destabilized with negative consequences for all.
2. The economic well-being of rural and remote communities that historically depended upon salmon harvest at a subsistence or semi-subsistence level is jeopardized.
3. Health and well-being is compromised among Indigenous people whose societies, cultures and diets are centered on the availability of salmon.

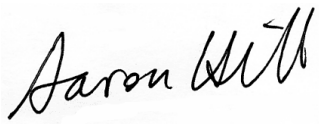
Communities and governments in both Canada and the United States share the responsibility for conserving salmon, which travel across the borders between our two countries. Over time, both countries have reduced the number of interception fisheries that target each other's returning fish. However, the vast majority of salmon harvested in the Southeast Alaska troll fishery are born in, and bound for, rivers in B.C., Washington State, or Oregon. Many of these fish are from endangered populations and harvest reduction is by far the most consequential management measure that can be taken to improve their status.

Over the past five years, Canadian fisheries managers have taken the following actions to either eliminate or reduce commercial fishing pressure in mixed-stock fisheries:

1. The closure of the gillnet fisheries in Johnstone Strait, B.C.'s central coast, and the coastal approaches to the Nass River (Areas C, D, E)
2. The major reduction in the size and fishing window for B.C.'s west coast commercial troll fishery (our analog to the Southeast Alaska commercial troll fishery)
3. The expenditure of over $130 million CDN to buy back and permanently retire hundreds of commercial salmon seine, troll and gillnet fishing licenses.

It is unfortunate that a court decision was required to compel Alaskan and U.S. federal authorities to manage non-Alaskan origin fish in a manner similar to the way Alaska manages Alaskan-origin fish. Watershed Watch Salmon Society recognizes that further conservation burdens may need to be imposed on other fisheries in the Pacific Northwest. However, this District Court decision is urgently required. By upholding it, you will prevent the further endangerment of keystone species which are significant to the economies, cultures, and identities of British Columbia, Washington and Oregon.

Sincerely,



Aaron Hill
Executive Director

June 9, 2023

From: Raincoast Conservation Foundation
PO Box 2429 Sidney
British Columbia, Canada V8L 3Y3

To: US Courts for the Ninth Circuit

Dear members,

I write on behalf of the Raincoast Conservation Foundation to express our support for implementing recovery measures for endangered Southern Resident killer whales. This includes our support for the US District Court decision to halt the Southeast Alaska troll fishery during the summer and winter seasons. This decision enables tens of thousands of Chinook to survive this interception fishery and migrate though Alaska. Many of these migrating Chinook (destined for rivers in British Columbia and the lower US states) will pass through the feeding grounds of Southern Resident killer whales.

Since 2015, Raincoast has been working with a team of international scientists to examine effective recovery measures for Southern Resident killer whales. Our modelling shows that increased Chinook abundance can improve survival of Southern Residents to the point of either stabilizing or slowly growing their population. These scenarios are even more powerful when combined with other measures to reduce vessel noise and disturbance.

British Columbia has taken important, yet difficult, steps in its efforts to recover Southern Resident killer whales. Fishing restrictions include Chinook salmon time and area closures that support prey rebuilding, and seasonal recreational fishing closures to reduce prey competition. Canada has also established a network of sanctuaries where whales can feed without the presence of vessel traffic, and increased restrictions on whalewatch vessels to limit their noise and disturbance on foraging whales.

In addition to efforts to constrain fisheries for killer whales, Chinook fisheries in British Columbia are constrained by the low abundance of domestic stocks of threatened and endangered Chinook. While domestic measures of fishery closures support Chinook rebuilding, threats to Chinook include catch in Alaskan fisheries. Closure of the Alaskan troll fishery is therefore a welcomed initiative to support domestic rebuilding, in addition to it benefits to whales.

BC's domestic fishing constraints, combined with the catch limits set under the Pacific Salmon Commission, should ensure that the increases in south migrating Chinook liberated from the Alaskan troll fishery will pass through northern BC to reach feeding grounds of SRKW in southern BC.

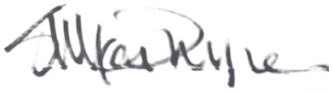
Alaska has a long history of intercepting migrating populations of Chinook and other salmon that are destined for rivers in BC and the Pacific northwest states. Increasingly, intercepted Chinook can be from threatened and endangered wild populations that are the focus of significant recovery efforts in BC. In several places in BC, fisheries- including food fisheries for First Nations- are closed with boats tied up to docks because of low abundance. Yet just over the Alaskan border, these same at-risk populations are caught with no restrictions.

It is very bold for Alaska to state that it should be allowed to continue its unrestrained access to non-Alaskan Chinook salmon that are prey for endangered whales or aid recovery of endangered Chinook populations in BC. In the case of both the whales, and at least a dozen Chinook populations, these are animals facing extinction.

To address the status of these whales, Canada has committed over $120 million in the last 6 years to support recovery efforts for Southern Resident killer whales. They have further committed $640 million through the Pacific Salmon Strategy Initiative to support recovery of wild salmon runs. Canada is making this investment because of the importance of these whales and fish to Canadian culture, society and economy.

In 2022, the Southeast Alaskan Chinook troll generated 2.2% ($16.2 million exvessel value) of the salmon revenue in Alaska ($720.4 million). If this revenue must be maintained, Alaska needs move its fishery to the inside waters of SEAK and capture its own domestic salmon. Doing so would stop compromising the recovery of salmon and whales that are part of Canada's cultural heritage.

Sincerely



Misty MacDuffee
Wild Salmon Project Director
Raincoast Conservation Foundation

Georgia Strait Alliance

June 12, 2023

To: US Courts for the Ninth Circuit

Dear members,

I am writing to you on behalf of the Georgia Strait Alliance, a charitable organization that, grounded in environmental justice, mobilizes and supports collective action to protect the Salish Sea region. We wish to convey our support for the decision by the US District Court to close the Chinook troll fishery in southeast Alaska. This decision will enable Canadian Chinook and Chinook from the Pacific Northwest of the lower US states, to survive this fishery, migrate out of Alaska, and reach the critical habitat of endangered Southern Residents killer whales. These Chinook are the primary prey for endangered whales and essential for the health of the Salish Sea.

Georgia Strait Alliance, with the support of its 11,000 members across Southern BC, has been working for more than three decades to advocate for the recovery of these endangered killer whales. In southern BC, we have been engaged in the establishment of recovery measures at the mouth of the Fraser River, the Gulf Islands, the Juan de Fuca and Swiftsure Bank that restrict vessel and fisheries within these waters. We also support the closure of Chinook fisheries that have been implemented more broadly by Fisheries and Oceans Canada since 2019 that support the recovery of BC's threatened and endangered Chinook salmon.

The Alaskan troll fishery targets non-Alaskan Chinook migrating to rivers in BC and the Southern US states. Upholding the decision by the US District Court decision to halt the Southeast Alaska troll fishery is consistent and supportive of Canadian measures to increase prey availability for these whales. Modelling done by both independent and federal scientists shows that an increase in Chinook abundance in critical habitat increases the likelihood of killer whale survival and could recover the population over time. Closing fisheries is even more beneficial when combined with other measures to reduce noise and address contaminants in their foraging grounds. Programs for all three of these threats are in place in BC.

Allowing these fish to leave Alaska supports the domestic rebuilding of Chinook salmon in BC, and in increasing the abundance of Chinook in the critical habitat in the Salish Sea and off the West Coast of Vancouver Island. Given that revenue from this fishery makes up less than 3% of the Alaskan salmon revenue, prioritizing it over the recovery of these endangered whales seems highly unjustifiable.

Importantly, catch restrictions and limits in BC initiated by Fisheries and Oceans Canada as well as the Pacific Salmon Treaty, will ensure that any increases in abundance in BC will not translate into catch.

Southern Resident killer whales are loved by hundreds of thousands of people in BC and around the world and are an essential keystone species for the Salish Sea.Given that we are living through an unprecedented biodiversity crisis, we must do everything we can to avoid the extinction of this important population and aid their recovery. Allowing the Alaskan toll fishery to continue for the purposes of profit while perpetuating the extinction of this essential population of whales, seems like a very arbitrary and misguided decision. I hope this ruling is in favour of giving these whales a chance to survive and ensure a sustainable future for all for generations to come.

Sincerely,

Lucero Gonzalez Ruiz

Biodiversity Campaigner, Georgia Strait Alliance

PENDER OCEAN DEFENDERS

June 10, 2023

Dear members of the US Courts for the Ninth Circuit,

We write on behalf of the Pender Ocean Defenders to express our support for the US District Court decision to halt the Southeast Alaska troll fishery. Closing this fishery will enable between 100 and 200 thousand Chinook to survive this fishery and migrate into Canadian waters. Many of these migrating Chinook will reach the feeding grounds of nutritionally-stressed Southern Resident killer whales (SRKW).

Pender Ocean Defenders have been championing the recovery of endangered Southern Resident killer whales in Southern British Columbia for the last decade. Our local community has taken difficult but important steps to constrain activities that harm these whales. Locally, we have supported the establishment of sanctuaries on Pender and Saturna Islands that are free from vessels when SRKW are in local waters. These sanctuaries are part of a network of federal sanctuaries where whales can feed without the presence of vessel traffic. POD members are part of a public network that monitors compliance with these actives in local waters.

POD also undertakes education, awareness and advocacy on the threats to these whales in local waters. This includes supporting awareness of the need for recovery of wild Chinook salmon, the need to support fishery closures on Chinook in critical habitat, and taking steps to reduce noise and disturbance from vessel traffic. This includes restrictions on whalewatch vessels to limit their noise and disturbance on foraging whales.

We also support domestic Canadian fishery closures on spring, summer and fall Chinook fisheries that have been implemented annually in SRKW critical habitat since 2019. These closures allow SRKW to forage for their prey without competition from recreational and commercial fisheries, and support Chinook salmon rebuilding.

Closure of the Alaskan troll fishery is a key step in supporting the domestic rebuilding of Canadian Chinook salmon, and increasing the abundance of Chinook prey for endangered whales feeding in critical habitat in the Salish Sea and the West Coast of Vancouver Island.

We do not support Alaska's perspective that it should be allowed to continue the SEAK troll fishery on non-Alaskan Chinook salmon that are prey for endangered whales. It is unacceptable that

revenue from this fishery, which makes up less than 3% of the Alaskan salmon revenue, could trump the recovery of animals facing extinction.

Sincerely,

Monica Petrie,
Paul Petrie,
Maryanne Pare,
John Allan,
Julia Nicholls,
Gregory Nicholls,
Lisa Baile,
Peter Pare,
Kathleen Durant,
Dave Durant

Leadership at Pender Ocean Defenders
Pender Island, British Columbia, Canada

Coastal Conservation Association

TEXAS • LOUISIANA • MISSISSIPPI • ALABAMA • FLORIDA • GEORGIA
SOUTH CAROLINA • NORTH CAROLINA • VIRGINIA • MARYLAND • NEW YORK • CONNECTICUT
MASSACHUSETTS • NEW HAMPSHIRE • MAINE • OREGON • WASHINGTON • CALIFORNIA • TENNESSEE

June 10, 2023

Mr. Kelly Susewind, Director
Washington Department of Fish and Wildlife
PO Box 43200
Olympia, WA 98501

Mr. Curt Melcher, Director
Oregon Department of Fish and Wildlife
4034 Fairview Industrial Drive SE
Salem, OR 97302

Directors Susewind and Melcher:

We are writing to urge your departments to advocate for increased escapement of Chinook salmon destined for rivers in Washington and Oregon in pending legal and federal administrative reviews of the commercial troll fishery in southeast Alaska. Data indicates that 97% of the salmon harvested in this troll fishery originate from rivers in British Columbia, Washington, and Oregon – including wild Chinook populations listed under the U.S. Endangered Species Act (ESA).

On May 5, 2023, a federal district judge vacated the National Oceanic and Atmospheric Administration's (NOAA) approval of the southeast Alaska commercial troll fishery related to impacts to ESA-listed Chinook salmon and Southern Resident Killer Whales (SRKW) while leaving in place important hatchery supplementation programs. As the legal challenge is appealed to the federal court of appeals and NOAA revises its Biological Opinion for this fishery, we believe the states of Washington and Oregon should vigorously advocate on behalf of Washington and Oregon salmon populations.

In recent years, recreational fisheries in Puget Sound, the Columbia River and along the coasts of Washington and Oregon have seen significant reductions in fishing opportunities to protect wild Chinook populations, including those that are critical sources of prey for SRKW. Many recreational fisheries have also gone mark-selective to reduce impacts on ESA-listed wild Chinook populations. Despite these significant sacrifices, concerns are emerging about potential new restrictions, including on recreational fisheries in Oregon coastal rivers that are home to Chinook salmon populations that are heavily harvested in the southeast Alaska troll fishery - a completely non-selective fishery. We believe greater equity is needed in sharing the conservation burden for Pacific Northwest salmon recovery efforts.

In 2021, Canada's Department of Fisheries and Oceans (DFO) announced a nearly 60 percent reduction to commercial salmon fisheries in British Columbia as "an initial step towards longer-term reductions in fishing pressure on stocks of conservation concern." DFO has also signaled a desire to see a "shift to more selective fishing gear" since "larger commercial fisheries cannot selectively fish for abundant stocks without potentially catching at-risk stocks."

Washington Governor Jay Inslee recently issued his latest *State of Salmon in Watersheds Report*, which found that of the 14 population groups of salmon and steelhead in Washington listed as at-risk under the ESA, 10 are in crisis or falling further from recovery goals – including four of the five populations of ESA-listed Chinook salmon. The State of Oregon has serious concerns about the recovery of Snake River salmon populations and is advocating for major changes to hydroelectric dams.

The State of Alaska is actively defending the southeast Alaska commercial troll fishery and its impacts on Washington and Oregon Chinook salmon populations. We urge you to support the recovery and conservation needs of Pacific Northwest wild salmon populations by advocating for reductions in harvest in pending legal and federal administrative reviews of the commercial troll fishery in southeast Alaska.

Sincerely,

Nello Picinich, Executive Director
CCA Washington

Dave Schamp, Chairman of the Board
CCA Oregon

June 9th, 2023

Re: Support for U.S. District Court's ruling to Protect Endangered Chinook salmon and Southern Resident killer whale's

Dear Members of the Ninth Circuit,

On behalf of SkeenaWild Conservation Trust, I am writing to express our support for the recent U.S. District Court ruling favoring the protection of endangered Southern Resident killer whales and threatened wild Chinook. This ruling is critical for these species, indigenous communities relying on Chinook, and the health of Pacific Northwest ecosystems.

The annual take of several hundred thousand Chinook salmon by the Southeast Alaska troll fishery deeply impacts our ability to conserve wild Pacific salmon. Over 95% of Alaska's troll caught chinook are from British Columbia, Washington and Oregon, many of which are from endangered populations in both Canada and the US.

Southeast Alaskan fisheries, especially the chinook troll and District 104 Seine fisheries, are now the largest harvest impact on many of British Columbia's at-risk salmon populations. The potential loss of these populations would disrupt ecological balance and severely impact indigenous communities' livelihoods and cultural heritage. Therefore, we view the Court's ruling to halt the Southeast Alaska troll fishery as vital for their recovery.

We recognize Canada needs to share the conservation burden. British Columbia has significantly reduced Chinook harvest in recent years to protect and rebuild endangered populations. SkeenaWild continues to work with Canada's federal Department of Fisheries & Oceans, local Indigenous and fishing interests to further reduce fishery impacts on our side of the border.

We are concerned about the appeal filed by NOAA Fisheries, the State of Alaska, and the fishing industry, prioritizing economic gains over the survival of these invaluable species.

We respectfully urge the Ninth Circuit to uphold the District Court's ruling considering the dire condition of the Chinook salmon and Southern Resident killer whale populations, their cultural significance, and their need for increased prey.

Thank you for your consideration.

Sincerely,

Greg Knox

Executive Director
SkeenaWild Conservation Trust

Support for the Wild Fish Conservancy's lawsuit to protect Southern Resident killer whales and wild Chinook from troll fishing in Southeast Alaska

Out of Time

After moving from Texas nearly thirteen years ago, nothing but the arrival of my Grandchildren has been so moving or impactful than watching the Southern Resident killer whales breach and swim in Puget Sound.

One morning during an early ferry ride from Seattle to our home on Bainbridge, we were treated to the marvel of all three pods J, K and L in Elliott Bay. Chopper captures video of pod of orcas off Elliott Bay – KIRO 7 News Seattle

This is the stuff that dreams are made of and something that my young Grandchildren have never seen or may never see given the path of decline of these mammals whose food source is being threatened by a number of factors including the impacts of Southeast Alaska troll fishery. As the court has ruled that halting troll fishery during the summer and winter seasons is the most appropriate remedy to protect endangered orcas and threatened Chinook from further decline.

Out of Reach

According to Alaska Public Media," Pound for pound, a troll-caught king salmon is the most valuable fish in Alaska. It's possible that a king salmon is more valuable to Alaska than a barrel of crude oil. And the fishery is quite lucrative at the dock. It's worth about $15 million." (Casey Grove, Alaska Public Media—Anchorage, May 5, 2023) To put it bluntly, King Salmon is a luxury food product that is simply out of reach for many consumers.

Not Our First Rodeo

Our Island is no stranger to the impacts of tough decisions. Bainbridge Island was the home, for 85 years, of a creosote plant that produced a product that helped build the Panama Canal. Closing the operation resulted an obvious loss of revenue and jobs. Sadly today however, that area on Bainbridge is a super fund site.

It seems like the court is charged with a decision to work to preserve the species, halt the decline of the wild chinook populations or to weigh in favor of profit. We support the support of Wild Fish Conservancy's efforts to protect Southern Resident killer whales and wild Chinook from commercial fishing in Southeast Alaska.

Respectfully,

Kathleen Hansen

Director
Rich Passage Estates HOA
Bainbridge Island, WA

Support for the Wild Fish Conservancy's lawsuit to protect Southern Resident killer whales and wild Chinook from troll fishing in Southeast Alaska

I moved to Washington State for my retirement because of its natural beauty both in terms of landscape and wildlife. I am an avid photographer and nothing thrills me more than seeing pods of Orcas in Puget Sound. Prior to retiring I worked for a large Fortune 100 company for 38 years. I am not anti-business, however, during my MBA degree there was an emphasis on social responsibility for businesses. This became one of my core values during my career with my prestigious company. Protecting our environment is the most important thing a business can do!

Not a Cattle Farm

Whales in general and Orcas specifically are a highly- evolved complex species. Aside from being endangered, they have complex social organization, the ability to community, and express emotions. Nothing illustrates more is the example of J-35 who carried her dead calf for 17 days. From the NY Times:

"The orca, identified by researchers as J35 and also known as Tahlequah, became a symbol in 2018 of the plight of the Southern Resident whales, which were 88 in number when they were listed as endangered in 2005 and have dwindled further since then."

While many people prefer wild fish over farmed, King Salmon is a wildly over priced fish that is not designed to feed the masses. Because of the decreasing numbers of King Salmon, they can no longer be sustainably fished to feed both Orcas and Humans. Humans have many Salmonoid and other wild fish alternatives. Orcas do not.

Respectfully,

Tom Hansen
Bainbridge Island

Paul Engelmeyer
PO Box 496
Yachats, OR, 97128
pengelmeyer@peak.org
(541) 547-4097
6/9/2023

Members of the Ninth Circuit Court of Appeals
Re: Protecting Chinook Salmon and Orcas: the sacrifices and investments of Oregon Coast Communities

Dear Members of the Ninth Circuit,

I would like to take take this opportunity to comment on issues related to Chinook Salmon and Orcas. I would like to draw attention to the efforts made by the communities along the Oregon Coast to rebuild depleted salmon and restore those populations of Chinook salmon that travel between Oregon and Southeast Alaska and the Southern Resident Killer Whales that periodically come to forage for Chinook Salmon along the Oregon Coast. As a concerned citizen and an ardent advocate for the environment, I feel compelled to share the sacrifices and investments made by Oregon communities in the face of the continued decline of Chinook stocks and the fisheries closures that have occurred for both these species.

The Chinook salmon and Southern Resident Killer Whales hold immense ecological and cultural significance. As you are well aware the survival of both species is interdependent, as Chinook salmon are a primary food source for orcas. Unfortunately, the declining numbers and size of Chinook salmon have directly impacted the orca population, leading to their endangered status. Recognizing the importance of these species and the urgent need for action, Oregonians have been at the forefront of conservation efforts.

The communities on the Oregon Coast have demonstrated an unwavering commitment to the preservation of our Coastal Coho salmon which are on the ESA list and Chinook salmon as well orcas despite the continued decline of Chinook stocks. During my career, over $102,000,000 have been invested in watershed restoration and water quality improvement from government programs, private foundations, and individual donations. Our communities have dealt with reduced fishing, in some instances, closing entire rivers to allow fish to reach their spawning grounds. This year, commercial troll fishing for Chinook is closed off our coast to protect weak stocks and ensure their long term survival.

These closures, while necessary to protect the remaining Chinook salmon populations, have imposed significant hardships on the fishing communities, as they rely on salmon for their livelihoods. The communities have abided by the management decisions, adhering to strict regulations and guidelines, to reduce the impact on salmon populations. This has required great sacrifices, as the closures have limited their fishing opportunities and posed economic challenges for the affected individuals and businesses. This isn't the first time that these sacrifices have been

made, as our communities have dealt with fishing closures since the listing of Coho Salmon in the 1990's.

As a part of these closures we have worked with fishers for over 2 decades through innovative initiatives aimed at supporting salmon conservation while also providing economic opportunities for local fishing communities. Under the "Hire a Fisher" program fishers are contracted or hired by conservation organizations to carry out specific tasks related to salmon habitat restoration, monitoring, and fishery reform research. Such initiatives have required extensive collaboration between community members, local organizations, and government agencies, showcasing the remarkable spirit of unity and shared responsibility.

Despite the sacrifices and investments made by our local community, fishing on these same populations has continued unabated in waters off the coast of British Columbia and Alaska. Restored habitats along our coastline are going without the minimum number of Chinook needed to produce subsequent generations of fish, undermining the work we have done to recover local salmon populations. Recently, Chinook along our coast were petitioned for listing under the Endangered Species Act, and the National Marine Fisheries Service is currently evaluating whether these fish deserve further protection. Alarmingly, through monitoring and evaluation, the abundance, size, and age of Chinook salmon continues to decline as the impacts from climate change are amplified. By highlighting the continued decline of Chinook stocks and the impact of fisheries closures, these initiatives have fostered a sense of urgency and spurred collective action.

The communities' dedication to education and public outreach has been instrumental in creating a deeper understanding of the need for conservation measures and garnering support from various stakeholders. In light of these outstanding efforts, I urge you to recognize and appreciate the immense sacrifices and investments made by the communities on the Oregon Coast. It is crucial that their contributions are acknowledged, as they strive to protect Chinook salmon and orcas despite the ongoing decline in Chinook stocks and the fisheries closures occurring throughout our coast.

To address the challenges and ensure the long-term survival of these species I kindly request you recognize the work we've done by upholding the lower courts decision to close the Southeast Alaska Commercial Fisheries until an adequate environmental analysis and public process can be completed. By honoring the work we've done locally to conserve salmon, we can build a future where fish are no longer endangered, and our coastal ecosystems remain robust and vibrant for generations to come.

Thank you for your attention to this matter.

WALTER HENRY HART
37515 - 246 Ave. S.E.
P.O. Box 62
Enumclaw, WA 98022

C: (253) 797-1497
W: (360) 825-5581
Trip@TripHart.com

June 11, 2023

To Whom this may concern:

Re: WFC Lawsuit

I fully support Wild Fish Conservancy's lawsuit to protect Southern Resident killer whales and wild Chinook from commercial fishing in Southeast Alaska. They are such an integral part of our culture, and have been poorly treated over the many decades that commercial fishing has hurt their existence.

There are many individuals and entities all over Puget Sound desiring these threatened and endangered species be protected. We are trying to take our own small steps, from protecting the streams and rivers, to keeping pollutants out of our waters. Please take all appropriate measures to ensure that this lawsuit is carried to its rightful end, and that our environment is properly protected.

One side is concerned only about money. The other side is concerned about life. Please let life win out over money.

Thank you for what you do on behalf of all the citizens of the United States, and the many species within our world.

Walter H. Hart

June 10, 2023

U.S. Court of Appeals for the Ninth Circuit
P.O. Box 193939
San Francisco, CA 94119-3939

Re: Appeal of U.S. District Court Western District Judge Richard A. Jones' *Order Adopting Report and Recommendation,* Case No. 20-cv-417-RAJ (May 2, 2023)

To Whom It May Concern:

U.S. District Court Western District Judge Richard A. Jones' order in the case of *Wild Fish Conservancy Plaintiff v. Scott Rumsey, et al., Defendants, and Alaska Trollers Association and State of Alaska, Defendants* protected my interests in the recovery of both endangered Southern Resident killer whales (SRKWs) and wild Chinook populations. Any reversal of the directive halting the summer and winter seasons of the Southeast Alaska Chinook troll fishery would stand against my interests, and the interests of thousands of other U.S. citizens sharing my concerns. Continuing this fishery would cause immediate harm to SRKWs by limiting their Chinook food source, and it would also harm the long-term recovery of Chinook populations that spawn in British Columbia, Washington, and Oregon.

My interests have been informed by a 40-year career in wildlife biology, including 12 years of experience living and working in Washington state where I became familiar with regional wildlife issues. From 2011 – 2017, I was Vice President of Conservation at the Woodland Park Zoo (Seattle), and from 2011 – 2021, I volunteered at the Washington State Department Fish & Wildlife as an endangered species project collaborator and nongame advisor. In 2021, I served as one of nine Washington State Fish & Wildlife Commissioners, the board overseeing the Department.

My concern for SRKWs and Chinook is part of my larger concern about the existential consequences of biodiversity loss [1] and climate change [2] on ecosystem health. I am not alone in this concern; thousands of Washingtonians share this worry. Wildlife conservation supporters and the public-at-large have a vested interest in any judicial decision that affects species and ecosystem health because functioning ecosystems are linked directly to human prosperity and wellbeing [3].

Judge Jones directed the National Oceanic and Atmospheric Administration (NOAA) to correct several environmental violations, including a comprehensive review and public comment process on Southeast Alaska fishery's impacts on ESA-listed SRKWs and Chinook. In the interim, the Court also wisely ruled that halting the Southeast Alaska troll fishery during the summer and winter seasons was the most appropriate remedy to protect the killer whales and threatened Chinook from further harm.

Now, NOAA Fisheries, the State of Alaska, and the fishing industry have appealed the case to the Ninth Circuit asking to overturn Judge Jones' decision, arguing the fishery should be allowed for economic reasons to continue harvest of about 172,000 Chinook each year. This appeal's request comes down bluntly to the economic gain for some people over the continued existence of two

species threatened with extinction; hidden in the appeal is that it also is risking the health of SRKWs and Chinook, which in turn jeopardizes the long-term interests (prosperity and wellbeing) of many current and future citizens. The economic benefits of full Chinook recovery over time would be orders of magnitude greater than the economic benefit this appeal pleads.

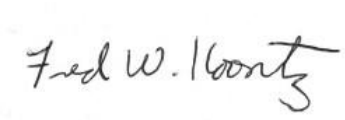
SRKWs are residents of the Salish Sea and unlike other killer whales have a unique diet that consists entirely of fish, primarily mature Chinook salmon. The major threats that led to the SRKWs' ESA listing are the decline of salmon; noise and vessel impacts; habitat destruction; and pollution. Especially key to this case is that scientists after a "population viability analysis" concluded that the effects of prey abundance had the largest impact on the SRKWs' population growth rate and persistence [4].

Continuing the Southeast Alaska troll fishery will intercept many tens of thousands of Chinook before they would otherwise return to British Columbia, Washington and Oregon waters, where some would be immediately available as food for SRKWs. Equally important, additional returning Chinook would be available to spawn and contribute to their species recovery that in the long run could provide additional Chinook for both SRKW and human harvest.

In closing, it is noteworthy that the same basic disagreement behind this appeal -- preservation or immediate harvest -- increasingly is debated in wildlife management agencies, including in Washington state [5]. Washington state elected and appointed officials are obligated to protect the public wildlife trust for current and future generations. The sad truth is that they are failing. Washington's Department of Fish & Wildlife focuses (>90% of its budget) on sustaining food fish and game animals for human consumption, despite knowing that more than 268 other Washington nongame animals need conservation [6]. So the debate to preserve more, harvest less, is growing.

Hunters and recreational and commercial anglers historically have dominated Washington's Department of Fish & Wildlife and still do despite the fact that < 3% of Washingtonians hunt and <10% fish. However, public wildlife values are changing and the balance of power is shifting away from shorter-term consumptive use of animals for recreation or profit and toward preservation for the longer-term human benefit that healthy ecosystems provide. Research from *America's Wildlife Values Project* [7] revealed that as the United States modernizes, there is a decreased number of utilitarians who believe wildlife should be managed for human benefit and an increase in mutualists who believe treating animals as mere resources should stop. This case before the U.S. Ninth Circuit Court of Appeals is an opportunity to rule on this argument.

Sincerely,



Fred W. Koontz, Ph.D.

Duvall, WA 98019

References (for Koontz Letter, June 10, 2023)

[1] Secretariat of the Convention on Biological Diversity (2020) Global biodiversity outlook 5. Montreal, Canada. https://www.cbd.int/gbo/gbo5/publication/gbo-5-en.pdf (accessed 06/04/2023).

[2] IUCN. (2019). Issues briefs: climate and species. Gland, Switzerland. https://iucn.org/sites/default/files/2022-04/species_and_climate_change_issues_brief-2019-12 (accessed 06/10/2023).

[3] Naeem, S., Chazdon, R., Duffy, E. J., Prager, C. & Worm, B. (2016). Biodiversity and human well-being: an essential link for sustainable development. Proc Biol Sci: 283(1844): 20162091. Doi: 10.1098/rspb.2016.2091/

[4] Lacy, R.C., Williams, R., Ashe, E. *et al.* (2017). Evaluating anthropogenic threats to endangered killer whales to inform effective recovery plans. *Sci Rep* **7**, 14119 (2017). https://doi.org/10.1038/s41598-017-14471-0.

[5] Koontz, F.W. (2022). Refocus Fish & Wildlife mandate on conservation. The Seattle Times, Opinion Page, April 7. https://tinyurl.com/6at922fn (accessed 06/04/2023).

[6] Washington Department of Fish and Wildlife. (2015). Washington's state wildlife action plan: 2015 update. Washington Department of Fish and Wildlife, Olympia, WA. https://wdfw.wa.gov/sites/default/files/publications/01742/wdfw01742.pdf (accessed 06/04/2023).

[7] Manfredo, M. J., Sullivan, L., Don Carlos, A. W., Dietsch, A.M., Teel, T. L., Bright, A. D., & Bruskotter, J. (2018). America's wildlife values: the social context of wildlife management in the U.S. National report from the research project entitled "America's Wildlife Values." Fort Collins, CO: Colorado State University, Department of Human Dimensions of Natural Resources. America's Wildlife Values – AWV (colostate.edu) (accessed 06/04/2023).

Marilyn McFarland
4901 54th Ave S
Seattle, WA 98118

To Whom it May Concern,

I'm writing in support of the SE Alaska troll fishing ruling, WFC vs NOAA, that requires NOAA to abide by federal ESA law. As a long time advocate for wild salmon and their ecosystems, I have watched in sadness the slow march toward extinction of Chinook salmon, and the impact their declining numbers have had on other species, and our local fishing communities that depend on them for their survival.

ESA is law. We cannot pick and choose when to enforce it. NOAA has put the needs of the fishing industry above the needs of ESA listed Orca whales; Orca that are on the verge of extinction due mostly to the lack of their food source, Chinook salmon. This is illegal.

Orca whales and Chinook salmon are beloved species in our region. They have intrinsic value in and of themselves, but are also crucially important to the ecology and culture of our region. For years, again and again, I have witnessed federal and local agencies fail to take the steps necessary to protect them, always putting the needs of the fishing industry, and wants of politicians, before the needs of species conservation. I have witnessed the negative impacts to local tribal culture and well being, due to the loss of abundance of these species. I have personally been part of the community of citizens and tribes that have struggled in the fight to save these species from extinction. I have sat on committees, donated dollars, restored habitats, wrote letters, and protested inaction on their behalf. I watched in horror for weeks as a female Orca carried her dead calf on her back refusing to accept its death. The entire region mourned for her.

Our regional government have implemented new laws restricting land use, and development to protect riparian zones and water quality. The state has spent millions on habitat restoration, and even more on hatcheries that have failed to restore abundance. Seals have been killed, seabirds have been culled, but the one thing that has not been attempted, is discontinuing the harvest of Chinook intercepted in by SE Alaska fisherman. NOAA kowtows to the fishing industry, ignoring their duty to sustain and conserve our fisheries resources. NOAA allowed an entire fishing community in SE Alaska to be built around a fishery they knew was not sustainable. They should be held accountable for it's fall, and the failure to do their job to protect endangered species and conserve our fisheries resource.

I can't think of two species more beloved than Orca whales and

Chinook salmon to our region. There are 73 Orca left. They are starving. Halting the SE Alaska troll fishery will provide a critical food source for the Orca at a perilous time for the species. Climate change is intensifying the challenges for the survival of both species, and time is of the essence. Managing an open ocean fishery is not possible. Transitioning the SE Alaska fishery to a terminal fishery would alleviate many of the management problems. Instead of appealing this important ruling, NOAA should be leading the way in facilitating the SE Alaska fishing community's transition to a more sustainable and dependable future.

Biodiversity is plummeting around the world. The Endangered Species Act is an important tool our nation can use to protect biodiversity for the health of our region, and the planet as a whole. It is important not only for the species themselves, but for our own survival as well. We cannot kick the can down the road and wait for plans to be put in place that may or may not help to protect species. There is not time for that. To protect Orca from slipping into extinction, they need food now. ESA law must be enforced. I implore you to uphold this critically important ruling. If we cannot take this step to save two species as beloved as Ocra whales and Chinook salmon, we may not be able to save any species, including ourselves.

Respectfully,

Marilyn McFarland

June 12, 2023

Re: ***Wild Fish Conservancy v. Rumsey et al.***

To Whom It May Concern:

The Conservation Angler (TCA) writes to express its support for the Wild Fish Conservancy's (WFC) lawsuit to protect wild Chinook salmon and Southern Resident Killer Whales (SRKW). As a wild salmon and steelhead conservation organization headquartered next to Puget Sound, TCA is very interested in the outcome of this litigation. TCA works tirelessly to protect wild salmon and steelhead throughout the Pacific Northwest, and its efforts to protect wild Chinook populations also benefit SRKW. TCA applauds WFC for bringing this action to protect these iconic species.

TCA is a 501(c)(3) nonprofit corporation based in Edmonds, Washington that uses science and law to protect wild salmon and steelhead populations throughout North America and Kamchatka, Russia. TCA regularly engages in government efforts that affect wild salmon and steelhead survival and recovery. For example, TCA regularly testifies before the Washington and Oregon Fish and Wildlife Commissions on harvest management and hatchery operation issues. When necessary, TCA also engages in litigation to ensure that wild salmon and steelhead populations are protected under federal and state laws.

The southeast Alaska troll fishery undermines TCA's work by killing too many wild Chinook salmon, many of which come from populations that are listed under the Endangered Species Act (ESA). The fishery's impact is especially concerning because it kills wild Snake River spring/summer Chinook, a species that includes several populations that are quasi-extinct. TCA is encouraged by the district court's ruling and hopes that its decision will be upheld on appeal so that wild Chinook salmon and SRKW receive the protections afforded to them under the ESA.

Sincerely,

David Moskowitz
Executive Director
The Conservation Angler