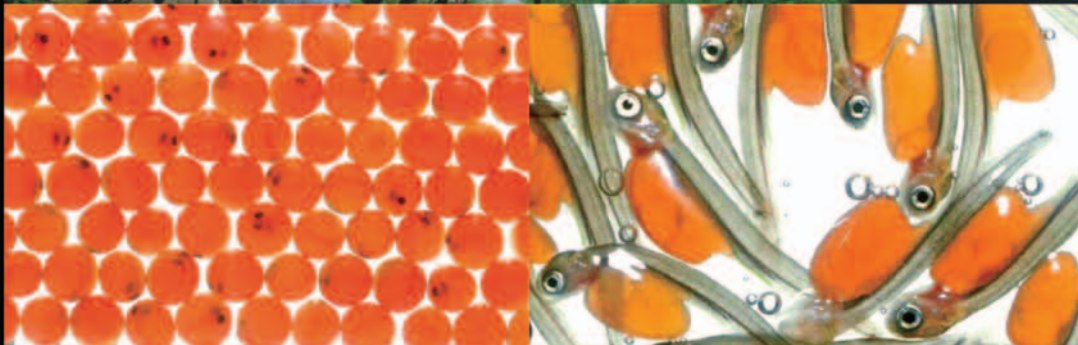
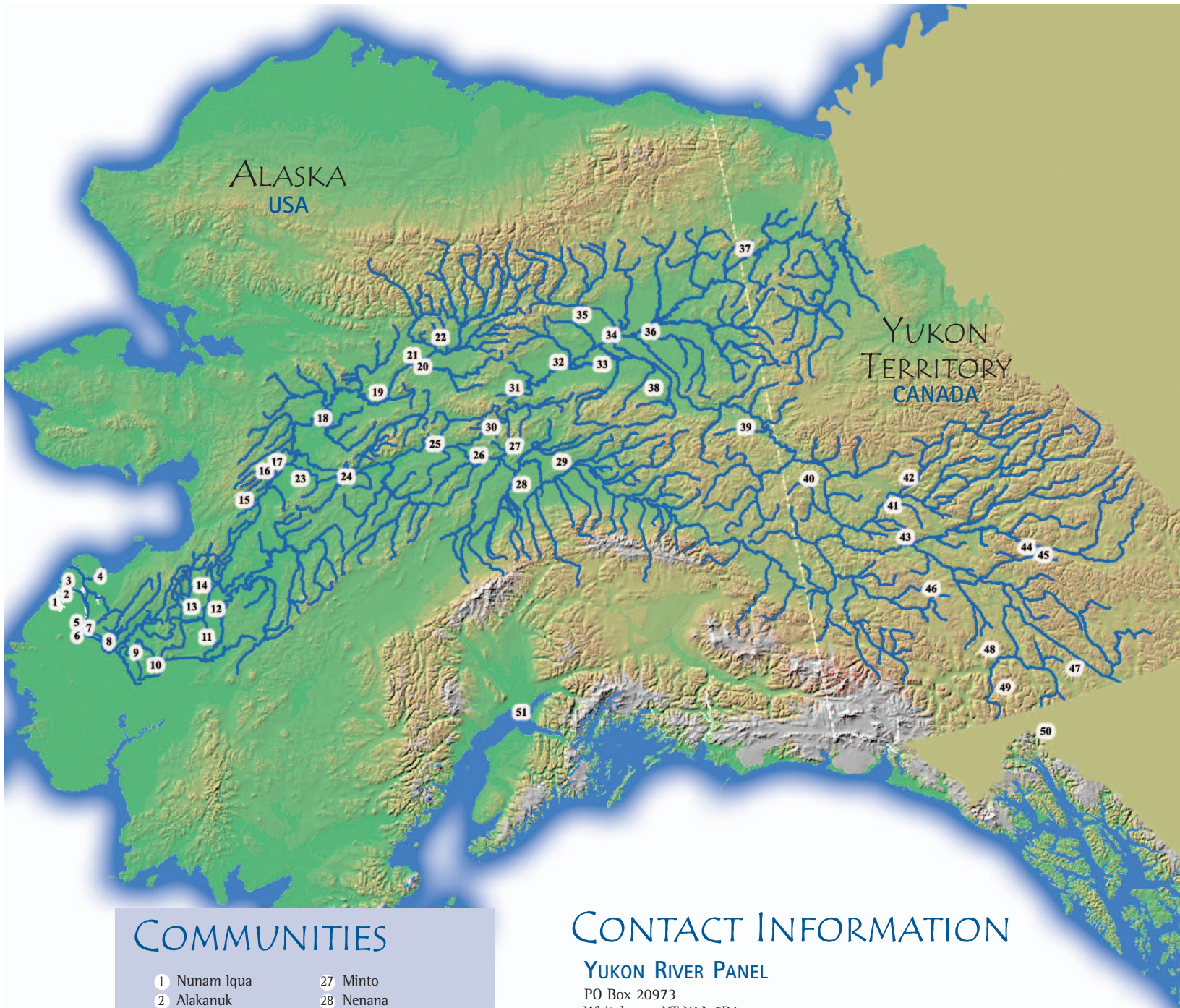


YUKON RIVER SALMON AGREEMENT HANDBOOK



Information and Reference Materials Related to the Yukon River Salmon Agreement



COMMUNITIES

- | | |
|-----------------------|---------------------|
| 1 Nunam Iqua | 27 Minto |
| 2 Alakanuk | 28 Nenana |
| 3 Emmonak | 29 Fairbanks |
| 4 Kotlik | 30 Rampart |
| 5 Mountain Village | 31 Stevens Village |
| 6 Pitka's Point | 32 Beaver |
| 7 St Mary's | 33 Birch Creek |
| 8 Pilot Station | 34 Ft Yukon |
| 9 Marshall | 35 Venetie |
| 10 Russian Mission | 36 Chalkyitsik |
| 11 Holy cross | 37 Old Crow |
| 12 Shageluk | 38 Circle |
| 13 Anvik | 39 Eagle |
| 14 Grayling | 40 Dawson |
| 15 Kaltag | 41 Stewart Crossing |
| 16 Nulato | 42 Mayo |
| 17 Koyukuk | 43 Pelly Crossing |
| 18 Huslia | 44 Faro |
| 19 Hughes | 45 Ross River |
| 20 Allakaket | 46 Carmacks |
| 21 Alatna | 47 Teslin |
| 22 Bettles | 48 Whitehorse |
| 23 Galena | 49 Carcross |
| 24 Ruby | 50 Atlin Lake |
| 25 Tanana | 51 Anchorage |
| 26 Manley Hot Springs | 52 Whitehorse Dam |

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Front Cover Photos:

Main Photo: *Salmon drying on a rack in Kaltag, Alaska.* ©Polly Wheeler
Smaller insets: *The life stages of a salmon, in order from left to right: the Egg stage, the Alevin stage, and the Adult stage.* Egg & Alevin courtesy of U.S. Fish & Wildlife Service. Adult ©YRDFA.

Back Cover Photos:

All photos © YRDFA.

Map credits:

Yukon River Drainage Map, Courtesy of NOAA, Auke Bay Laboratory

YUKON RIVER SALMON AGREEMENT HANDBOOK:

Information and Reference Materials
Pertaining to the Yukon River Salmon Agreement

The *Yukon River Salmon Agreement* (YRSA) outlines steps to ensure the future for the Yukon River salmon fishery through harvest sharing, research and habitat protection. Ultimately, the Agreement was the work of the people who depend upon salmon for subsistence, cultural, commercial or recreational purposes. There would have been no forward movements in the negotiations for the Agreement without the people's dedication and hard work to preserve the Yukon River way of life. The people of the Yukon River should take great pride in the *Yukon River Salmon Agreement* set in place to protect their salmon resource.

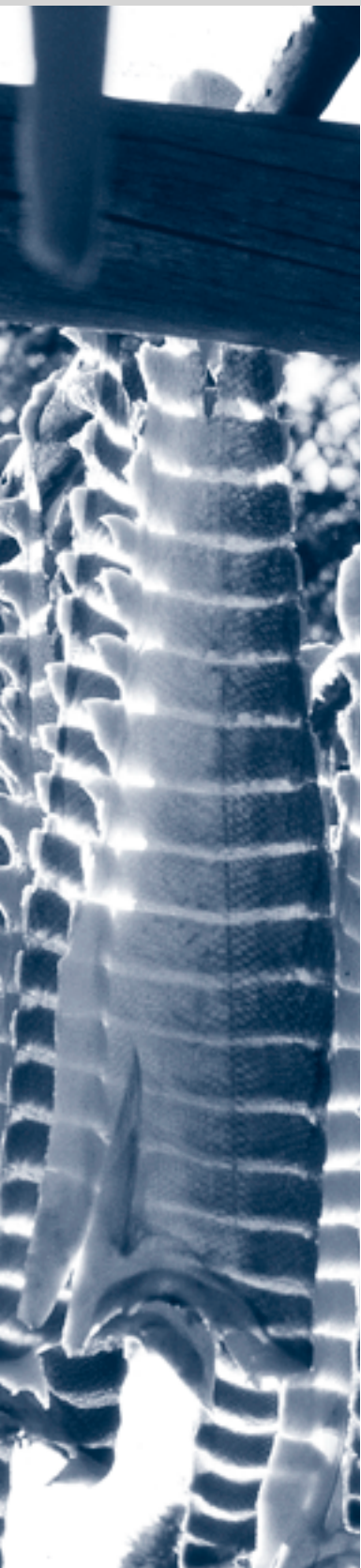
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Courtesy of Jim Magdanz



YUKON RIVER DRAINAGE FISHERIES ASSOCIATION • YUKON RIVER PANEL





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TO THE PEOPLE OF THE YUKON RIVER DRAINAGE:

Welcome to a background on the Yukon River Panel along with information on Yukon River salmon stocks.

Salmon that originate in the Canadian portion of the Yukon River drainage are a shared resource between the Yukon Territory (Canada) and Alaska (U.S.). Yukon River Chinook and chum salmon have some of the longest migratory journeys in the world and are prized for their size and oil content. The people along the river depend on this resource for food, social, ceremonial, recreational and economic purposes. Due to sharp declines of Canadian-origin Yukon River salmon populations, the two countries negotiated a cooperative management arrangement for these resources.

The Yukon River Salmon Agreement outlines steps to ensure the sustainability of Canadian-origin, Yukon River salmon stocks and fisheries through conservation, management practices, stock rebuilding, harvest sharing, research and habitat protection. Ultimately, the Agreement was achieved by the people who depend upon and manage these salmon fisheries. The negotiations succeeded because of the dedication and hard work of Yukon River residents to preserve the salmon stocks and fisheries essential to their Yukon River way of life. The people of the Yukon River take great pride in the Yukon River Salmon Agreement as it continually enables their effective participation in managing the Canadian-origin salmon resources.*

We would like to thank those who contributed to the negotiation of the Agreement and the operation of the Yukon River Panel. We would also like to thank those involved in the writing and editing of this handbook. It was a cooperative effort by the U.S. and Canadian Yukon River Panel members and Co-chairs, the Panel's Secretariat, the Yukon River Panel Joint Technical Committee and the Yukon River Drainage Fisheries Association (see acknowledgements, inside back cover). Thank you for your continued dedication to the Yukon River salmon stocks and their habitats.

Gordon Zealand, Canadian Co-chair

Mary C. Pete, U.S. Co-chair

*Although the Yukon River Salmon Agreement applies to salmon originating in the Yukon River, the Agreement specifically addresses the restoration and conservation of Yukon River salmon stocks of Canadian-origin.

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Courtesy of YRDFA



Courtesy of YRDFA

AN INTRODUCTION TO THE HANDBOOK



Courtesy of USFWS

This handbook was produced by the Yukon River Panel (YR Panel) and the Yukon River Drainage Fisheries Association (YRDFA) as a resource for Yukon River fishers, First Nations, Tribal Councils, fisheries managers and others whose lives are affected by the Yukon River Salmon Agreement. The intent of this handbook is to provide a reference for understanding the events leading up to the signing of the Yukon River Salmon Agreement (referred to as the Agreement), the content of the Agreement and provisions related to improving conservation and restoration of Yukon River salmon of Canadian-origin.

This handbook outlines what the Agreement means for Alaskans and Yukoners (Yukon Territory residents) with respect to conservation, restoration, harvest shares and fishery management obligations for Canadian-origin salmon stocks. The table below lists the common, scientific and native names for Chinook and chum salmon (two of the species of salmon described in the Agreement). Throughout the handbook you will find general information about the YR Panel, the YR Panel Executive Secretariat, the Yukon River Joint Technical Committee (JTC) and the Restoration and Enhancement Fund (R&E Fund). A description of the Yukon River drainage, fishery types, and an overview of fisheries management, as well as frequently asked questions and a glossary of terms have been included as supplemental information. For reference purposes, the *Yukon River Salmon Agreement* and the *Yukon River Salmon Act of 2000 (U.S.)* have also been included.

NAME	CHINOOK SALMON	CHUM SALMON
COMMON	<i>King Salmon</i>	<i>Dog Salmon</i>
SCIENTIFIC	<i>Oncorhynchus tshawytscha</i>	<i>Oncorhynchus keta</i>
CENTRAL YUPIK	<i>taryaqvuk</i>	<i>teggmaarrluk</i>
DEG HIT'AN	<i>ggath</i>	<i>nalay</i>
HOLIKACHUK	<i>ggath</i>	<i>nalay</i>
KOYUKON	<i>gal</i>	<i>nulaga</i>
LOWER TANANA	<i>gath or gał</i>	<i>nulaghi, gath or k'edenadlyoyi</i>
MIDDLE TANANA	<i>łuuge che'e</i>	<i>nuleghi</i>
TANACROSS	<i>łuug delt'el chox</i>	•
UPPER TANANA	<i>ts'ernah'</i>	•
AHTNA	<i>łuk'ee'e</i>	<i>luk'ae seyi</i>
GWICH'IN	<i>luk choo</i>	<i>khii</i>
HAN	<i>tr'ojà', łuk cho</i>	<i>tth'ay</i>
NORTHERN TUTCHONE	<i>gyo</i>	<i>thi'</i>
SOUTHERN TUTCHONE	<i>gyü</i>	<i>thi'</i>
TAGISH	<i>gēs</i>	•
TLINGIT	<i>t'á</i>	<i>tîl'</i>
KASKA	<i>gēs</i>	•

• = name not available

THE YUKON RIVER SALMON AGREEMENT – BACKGROUND

Fish and wildlife resources provide the foundation for the survival and livelihood of many people who reside within the Yukon River drainage. Salmon, a staple food in most communities, is one such resource harvested since time immemorial through traditional subsistence and aboriginal, or commonly referred to as First Nation, practices. Comparatively, commercial fishing – a relatively recent practice for harvesting salmon, first occurred on the Yukon River in Canada near the turn of the 20th century and shortly thereafter in the Alaskan portion of the drainage. From the early 1970s through to the 1990s, commercial practices generally contributed to the subsistence-based economies of many communities. However, sharp declines in the productivity of Yukon River drainage salmon stocks caused dramatic reductions in returning salmon runs beginning in 1998. For the first time since the start of commercial fisheries on the Yukon River, insufficient numbers of Chinook and chum salmon returned to meet escapement requirements and failed to support harvests in all fisheries. Both Alaskan and Yukoners (Yukon Territory residents) came together and agreed to make substantial sacrifices to rebuild Canadian-origin salmon stocks – a major contributor to the Yukon River way of life.



Courtesy of YRDLFA

PACIFIC SALMON TREATY

The United States (U.S.) and Canada signed the Pacific Salmon Treaty (PST) in 1985 to address interception of salmon originating in one nation by the fisheries of the other nation. The PST was necessary to conserve and manage Pacific salmon stocks (in areas of Alaska, Idaho, Washington, Oregon, Yukon Territory and British Columbia) to ensure sustainable fisheries and optimum production of salmon. Allowing the country of origin to receive sufficient benefits from salmon originating in its waters, presumably, promotes sustainable management of the salmon and their habitat. Both the U.S. and Canada recognized that many salmon returning to the U.S. Pacific Northwest are harvested in Canadian fisheries. Likewise, they recognized that a substantial number of Canadian-origin salmon are intercepted in U.S. fisheries. As both countries derive benefits from shared salmon resources, the welfare of salmon stocks was a matter of concern for both countries and each country desired to cooperate in the conservation, rebuilding, management, research and enhancement of shared salmon stocks.

The first principle of the PST directed that overfishing should be prevented and each country should be provided with benefits equivalent to the production of salmon originating in its waters. The PST went on further to set limits to the number of salmon, of a particular species, that could be harvested in a specific fishery, taking into account annual variations in abundance of salmon stocks and the desire to reduce interceptions and avoid undue disruption to existing fisheries. Most of the fishery arrangements incorporated in the PST in 1985 dealt with ocean fisheries intercepting salmon hundreds of miles from their river of origin. However, trans-boundary rivers were specifically noted in the PST.

THE AGREEMENT WAS
NEGOTIATED ON THE
PREMISE THAT APPROXI-
MATELY 50% OF YUKON
RIVER SALMON HARVESTED
IN ALASKA ARE BOUND
FOR SPAWNING GROUNDS
IN CANADA.

THE YUKON RIVER SALMON AGREEMENT HELPS ENSURE ADEQUATE NUMBERS OF SALMON—PRIZED FOR THEIR HIGH OIL CONTENT AND RICH TASTE—ARE ALLOWED TO PASS INTO CANADA TO SPAWN IN THEIR NATAL STREAMS.

YUKON RIVER SALMON AGREEMENT

The PST, as signed in 1985, does not specifically address Yukon River stocks other than in a Memorandum of Understanding (MOU) incorporated into the PST as Article VIII (8). The MOU states that together both countries are required to develop research plans, address conservation concerns through stock assessment and preliminary escapement objectives, and establish a technical committee to compile available data and itemize research requirements for future management and conservation for the Yukon River. The technical committee was formalized in March of 1985 and titled the 'Yukon River Joint Technical Committee' or, as it is commonly referred to, the 'JTC'.

From 1985 to 1995, negotiations between the two governments ensued as an agreement was to be established to meet provisions established under the MOU of the PST. These negotiations resulted in the creation of the Yukon River Panel (YR Panel), development of preliminary escapement goals and harvest share arrangements, and the establishment of a Restoration and Enhancement Fund (R&E Fund) - to support projects and programs designed to rebuild Canadian-origin stocks of salmon and improve management of those stocks.

By 1990, both the U.S. and Canada agreed to, and implemented, temporary border passage (also referred to as border escapement) objectives, harvest guidelines, stabilization escapement goals for Chinook salmon, and a chum salmon rebuilding plan. In 1995, an Interim Agreement was signed initiating cooperative management and establishing temporary harvest share arrangements of Canadian-origin salmon for the Yukon River. This temporary agreement, to manage and conserve Canadian-origin Yukon River salmon, was based upon 'abundance' of salmon and not 'equitable harvest share'.

While this temporary agreement was put into practice, negotiations were to continue for a long-term arrangement. Under the Interim Agreement, the YR Panel, a body of local fishers and agency representatives, was formed to make recommendations to the responsible U.S. and Canadian management entities for the conservation and management of Canadian-origin salmon'. The R&E Fund was also established. The supporting role of the JTC was also acknowledged in order to execute provisions set under the PST. However, negotiations for a permanent agreement failed to resume and the Interim Agreement was allowed to expire on December 31, 1997.

Negotiations for a permanent agreement resumed in 1999 at the same time as major declines in salmon runs on the Yukon River. In March of 2001, immediately after the devastating 2000 Chinook salmon run (Figure 1), a final agreement materialized in the form of the *Yukon River Salmon Agreement* (hereafter referred to as the Agreement) and represented an international commitment to the restoration, conservation and management of salmon upon which Yukon River communities depend. The Agreement was modeled after the 1995 Interim Agreement and built upon the abundance-based management method, also referred to as escapement-based management. Both countries agreed to manage their salmon fisheries to ensure enough spawning salmon are available to meet escapement requirements and to provide for harvests, when possible, according to the harvest sharing arrangements.

¹The Yukon River Salmon Act of 2000 states that the responsible management entity for the U.S. is the State of Alaska Department of Fish and Game.



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Pacific Salmon Treaty signed and JTC established. Equitable harvest shares the main principle.

1985

Yukon River Salmon Interim Agreement signed, establishing Yukon River Panel, R&E Fund and re-emphasizing the JTC's role.

1995

Yukon River Salmon Interim Agreement expires. Negotiations resumed for a permanent agreement. Salmon run sizes begin to decline.

1998

Updates and revisions made to the Pacific Salmon Treaty. Abundance-based management principle adopted.

1999

Although signed by delegations from both the U.S. and Canada in March 2001 and implemented by management agencies that same year, the Agreement did not receive official recognition as an executive agreement by the U.S. and Canadian governments until December 4, 2002. The Agreement incorporated the key features of the Interim Agreement, added rebuilding programs for Canadian-origin Yukon River chum and Chinook stocks, restoration and enhancement guidelines, called for the maintenance of existing salmon habitat, and included special provisions for the Porcupine River.

The Agreement, now chapter 8 of the PST, is truly unique. Besides setting out a distinct management regime for Yukon River salmon, which adheres to the broad science-based management principles of the PST, the Agreement assigns many functions and responsibilities of the Pacific Salmon Commission (body formed by U.S. and Canadian governments to implement the PST) directly to the YR Panel. Further, in the event the PST is ever terminated, the Agreement can stand on its own under the name “Yukon River Salmon Treaty” with the functions of the YR Panel to be assumed by a new commission referred to as the “Yukon River Salmon Commission”.

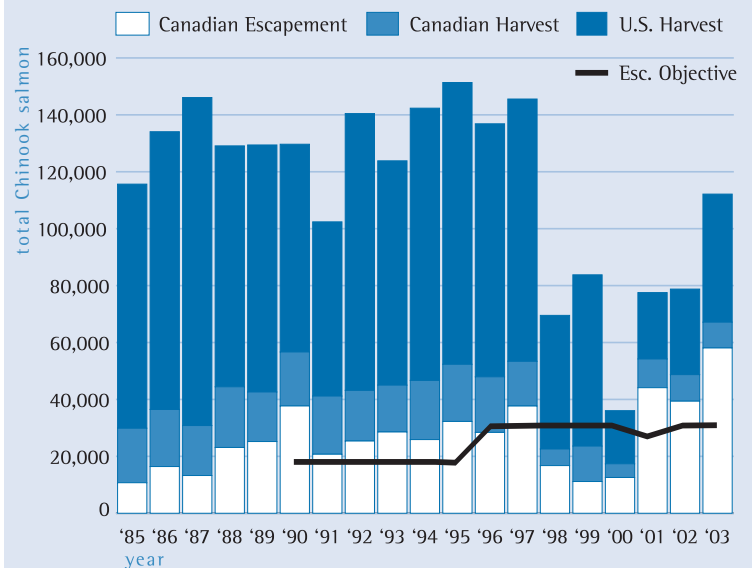
Funds to address U.S. obligations of the Agreement, also called treaty implementation funds, are authorized through the *Yukon River Salmon Act of 2000 (U.S.)* and appropriated by the U.S. Congress. The U.S. Congress can assign up to \$U.S. 4 million a year for treaty implementation funds, of which \$U.S. 1.2 million supports the YR Panel’s R&E Fund. The remainder of the treaty implementation funds, up to \$U.S. 2.8 million, goes toward funding the U.S. section of the YR Panel and the JTC, in addition to U.S. management and research activities. Currently, treaty implementation funds must be appropriated by the U.S. Congress each year. However, the *Yukon River Salmon Act of 2000 (U.S.)* must only be reauthorized every few years.

Implementation of Canadian responsibilities of the Agreement (i.e. Canadian YR Panel participation and management of fisheries) are supported by funds provided through the Department of Fisheries and Oceans, Canada (DFO), which are secured annually through regional DFO budgetary allocation processes.



© Steve O'Brien

FIGURE 1: 1985-2003
CANADIAN ORIGIN CHINOOK SALMON DATA



YR Salmon Act 2000 establishes the authority and structure for the US portion of the YR Panel and authorizes appropriations for the R&E Fund. Canadian portion of the YR Panel re-established.

Yukon River Salmon Agreement initiated by negotiators.

Yukon River Salmon Agreement receives official recognition as an annex to the PST from US and Canadian governments.

Yukon Salmon Act 2000 amended to extend R&E Fund for 2004-2008.

2000

2001

2002

2003

YUKON RIVER PANEL

THEIR [NATIVE
PEOPLE OF ALASKA
AND YUKON
TERRITORY]
AGREEMENT, FOR IT
TRULY IS THEIRS,
LAYS THE
FOUNDATION FOR A
BOUNTIFUL
RESOURCE FOR
GENERATIONS TO
COME.”

– STETSON TINKHAM,
U.S. DEPT. OF STATE

To enable the conservation and coordinated management of Yukon River salmon stocks of Canadian-origin, the YR Panel meets twice a year to make recommendations to the responsible management entities on both sides of the Alaska-Yukon border. Unlike other regional panels and management committees established under the PST, the YR Panel follows its own internal by-laws and procedures, independent from the Pacific Salmon Commission.

The YR Panel's main responsibilities, pertaining to Yukon River salmon stocks of Canadian-origin, are to:

DEVELOP AND IMPLEMENT agreed research and management programs;

MAKE ANNUAL RECOMMENDATIONS to the respective responsible management agencies of both countries concerning conservation and management coordination;

SET AND ADJUST annual salmon spawning escapement objectives, if necessary, based on pre-season projections, stock status and recommendations from the JTC; and

OVERSEE the use and administration of the R&E Fund.

The YR Panel is comprised of 12 appointed individuals, six from each country. The process to be nominated to serve on the YR Panel varies between the two countries². According to each country's respective laws or policies, U.S. members serve four-year terms and Canadian members serve five-year terms.

As mandated under the *Yukon River Salmon Act of 2000 (U.S.)*, the U.S. section of the YR Panel is comprised of one U.S. federal and one State of Alaska official who have expertise in salmon management and conservation. The other four are knowledgeable and experienced individuals, nominated by the Governor of Alaska and appointed by the U.S. Secretary of State. Of those remaining four YR Panel members, one is required to represent interests of the lower Yukon River fishing districts, one must represent interests of upper Yukon River fishing districts, and one must be an Alaska Native. The U.S. section of the YR Panel also has a number of advisors from Alaskan communities along the Yukon River. This advisory committee is made up of at least eight, but no more than twelve individuals, two of which are required to be Alaska Natives. The Governor of Alaska also appoints advisory committee members to serve two-year terms.

As required by the Umbrella Final Agreement (UFA), which is the common instrument for Yukon First Nation lands claim agreements, the majority (currently four members) of the Canadian section of the YR Panel must be from the Yukon Salmon Committee (YSC). The Yukon Territorial Government and DFO make recommendations for the other two appointments to Canada's Minister of Fisheries and Oceans, who makes all final appointments. Official advisors for Canada have not been established, but all Yukon First Nations, fishers, and residents within the Yukon River drainage in the Yukon Territory are encouraged to voice their concerns or opinions to the Canadian section of the YR Panel and its supporting entities – the JTC and the YR Panel Secretariat.

YUKON RIVER PANEL SECRETARIAT

The Agreement and YR Panel bylaws enable the YR Panel to appoint an Executive Secretary, which it has since the implementation of the Interim Agreement, to perform various responsibilities in support of the YR Panel. These responsibilities include:

MANAGING the YR Panel's administrative affairs and budget;

FACILITATING semi-annual meetings of the YR Panel;

ENCOURAGING COMMUNICATION within the YR Panel and between YR Panel, special interests and members of the public; and

MANAGING THE R&E FUND – including issuing the 'call' for project proposals, managing project contracts, and reporting on the status of the R&E projects.

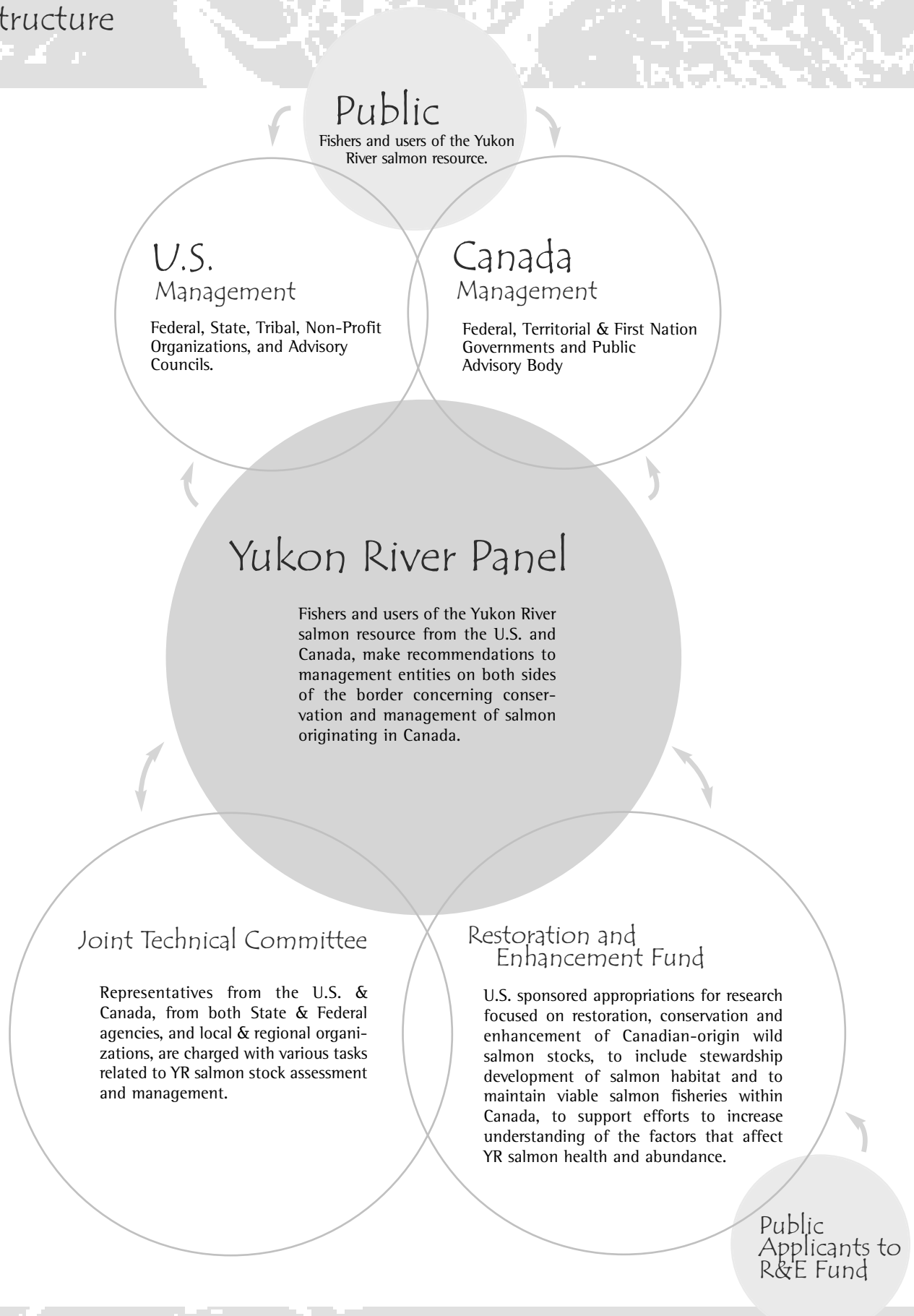
²If you are interested in becoming a YR Panel member contact the YR Panel co-chair of your country (see contact information on inside front cover).



Courtesy of YRDPA

YUKON RIVER SALMON AGREEMENT

Structure



YUKON RIVER JOINT TECHNICAL COMMITTEE

ALL THE PEOPLE
ALONG THE YUKON
RIVER HAVE A RIGHT
TO THEIR SHARE OF
THE RESOURCES, AND
SO CANADIAN
INTERESTS MUST BE
INCLUDED IN ANY
MANAGEMENT
SCHEME.

– BILL FLIRIS, TANANA,
AK RESIDENT

The JTC was established as an international advisory committee responsible for providing the best science, fishery management and technical expertise possible to support the YR Panel. It is comprised of technical representatives from Canadian federal, U.S. federal and State of Alaska government agencies, and other non-governmental organizations from the U.S. Additional technical expertise may be requested and/or provided through invitation by the JTC. The JTC meets twice a year and is charged with various tasks related primarily to Yukon River salmon stock assessment and management, including but not limited to:

EVALUATING AND RECOMMENDING escapement targets;

DEVELOPING AND REPORTING on run outlooks and proposed in-season management strategies to the YR Panel;

EXAMINING stock and habitat management regimes and recommending how they may be improved to achieve stock escapement and habitat management objectives;

EVALUATING AND REPORTING the status of Canadian-origin salmon stocks, annual fishery performance and making recommendations for adjustments to rebuilding programs;

REVIEWING AND EVALUATING proposals submitted to the R&E Fund for technical merit; and

DEVELOPING STOCK and habitat research plans and coordinating the delivery of special research projects.

Providing technical support to the YR Panel, the JTC prepares standard season summary reports, including a review of all Yukon River fisheries, marine fisheries information, status of spawning escapements, and provides technical review of R&E Fund project proposals.

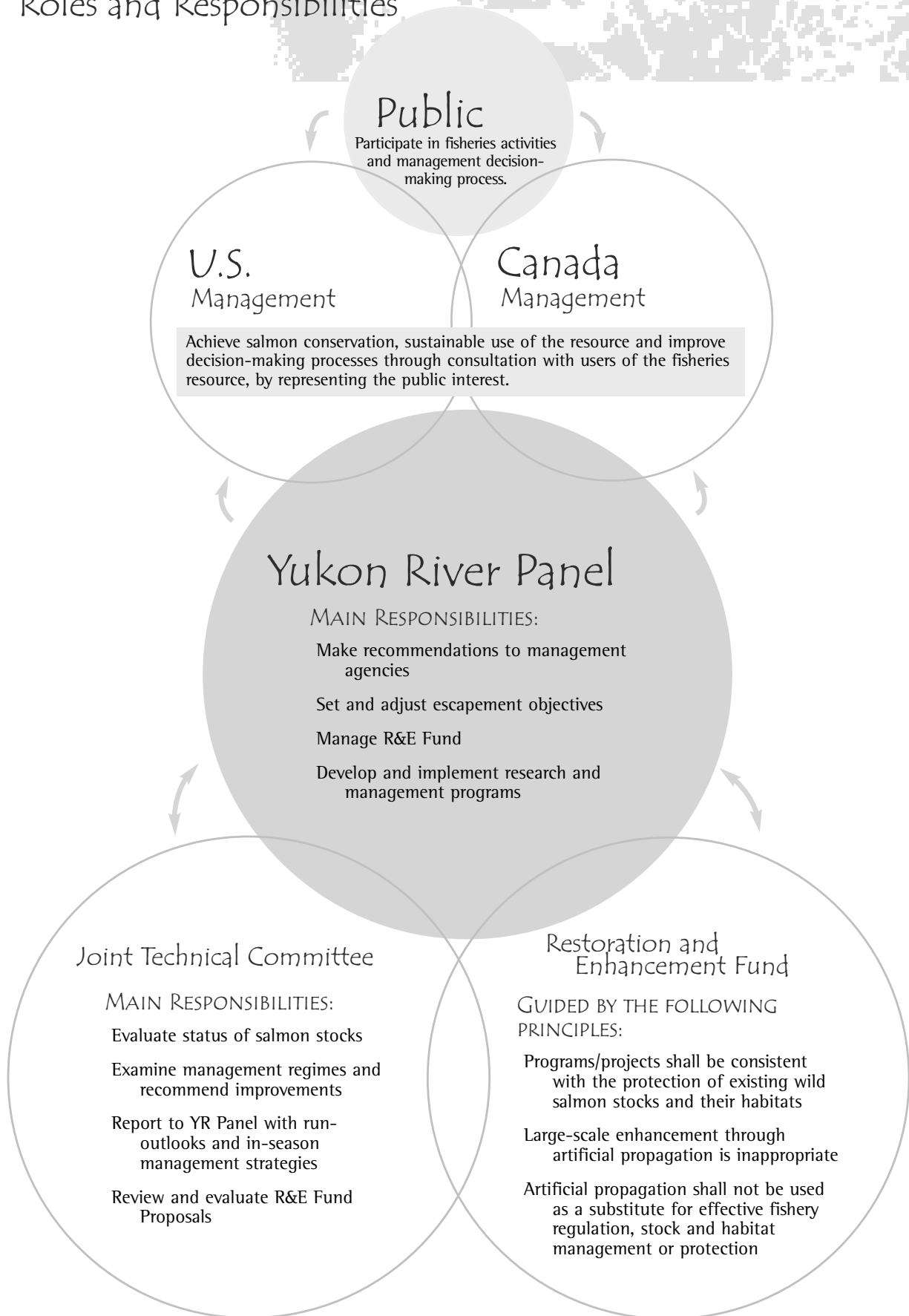
As of 2002, the JTC began developing a strategic plan for salmon research in the Yukon River drainage. This strategic plan is intended to provide guidance and information critical to the management, protection, restoration and sustainable use of Canadian-origin salmon stocks. Some of the gaps in current information could potentially be addressed through the YR Panel's Budget Priority Framework for the R&E Fund (Blewett, 2004) and funded through the R&E Fund, and/or other outside funding sources.



Courtesy of Jim Magdanz

YUKON RIVER SALMON AGREEMENT,

Roles and Responsibilities



RESTORATION AND ENHANCEMENT FUND



Courtesy of Bill Firth

The Agreement specifies the R&E Fund support programs, projects and associated research and management activities directed towards restoration, conservation and enhancement of Canadian-origin salmon stocks of the Yukon River in Alaska and the Yukon Territory - including the Porcupine River system. Within the Canadian portion of the Yukon River drainage, programs and projects can also be directed at developing stewardship of salmon habitat and resources, and for maintaining viable salmon fisheries. Through these efforts both countries hope to see a return to productive salmon stocks and the long-term sustainability of the salmon fisheries.

The appropriation granted to the R&E Fund, \$U.S. 1.2 million, is provided annually by the U.S. Congress. According to the Agreement, up to 50% of the available funds annually available can be disbursed directly by the Canadian section of the YR Panel on Canadian programs and projects. These programs and projects are approved by the Canadian section of the YR Panel, in consultation with the full YR Panel, and are consistent with the principles and guidelines of the R&E Fund. The full YR Panel decides how the remaining portion of the R&E Fund shall be allocated for programs and projects occurring either in Alaska or the Yukon Territory.

The R&E Fund is guided by the following principles:

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;

GIVEN THE WILD NATURE OF THE YUKON RIVER and its salmon stocks, and the substantial risks associated with the large-scale enhancement through artificial propagation, such enhancement activities are inappropriate at this time; and

ARTIFICIAL PROPAGATION SHALL NOT BE USED AS A SUBSTITUTE for effective fishery regulation, stock, and habitat management or protection.

Priorities for implementing R&E Fund programs and projects are: 1) restoring habitat and wild stocks; 2) conserving habitat and wild stocks; 3) enhancing habitat and; 4) enhancing wild stocks. These general priorities were refined in an R&E Fund budget priorities planning framework³. This framework identifies information gaps and includes criteria to prioritize R&E proposals within six broad areas (also referred to as envelopes) – conservation, restoration, enhancement, stewardship, viable fisheries and communication. The YR Panel may decide a funding priority for any given year, based on this framework.

The R&E funding process is initiated each fall by the Executive Secretary with a 'call' for one-page conceptual proposals. The conceptual proposals are reviewed by the JTC, in relation to the YR Panel's priorities, for technical merit. Based on the merits and appropriateness of the proposed project, the YR Panel decides in December which applicants should submit a detailed project proposal. The YR

Panel makes final funding decisions in March of every year. The YR Panel's Executive Secretary relays funding decisions to all project proponents, develops and administers contracts for the approved projects, and provides progress status reports on all projects to the YR Panel.

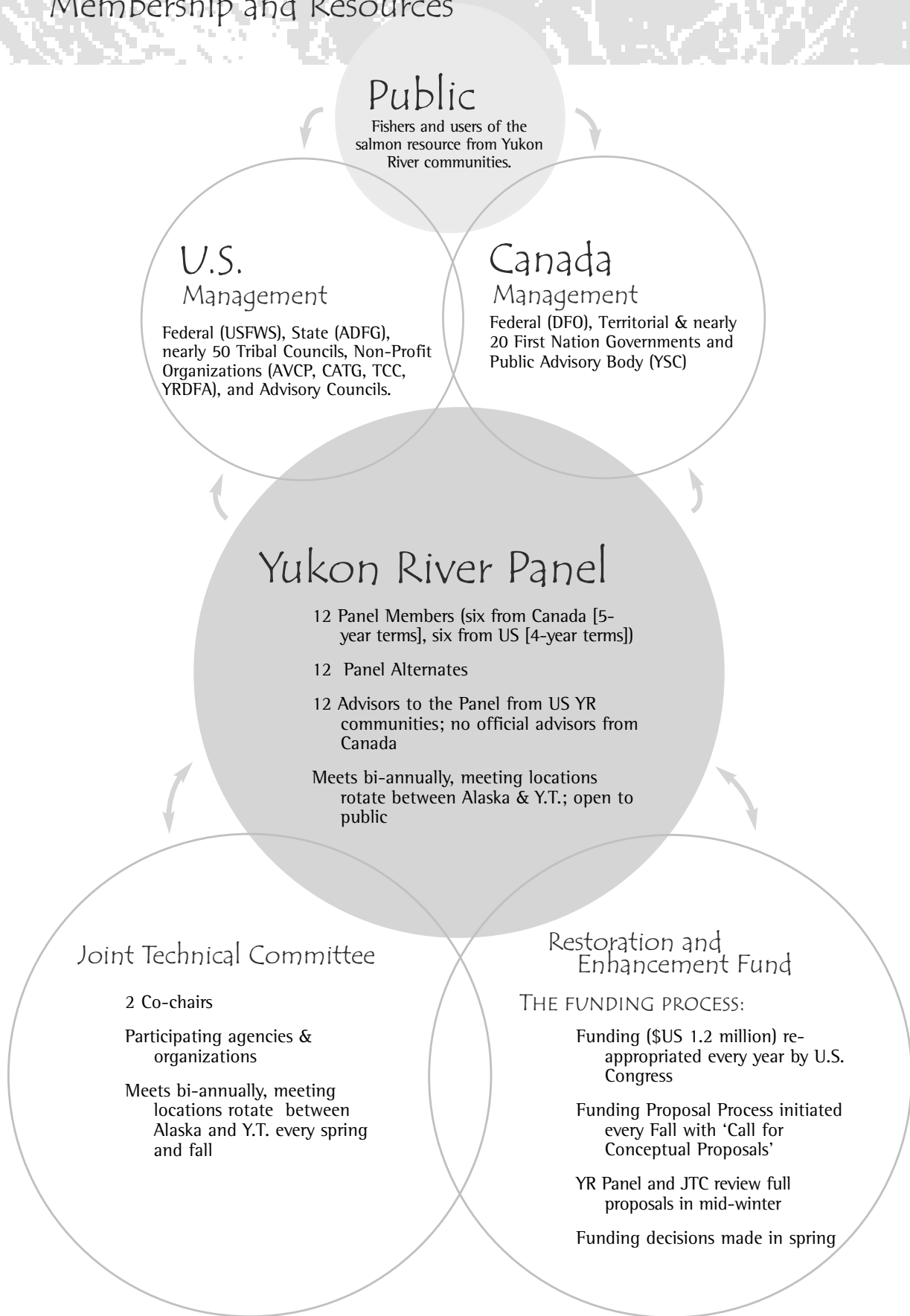
R&E FUNDING PRIORITIES & PROJECT EXAMPLES

CONSERVATION	Stocks	Run Assessment	Rampart-Rapids Fall Chum Catch Per Unit Effort
		Harvest Studies	Juvenile Chinook Out-Migration Timing
		Escapement Studies	Salcha River Chinook & Chum Counting Tower
		Research	<i>Ichthyophonus</i> -Chinook Study
RESTORATION	Habitat	Assessment	Yukon Queen II Investigations
		Research	Groundwater Identification & Investigation - Upper YR
		Implementation	Salmon Restoration -Fox, Laurier & Joe Creeks
		Research	Develop Protocol to Restore Fish Habitat-Placer Mining Streams
ENHANCEMENT	Stocks	Implementation	Mica Creek Salmon Habitat Restoration
		Research	Hess River Spawning Area Assessment
			McIntyre Creek Salmon Incubation Project
			First Fish 2002, Youth Camp
STEWARDSHIP			Commercial Fish Plant Upgrades, Value Added
VIALE FISHERIES			Salmon Rearing Stream Signage
COMMUNICATION			

³Yukon River Panel Restoration and Enhancement Fund Budget Priorities Framework 2003", Blewett Dec. 2003

YUKON RIVER SALMON AGREEMENT,

Membership and Resources



OTHER HIGHLIGHTS OF THE AGREEMENT

SPAWNING ESCAPEMENT OBJECTIVES

A crucial means for managing Yukon River salmon fisheries is establishing and implementing escapement objectives, which form the foundation of salmon management plans. Spawning escapement is the portion of an adult returning salmon run that spawns on spawning grounds by avoiding harvest in any fisheries - including subsistence, First Nation, commercial, personal use, domestic and sport/recreational. An underlying assumption to abundance-based (escapement-based) management is a spawning escapement objective reflects the number of salmon that provides the greatest potential for sustained yield from a salmon stock. A spawning escapement objective is expressed as a range or minimum number, and is the primary management goal for the responsible management agencies. The Agreement specifies spawning escapement objectives (developed by the JTC in the 1980s and early 1990s and based on limited scientific data for that time), for salmon stocks of Canadian-origin once they have been rebuilt, or returned to recent historical numbers. Escapement objectives for salmon that spawn in the mainstem Yukon River in Canada shall be greater than 80,000 chum salmon and 33,000 to 43,000 Chinook salmon. The Escapement objective for chum salmon within the Porcupine River in Canada, shall be between 50,000 and 120,000 chum salmon upstream of the Fishing Branch River weir site.

Spawning escapement objectives are intended to maintain sustained yields of salmon, which in turn would potentially allow sustainable harvests by all fisheries. When used as a management tool, managers must be able to estimate run size, preferably in-season, and have well developed harvest monitoring programs in all fisheries. The effectiveness of management programs is often measured by the ability to meet spawning escapement objectives.

The YR Panel may establish and modify interim spawning escapement objectives for rebuilding programs. These temporary spawning escapement objectives are set annually before the fishing season by the YR Panel during its spring meeting, and are based upon JTC recommendations. In the future, the YR Panel could amend the Agreement and establish new escapement objectives when better scientific data becomes available.

BORDER PASSAGE (BORDER ESCAPEMENT) OBJECTIVES

Under the Agreement, the U.S. will manage its fisheries in an attempt to meet the annually agreed upon spawning escapement objectives for Canadian-origin Chinook and chum salmon, plus attempt to meet the mid-points of the Canadian guideline harvest ranges. Border passage objectives (spawning escapement plus the mid-point of the Canadian harvest range) allow for proportionate sharing of salmon, while accounting for spawning escapement objectives. Canada will manage its fisheries within their guideline harvest ranges (the harvestable portion of salmon allowed to be caught by all Canadian fisheries) and aim to meet the agreed upon spawning escapement objectives, as stated in the Agreement or as directed by the YR Panel. Both countries share the obligation to meet escapement objectives, and if a harvestable surplus of salmon exists, both countries also share the benefits.

HARVEST SHARE

The harvest share arrangement established under the Agreement is important for Alaskan and Yukoner fishers to understand and support because it allows for the proportionate sharing of harvestable salmon between the two countries. Canadian-origin salmon are a shared resource, and fish spawned in Yukon Territory waters are vulnerable to harvest in Alaskan waters. Therefore, in order for the Agreement to be successful and avoid over-harvesting of the stocks, it was necessary to establish each country's share of harvestable salmon. It was also important that the harvestable share be flexible enough to allow for management error and fluctuations in salmon populations. Following the abundance-based (escapement-based) management principle, both countries will decrease their harvest catch (even down to zero if necessary) to protect spawning escapement in years of low runs.



Courtesy of YRDFA

Starting in 2001, both the U.S. and Canada agreed to share the harvest of main stem Yukon River chum and Chinook salmon using the concept of total allowable catch (TAC). TAC is the total run size of each salmon stock minus the agreed spawning escapement objective for that stock. The Agreement specifies two harvest sharing provisions, each based on TAC and historic catches (Table 1): one for harvests that have been taken historically; and the other for harvests that are higher than historic catches, which allow for a greater Canadian share of the TAC. Yukon River salmon stocks that are of Alaskan-origin are not included in the harvest sharing arrangements according to the Agreement.

TABLE 1	TAC LEVEL	ALASKAN FISHERY	CANADIAN FISHERY
CHINOOK SALMON	0-110,000	74-80%	20-26%
	>110,000	$(74-80\% \times 110,000) + [50\% \times (TAC - 110,000)]$	$(20-26\% \times 110,000) + [50\% \times (TAC - 110,000)]$
FALL CHUM SALMON	0-120,000	65-71%	29-35%
	> 120,000	$(65-71\% \times 120,000) + [50\% \times (TAC - 120,000)]$	$(29-35\% \times 120,000) + [50\% \times (TAC - 120,000)]$

The current inability to accurately estimate the total run size of Canadian-origin salmon in-season limits the ability to accurately calculate the TAC in-season. Therefore, the harvest sharing arrangement is used in-season only to estimate appropriate levels of harvest. Total run size, each country's share of the TAC and actual harvest shares are determined post-season. Comparison between each country's share of the TAC (as specified in the Agreement) and the actual harvest taken during the season aids managers, and the YR Panel, in determining if each country fulfilled their obligation to meet escapement objectives and receive their share of the harvest benefits. If management tools used to estimate in-season abundance and TAC levels were refined, managers could more easily determine TAC levels in-season rather than after the fishing season. If calculated in-season, harvest shares could be more precisely achieved for both countries⁴.

REBUILDING STOCKS

With populations of Yukon River drainage salmon at distressing lows, negotiations for the Agreement addressed the need to rebuild wild Canadian-origin salmon stocks, particularly main stem chum and Chinook salmon back, to historical levels. When actual escapements fall below spawning escapement objectives set in the Agreement, the YR Panel can recommend a rebuilding program to be implemented by both countries. A rebuilding program takes advantage of the YR Panel's ability to set interim spawning escapement objectives, based on recommendations from the JTC, in hopes of returning escapement levels to those specified in the Agreement. As outlined in the Agreement, artificial propagation shall not be used as a substitute for effective fishery regulation, stock and habitat management or protection. Therefore, no hatchery programs, for restoration or enhancement purposes, have been implemented within the Yukon River drainage to supplement catches or rebuilding programs⁴.

The rebuilding programs are to take into account the relative health of the brood years, also called parent year spawning escapements, in order to rebuild stronger brood years in one cycle and weaker brood years in no more than three cycles. One cycle for Chinook salmon is typically considered to be six years, whereas one chum salmon cycle is four years. Therefore, through management actions, more adult offspring (from a parent year that had a low number of spawners) would be allowed to spawn in subsequent years. If a parent year escapement was very low it may take up to three cycles to rebuild stocks. However, a parent year escapement slightly below the escapement objective could potentially be rebuilt in a one cycle.

When deciding which rebuilding scenario to recommend, the YR Panel must consider various factors, such as the severity of the conservation concern, the overall status of spawning escapements in recent years and socioeconomic consequences. Salmon rebuilding programs can allow for subsistence and First Nation fishing opportunities in years of relatively low runs. The intent of such rebuilding programs is to rebuild salmon stocks without causing undue hardship to the people who depend upon the salmon resource, without depleting the resource itself.

⁴It should be noted that the Whitehorse Rapids Fish Hatchery, in Whitehorse, was built in 1984 to mitigate against spawning and rearing habitat lost to the building of the dam, and not for enhancement purposes.

Table 1. U.S. and Canada harvest shares as a percentage of TAC levels. (see example on page 27)

Figures 2 and 3. Visually illustrate Table 1 describing the agreed upon harvest share levels as a percentage of the annual TAC.

FIGURE 2:
YUKON RIVER FALL CHUM SALMON
HARVEST SHARES

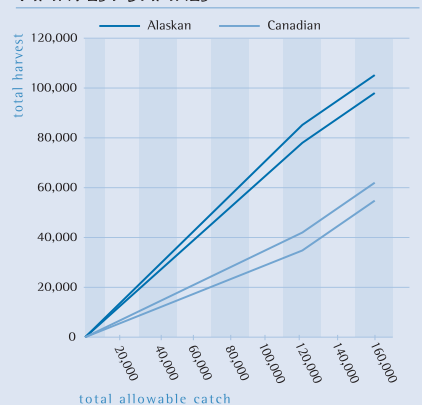
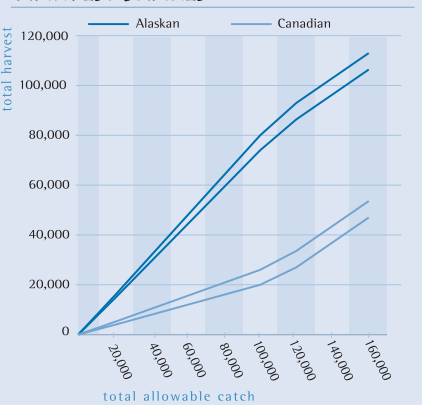


FIGURE 3:
YUKON RIVER CHINOOK SALMON
HARVEST SHARES



DESCRIPTION OF YUKON RIVER DRAINAGE

The Yukon River, the largest river in Alaska and one of the longest in Canada, has nine major rivers and many tributaries (Figure 4). It flows in a northwesterly direction through the Yukon Territory and southwesterly through central Alaska for over 2,300 miles (3700 km) before reaching the Bering Sea. The Yukon River empties the 5th largest drainage in North America – an area more than 330,000 square miles (855,000 square kilometers). This total area is more than 25% larger than Texas or Alberta. The river is believed to originate from the Llewellyn Glacier, near Atlin Lake, in northwestern British Columbia, within 30 miles (48 km) of the Gulf of Alaska.

THE WATER

To characterize such a large area as the Yukon River drainage, boundaries for physiographic regions can be drawn. Physiographic regions are defined as smaller distinct zones, or sub-provinces, where the topography changes. The Yukon River drainage has four distinct physiographic regions. From the headwaters to the Bering Sea, these regions are known as: the Upper Yukon, Yukon Flats, Rampart Region and Lower Yukon.

Upper Yukon Region

From its starting point, the Yukon River flows first through the Upper Yukon region, a distance of approximately 850 miles (1368km) long. This area extends from the mountainous, headwater lakes in the Yukon Territory and northern British Columbia to the community of Circle, Alaska and has two distinct sub-regions. The river first flows through terrain once covered by continental glaciers. Here, the river valley tends to be wide and the waters are clear. In this region the Yukon River is divided into four major sub-basins, which are the:

Upper Lakes/Yukon River south mainstem, flowing from the southwest;

Teslin River, with the main tributary being the Teslin River entering from the southeast;

Pelly River Yukon River mid-mainstem, with the main tributary being the Pelly River entering from the east; and the Yukon River mid-mainstem.

Downstream of the Pelly River, the Yukon River enters unglaciated terrain. The valley becomes narrower, with rock walls on one or both sides of the river. Tributary valleys in this area are “v” shaped. The Yukon River becomes more turbid and silty, particularly downstream from the glacier fed White River. In this sub-region the Yukon River is divided into three major sub-basins, which are the:

Yukon River north mainstem,

White River, with the main tributary being the White River, entering from the west, which is about 90 miles (145 km) upstream from Dawson City; and the

Stewart River, with the main tributary being the Stewart River, one of the largest tributaries of the Yukon River, entering from the east about 72 miles (116 km) upstream from Dawson City.

Yukon Flats Region

After passing through the Upper Yukon Valley, the Yukon River spreads out through the Yukon Flats for about 200 miles (322 km) and makes its great bend to the southwest. The river is at its widest in this area, spanning anywhere from 10 to nearly 20 miles (16-32 km), and involves a complex network of constantly changing channels. The Yukon Flats is seemingly an area of continuous sand bars and islands. Within the Yukon Territory this region is known as the:

Porcupine River Sub-Basin, with the main tributary being the Porcupine River whose headwaters, which include the Fishing Branch River, originate in northern Yukon Territory, flows past the community of Old Crow to the Alaska-Yukon border.

The Porcupine River continues flowing past the Alaska-Yukon border and is joined by the:



Courtesy of Bill Filiris

“PROTECTING THE SPAWNING GROUNDS IS GOOD FOR THE FISH AND FOR ENSURING THE LONG-TERM SUSTAINABILITY OF THE RESOURCE.”

—ANDY BASSICH
SPEAKING OF THE
YUKON RIVER SALMON
AGREEMENT

Sheenjek River, from the north.

The Porcupine River enters the mainstem at the great bend just north of the Arctic Circle near the community of Fort Yukon. In this region the Yukon River is joined by the:

Chandalar River, entering the Yukon River from the north.

Rampart Region

The Rampart Region begins where the Yukon Flats area abruptly ends, near Stevens Village, Alaska. At this point the River is only 0.4 miles (0.64 km) wide and is the location where the Trans-Alaska oil pipeline crosses the Yukon River. For nearly 110 miles (177 km) the main stem of the Yukon River flows without draining any major tributaries.

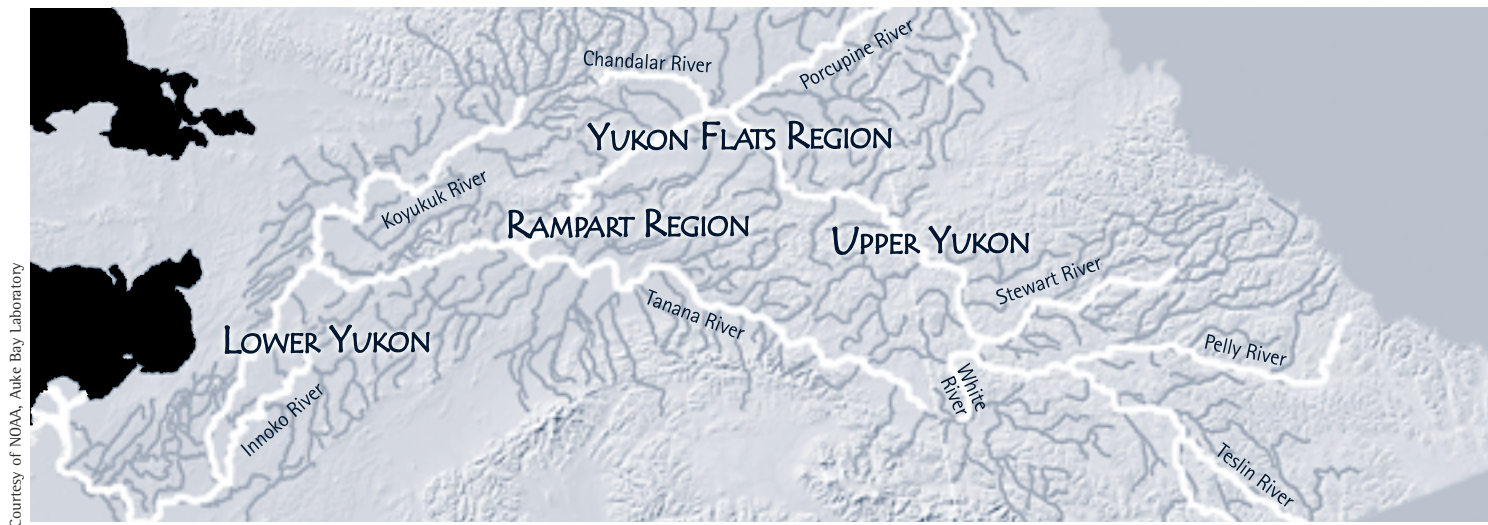


Figure 4. The Yukon River with its nine major tributaries and four physiographic regions.

Lower Yukon Region

The Lower Yukon includes the area between the Rampart Region and the oceanic coast, and is the second longest region covering nearly 800 miles (1287 km). Marking the beginning of the Lower Yukon, the main stem of the Yukon River is joined by the:

Tanana River, from the south.

At this point, the gorge opens into lowlands. Before reaching the Nulato Hills, the Yukon River is joined by the:

Koyukuk River, from the north, at which point the main stem changes direction and heads south.

Along the northwest boundary of the Lower Yukon region the Yukon River flows through low mountains (Nulato Hills) until the delta is reached. This valley is normally 2 or 3 miles (3.2-4.8 km) wide and has many channels and numerous islands. Before the main stem turns direction and flows to the west, near the community of Holy Cross, the Yukon River is joined by the:

Nulato River, from the west;

Anvik River, from the west; and the

Innoko River from the east.

The Yukon River once again shifts direction and heads northward as it reaches the delta, at which point the main stem of the river widens to 0.6 miles (1 km) and is joined by the:

Andreafski River, from the north.

The river flows through many channels within this large wetland area until finally emptying into the Bering Sea through three major mouths – the North, Middle and South Mouths.

While numerous tributaries drain into the Yukon River, there are too many to document here. However, many of these smaller streams and rivers are important spawning and/or rearing grounds for salmon, and should be protected from land-use impacts associated with human activities.



Courtesy of YRDFA

THE PEOPLE

Approximately 138,000 people live in the Yukon River drainage. Excluding the largest city, Fairbanks (approximately 86,000 residents), within the Alaskan portion of the drainage, the majority of the remaining 21,000 Alaska residents live in 43 communities scattered along the river system from the Canadian border to the coast along the Bering Sea. These communities range in population from 30 to 800 residents with an average of less than 300 residents. Within the Canadian portion of the drainage, Whitehorse (the largest city with a population of 23,000) and Dawson City (with a population of 1,800) comprise nearly 80% of the Yukon Territory population. Nearly 4,000 people reside outside of these larger towns along the Yukon River and its tributaries. These rural communities range in size from 50 to 450 residents.

The people of the Yukon River drainage have utilized salmon since inhabiting the area. In Native societies, fishing means more than just food as it is part of a traditional, cultural, and economic system. Three major ethnic groups have historically occupied the Yukon River drainage: Yup'ik Eskimo, who live along the Bering Sea coast and inland approximately 250 miles (402 km); Athabaskan Indians, who occupy the remainder of the Yukon River valley; and Tlingit Indians, distantly related to the Athabaskan family, live along the southeast Alaskan coast and inland into parts of Yukon Territory and British Columbia, Canada. Outside of the larger cities, nearly all the people who reside in the Yukon River drainage are dependent, to varying degrees, on fish and wildlife resources for their livelihood.

Subsistence fishing activities occur throughout the Yukon River drainage by approximately 12,000 people, both native and non-native, in Alaska. Nearly 4,000 First Nation peoples in the Yukon Territory participate in their First Nation fisheries, which occurs during the summer and fall seasons. Subsistence and First Nation fishing activities are a cooperative undertaking with extended family groups of commonly two or more households working together to harvest, cut, preserve, and store the precious resource.

THE SALMON

The three primary salmon species of concern addressed under the Agreement are Canadian-origin Chinook (*Oncorhynchus tshawytscha*, commonly referred to as 'king' salmon), chum (*O. keta*, commonly referred to as 'dog' salmon), and coho (*O. kisutch*, commonly referred to as 'silver' salmon). Two other species of Pacific salmon are also found within the Alaskan portion of the Yukon River drainage, including sockeye salmon (*O. nerka*, commonly referred to as 'reds') and pink salmon (*O. gorbuscha*, commonly referred to as 'humpies').

All species of Pacific salmon are anadromous as they spawn in freshwater and spend at least a part of their lives in the ocean. To spawn, each female salmon uses her tail to create a depression in the gravel, with a dominant male salmon beside her. The female salmon releases her eggs in this depression or nest, which is commonly referred to as a redd. As the female releases her eggs, the

	CHINOOK SALMON	CHUM SALMON
# OF EGGS LAID PER SALMON	3,000 to 14,000	4,000
SIZE	16lbs and up (7kg and up) females smaller than males	4-18lbs (2-8kg) females smaller than males
REDDS LOCATION	6" to 4' deep, flowing water	Upwelling, spring areas
FRESHWATER RESIDENCE	3 months to 2 years	None
FRESHWATER FOOD	Plankton and insects	Small insects
OCEAN FOOD	Herring, pilchard, sandlance squid & crustaceans	Zooplankton, crustaceans pteropods, small fish
TIME SPENT AT SEA	1 to 5 years	3 to 5 years

FIGURE 5: SALMON MIGRATION MONTHS

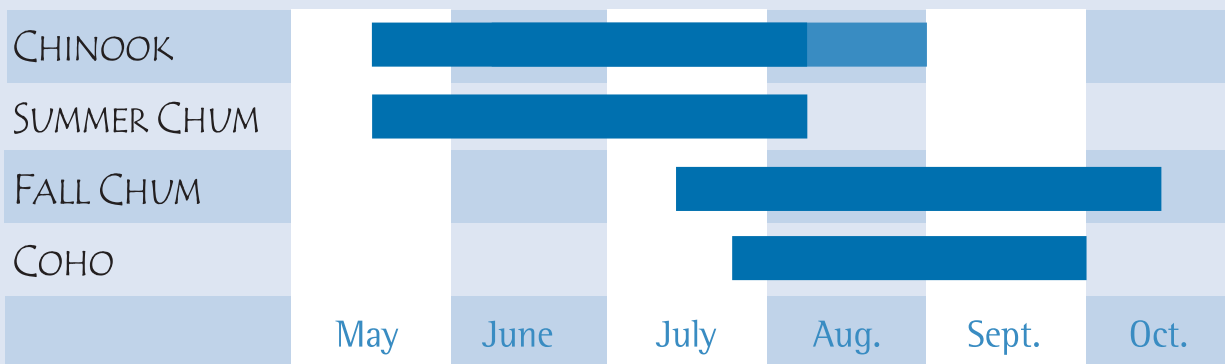


Figure 5. The months adult salmon can be found migrating through the Yukon River drainage.

dominant male salmon simultaneously releases a cloud of milt, or sperm, to fertilize the eggs. Subordinate males may join the spawning pair at this time and also attempt to fertilize the eggs with their milt. The fertilized eggs develop during the winter, and hatch in late winter or early spring, depending on the time of spawning and water temperature.

Salmon hatch as alevins, with an attached yolk sac for food, and live in the gravel for several weeks until they gradually absorb all the food in the yolk sac. They emerge from the gravel as fry. Some species of salmon fry remain in the freshwater system for longer periods than others, and some do not have a prolonged freshwater residence at all. Most Yukon River drainage Chinook salmon spend one to two years rearing in fresh water before their out-migration to the ocean. On the other hand, emergent Yukon River chum fry migrate immediately to the mouth of the river spending little time in the freshwater system. Young salmon migrating to the sea are called smolt. As the process of smoltification occurs (during a limited time span), coordinated morphological, physiological and behavioral changes occur in preparation for the salmon's transition from fresh water to salt water.

Time spent at sea varies between Pacific salmon species from 18 months to 6 years. Chinook salmon from the Yukon River spend, on average, four years at sea (ranging between 1 to 6 years). Chum salmon spend an average of three years at sea (ranging between 2 to 5 years). No matter how long the duration, all time at sea is spent growing. Sub-adult salmon grow rapidly in the ocean and often double their weight during a single season. Small, sexually-mature adult salmon that return to spawning grounds after spending only a few months to one winter in the ocean are commonly referred to as jacks, and are usually males. Within the Yukon River drainage, jacks are most noticeable in the Chinook salmon populations, although they do occur in coho and sockeye salmon populations as well.

As sexually-mature adults, salmon travel hundreds, even thousands, of miles/kilometers from ocean feeding areas to spawn in the same freshwater system in which they hatched (Figure 5). Some headwater salmon stocks migrate over 1,840-miles (2960 km) to reach their spawning grounds in the Yukon Territory and northern British Columbia, thereby making some of the longest salmon migrations in the world. Little is known about the navigation mechanisms salmon use when at sea, although some evidence suggests they may be able to use the Earth's magnetic field as an indicator. Once near their natal streams, river or lakes, adult salmon use olfactory cues, or smell, to return to the spawning grounds where they originated.

Adult salmon going the furthest to spawn tend to possess the highest oil content of any salmon when they begin their upstream journey. Salmon do not feed during their spawning migration, so their condition deteriorates gradually during their migration as they use stored body reserves for energy. As female salmon travel to spawning grounds their eggs gradually mature, becoming larger in preparation for delivery or spawning. Therefore, it is local belief that smaller eggs and smaller bunches of eggs in female salmon are an indication the salmon has a longer way to travel before spawning.



Courtesy of YRDFA

FISHERY TYPES

There are eight uniquely different fisheries along the Yukon River, two of which are identified in the Agreement as having priority over all other fisheries: subsistence fisheries in Alaska and First Nation fisheries in the Yukon Territory. Other consumptive uses of the resource, commercial, personal use and sport fisheries in Alaska and domestic, sport/recreational and commercial fisheries in the Yukon Territory, have no hierarchy and are managed according to conservation needs and respective national priorities for subsistence and Yukon First Nation fisheries.

ALASKA: SUBSISTENCE SALMON FISHERY

All Alaskan residents can qualify to engage in subsistence salmon fishing activities unless the resource is limited. According to Alaska laws and regulations (Tier II) during times of resource shortage, residents most dependent on and with the least alternative resources to salmon are provided first access to the resource. However, under federal law and regulations only qualified rural residents are awarded a preference for the subsistence priority on applicable waters at all times.

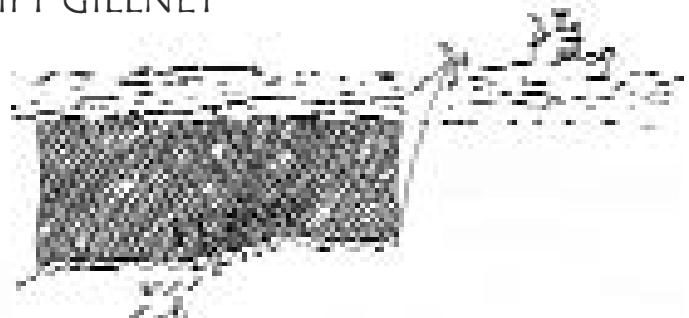
Alaskan Yukon River residents carry out subsistence fishing activities based either from a fish camp or home village. To harvest salmon drift gillnets, set gillnets, fish wheels and rod and reel are used. Gillnets are the primary gear type utilized throughout the drainage, however, fish wheels are typically found in the Yukon Flats and Rampart Region within the Alaskan portion of the drainage.

A significant portion of the salmon harvested are frozen, dried, or smoked for later human consumption. Extended family groups (often three generations) commonly work together to harvest, cut and preserve salmon for subsistence use. To preserve salmon, fishers normally split or hang fish whole to dry. The number of dogs within a household is considered a major factor affecting the amount of subsistence chum salmon a household needs, as feeding dogs for transportation is an



FISH WHEEL

DRIFT GILLNET



Courtesy of ANROE



SET GILLNET

identified use under subsistence law. In addition, salmon harvested within applicable federal public lands can be sold under federal customary trade rules, but can not be sold to commercial fisheries businesses.

ALASKA: COMMERCIAL SALMON FISHERY

The first recorded exported commercial salmon harvest in the Alaskan portion of the Yukon River drainage occurred in 1918. However, before this time, commercial sale of salmon for feeding dog teams

and draft animals existed, but was poorly documented. Between 1925 and 1931 the Chinook salmon export commercial fishery was closed due to concerns for the subsistence fishery, but resumed at a reduced level in 1932. Commercial fisheries for Chinook salmon continued to occur annually with a commercial fishery for chum salmon occurring sporadically until 1961, when it too continued to occur annually. Yukon River commercial fisheries continued to grow until participation levels were stabilized by implementation of limited entry in 1976. In 2003, a total of 932 (703 lower river and 229 upper river) commercial permits were active for all salmon fisheries within the Alaskan portion of the Yukon River.

Most commercial fishers are residents of the Yukon River drainage and many subsistence fishers also participate in the commercial fishery. The cash income derived from the commercial fishery assists many area-residents in their subsistence lifestyle. Income earned from commercial fishing is often used to obtain hunting and fishing gear, such as nets, boats, and outboard motors utilized in subsistence activities.

Most commercial fishers operate outboard powered skiffs of 18 to 24 feet (5.5-7.0m) in length. Very few skiffs have gillnet rollers or power reels of any type. The use of larger outboard motors (greater than 100 horsepower), fish finders, and better means for communication (such as VHF radios) has increased fleet efficiency.

Most of the harvest is now processed as a fresh or frozen product, which is in direct contrast to earlier years when canning and salting were the primary preservation methods. To be processed in this 'modern' fashion, shore-based or floating operations exist, as well as processing facilities capable of quickly transporting harvested salmon by aircraft. Although most commercial harvests are processed outside the drainage, limited "value added" products are now produced locally. Small quantities of Chinook, fall chum, and coho salmon are smoke-cured and sold as 'strips', and a few salmon are sold whole to local markets.

ALASKA: PERSONAL USE SALMON FISHERY

Alaska state law defines personal use fishing as "the taking, fishing for, or possession of finfish, shellfish, or other fishery resources, by Alaska residents for personal use and not for sale or barter, with gill or dip net, seine, fish wheel, long line, or other means defined by the Board of Fisheries." In 1986, the Alaska Board of Fisheries (BOF) created personal use salmon fisheries in the Alaskan portion of the drainage when subsistence fishing and hunting was limited to rural Alaska residents. While personal use fishing opportunities were open to all Alaskans, they were provided primarily for residents whose subsistence uses were no longer allowed because an area was deemed as urban under state law by change in the population, economy, and character of the area's dependence on uses of fish and game. Conversely, rural subsistence fishers were provided subsistence fishing opportunity only in rural areas on stocks with customary and traditional uses as determined by the BOF. Even though more efficient gear than that allowed for sport fishing was permitted in personal use fisheries, this use has never had a priority over subsistence uses; it is equal to other non-subsistence uses in the allocation system.

Between 1988 and 2003, regulations regarding personal use fisheries changed numerous times. However, a constant provision has been that personal use fishing can occur anywhere in the state and participation is open to all Alaska residents.

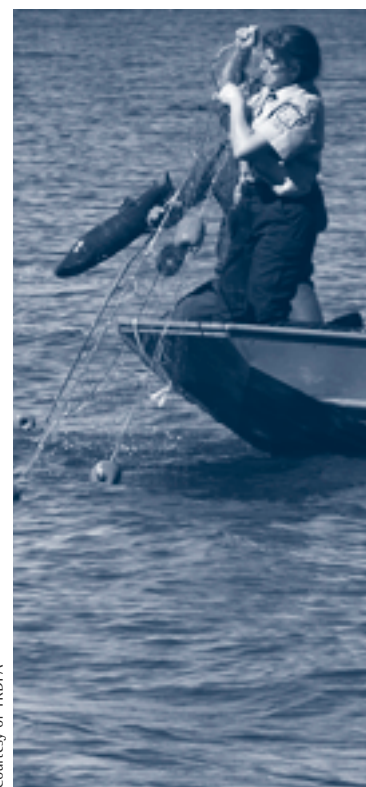
ALASKA: SPORT SALMON FISHERY

Sport fishing for salmon in the Alaskan portion of the Yukon drainage is quite low and most annual sport harvests of salmon come primarily from the Tanana River drainage. Most clear water tributary streams, in the Alaskan portion of the Yukon River drainage, are remote and inaccessible, thereby severely limiting sport fishing opportunity. Therefore, sport harvests are typically small in relation to total catch. During the last 10 years, annual harvest of Chinook salmon from the entire Alaskan portion of the Yukon River drainage has averaged about 1,500 fish; approximately 1,400 of these came from the Tanana portion of the drainage. Sport harvests of coho salmon and chum salmon have averaged less than a thousand fish per year with most coming from the Tanana River drainage.

In the Tanana drainage, locally popular sport fisheries for Chinook salmon occur in the lower Chena and Salcha Rivers - downstream from the spawning areas. In the remainder of the Alaskan portion of the Yukon River drainage, small sport harvests of Chinook, chum and coho salmon are reported from the Andreafsky, Anvik, Porcupine and Koyukuk Rivers. Rod and reel fishing for salmon is practiced by some rural residents and by non-local anglers who visit for the purpose of sport fishing.

A BINDING
AGREEMENT PUTS
MORE PRESSURE ON
BOTH SIDES [US AND
CANADA] TO DO
WHAT'S RIGHT FOR
THE SALMON.

– STAN ZURAY, TANANA,
AK RESIDENT



Courtesy of YRDLFA

CHINOOK GENERAL DESCRIPTION:

"Adults are distinguished by the black irregular spotting on the back and dorsal fins and on both lobes of the caudal fin. Chinook salmon also have a black pigment along the gum line which gives them the name "blackmouth" in some areas. In the ocean, the chinook salmon is a robust, deep-bodied fish with a bluish-green coloration on the back which fades to a silvery color on the sides and white on the belly. Colors of spawning chinook salmon in fresh water range from red to copper to almost black, depending on location and degree of maturation. Males are more deeply colored than the females and are distinguished by their "ridgeback" condition and by their hooked nose or upper jaw. Juveniles in fresh water are recognized by well-developed parr marks which are bisected by the lateral line."

Description courtesy of ADFG (<http://www.adfg.state.ak.us/pubs/notebook/fish/chum.php>)

YUKON TERRITORY: FIRST NATION SALMON FISHERY

The longest standing fishery in the Yukon Territory is the First Nation fishery, also referred to as aboriginal fishery, and is only open to designates of Yukon First Nations. Yukon First Nation fishers have traditionally relied on the salmon resources of the Yukon River for their survival. Once spawning escapements are met, priority (in terms of allocation) is given to the First Nation fishery to address food, social and ceremonial needs. First Nation fisheries are widespread throughout the Yukon River drainage in Canada.

Most First Nation fishers have a fish camp, where a family or families will fish together for their food, social, ceremonial needs and also to supplement dog food with chum salmon. Fishing gear primarily consists of set gillnets, fish wheels in larger sites around the Dawson City area, drift gillnets in the Teslin River, and gaffs in the smaller headwater streams. Some salmon are split, hung and smoked at fish camp for later use. Salmon are also frozen or canned and some people find fish heads, eggs, milt (fish sperm) and gut a delicacy.

First Nation fishers usually begin fishing in early to mid-July for Chinook salmon and usually continue until their needs are met. Fishing for chum salmon in the upper Yukon River usually begins in August and is completed by mid-October. However, on the Porcupine River, the fishery often continues to operate through November with netting for chum and coho salmon frequently occurring through the ice.

YUKON TERRITORY: COMMERCIAL SALMON FISHERY

The commercial fishery began in 1898 and the first licenses were issued the following year by the Royal Northwest Mounted Police under authority granted from L.H. Davies, the Minister of the Federal Department of Marine and Fisheries. Up until 1980, the commercial fishery was an open-entry fishery. The commercial fishery currently involves up to 21 licensed fishers. An additional eight licenses, guaranteed to Yukon First Nations under the UFA, have not been activated as of 2004.

When there are no spawning escapement or First Nation fishery concerns, the commercial fishery usually opens in early July for Chinook salmon; peak catches generally do not occur until mid to late July. Opening schedules for the commercial fishery are dependent upon run timing and the strength of the run. The commercial fishery for chum salmon follows the Chinook run, peaking in mid-September and ending in October and follows the same management regime as other fisheries.

Fishing gear for commercial fisheries consists of fish wheels and gillnets. Commercial fisheries may occur in the following areas: in the Yukon River, downstream from Tatchun Creek to Dozen Islands (excluding a closed section around the mouth of the Klondike River); in the Stewart River, downstream from the mouth of the McQuesten River; and in the Pelly River, downstream from the mouth of the MacMillan River.

Since processing facilities are currently limited, salmon caught in the commercial fishery are sold mostly to local markets (fresh, frozen, smoked, dried) or processed into other value-added products. Many commercial fishers rely on a portion of their catch to meet personal needs.

YUKON TERRITORY: DOMESTIC SALMON FISHERY

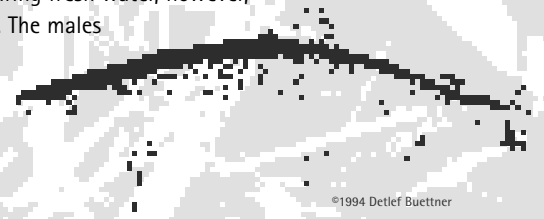
The domestic fishery was first initiated in 1899 to allow British subjects and Yukon Territory residents to fish for personal use with gillnets. This fishery was eliminated in 1961 but then re-instated in 1974. The domestic fishery is currently limited to nine licensed fishers who fish primarily for Chinook salmon.



Courtesy of YRDFPA

CHUM GENERAL DESCRIPTION: "Ocean fresh chum salmon are metallic greenish-blue on the dorsal surface (top) with fine black speckles. They are difficult to distinguish from sockeye and coho salmon without examining their gills or caudal fin scale patterns. Chum have fewer but larger gillrakers than other salmon. After nearing fresh water, however, the chum salmon changes color—particularly noticeable are vertical bars of green and purple. The males develop the typical hooked snout of Pacific salmon and very large teeth which partially account for their other name of dog salmon. The females have a dark horizontal band along the lateral line; their green and purple vertical bars are not so obvious."

Description courtesy of ADFG (<http://www.adfg.state.ak.us/pubs/notebook/fish/chum.php>)



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"THE YUKON IS MUCH MORE THAN AN EXOTIC AND REMOTE SETTING FOR NOVELS AND POETRY. IT IS HOME TO COUNTLESS COMMUNITIES, WHOSE LIVES ARE TIED TO THAT OF THE RIVER ITSELF AND TO ITS RESOURCES."

– PAULA DOBRIANSKY,
UNDER SECRETARY OF
STATE FOR GLOBAL AFFAIRS

Fishing areas have been restricted to the same areas as commercial fishing, and gear is limited to one gillnet of up to 295 feet (90m) in length. When there are no spawning escapement and First Nation fishery concerns, the domestic fishery usually opens in early July for Chinook salmon and generally follows a pre-set number of days per week during the Chinook season. On average, less than 200 Chinook salmon are taken by this fishery. The salmon caught in the domestic fishery are for personal use and can not be sold.

YUKON TERRITORY: SPORT/RECREATIONAL SALMON FISHERY

When sport/recreational fishing first appeared in the Yukon Territory is unknown, but may date back to the 1700s. The first licenses were issued in 1949, after the construction of the Alaska Highway (1942-1947). Approximately 15,500 anglers received angling licenses in 2002, of which 1,049 purchased a Yukon Salmon Conservation Catch Card, which is mandatory for salmon fishers. Approximately 74% of the cards were issued to Yukon Territory residents, 13% to other Canadian residents and 12% to non-Canadian residents. To date, fewer than 1,000 Chinook salmon are harvested annually by this fishery, which are cooked, smoked or canned for personal use. Presently, the sport/recreational fishery is the only fishery open to all residents and non-residents of the Yukon Territory.

The areas of most intense sport/recreational salmon fishing activity are the Yukon River near Tatchun Creek, Big Salmon River, Teslin River, and Pelly River near the mouths of major spawning tributaries and other major tributaries. Fishing gear is restricted to tackle with single barbless hooks, with or without bait (artificial/roe), and fly-fishing gear. In normal years, sport/recreational fishing targets Chinook salmon from mid- to late-July through August. Chum salmon have not yet been targeted in this fishery.

OVERVIEW OF FISHERIES MANAGEMENT IN ALASKA AND YUKON TERRITORY



Courtesy of YRDFA



Courtesy of YRDFA



Courtesy of Graham VanTithem

Meeting escapement goals and conservation needs are the first priorities for both countries. However, both countries have different management approaches to address conservation and allocation priorities. It is policy within Alaska to manage the salmon runs for maximum sustained yield, while the Yukon Territory salmon runs are managed to conserve and protect the salmon resource as mandated under the UFA pertaining to the Yukon First Nation Land Claims. To better protect the salmon resource, funding to management agencies, in both Alaska and the Yukon Territory, is allocated for a number of programs including fisheries and habitat management, stock and habitat assessment, research, enforcement and education.

ALASKAN FISHERIES MANAGEMENT

Pursuant to the *Yukon River Salmon Act of 2000 (U.S.)*, “The state of Alaska Department of Fish and Game shall be the responsible management entity for the United States for the purposes of any agreement with Canada regarding management of salmon stocks originating from the Yukon River in Canada.” The State of Alaska Board of Fisheries (BOF) sets policy and direction for management of the state’s fishery resources. The policy of the ADFG is to manage the salmon runs to the extent possible for maximum sustained yield, unless otherwise directed by regulation and to allow for spawning escapement and Canadian harvest shares as written into the language of the Agreement. Management of the Yukon River salmon fishery is complex because of the current inability to determine stock specific abundance and run timing, overlapping multi-species runs, the increasing efficiency of fishing gear, allocation issues, and the immense size of the Yukon River drainage. Albeit, state and federal agencies, native organizations, and fisher groups operate various projects, such as aerial and ground surveys, test fisheries, tributary and mainstem sonar, tagging, tower and weir projects and harvest survey programs to obtain information necessary to assess salmon runs.

Beginning in 1999, a lack of consistency between state and federal laws resulted in dual management of subsistence fisheries within the Alaskan portion of the Yukon River drainage based on distinctions between state and federal lands. The State of Alaska statutes provide a subsistence priority for all Alaskan residents outside of established non-subsistence use areas within Alaska. However, federal law under the Alaska National Interest Lands Conservation Act (ANILCA) requires, on federal lands, only rural residents are privileged by the subsistence priority when there are not enough fish for other uses. Due to this divergence, federal jurisdiction now applies to applicable waters (i.e. waters flowing through and/or occurring on federal lands) to ensure the subsistence priority for federally-qualified rural residents. As part of a dual management system, state (Alaska Department of Fish and Game, ADFG) and federal (U.S. Fish and Wildlife Service, USFWS) authorities work together to share and collect assessment information and issue joint news releases to inform the public of subsistence management actions. The USFWS strives to ensure all federally-qualified users of the salmon resource have priority on federal lands, while ADFG strives to provide for all subsistence users within subsistence-use areas of the Alaskan portion of the drainage. Tribal councils and non-profit organizations, such as YRDFA, the Association of Village Council Presidents (AVCP) and Tanana Chiefs Conference (TCC), further serve to represent tribal interests, as well as fishers and local community users in Alaska.

In-season evaluations of salmon runs (such as evaluating abundance indices from test fisheries, passage estimates from sonar and mark-recapture projects, and listening to Yukon River fishers via YRDFA’s weekly in-season teleconferences) allow managers to adjust pre-season management plans, if needed, based on run timing and/or abundance. In a strong run year, managers provide commercial harvest opportunities and may consider increasing border passage to a greater level to allow a higher spawning escapement for that year. If in-season assessment indicates abundance to be insufficient to meet escapement objectives, management entities may consider taking further conservation measures during the fishing season, such as restricting subsistence harvests. These management actions ensure adequate numbers of fish reach spawning grounds and the agreed upon harvest shares are met (harvest shares can fall to zero for both Alaskans and Yukoners if spawning escapement objectives appear to be unachievable).

To ensure the general public is provided an opportunity to participate in the state's regulatory process, local Fish and Game Advisory Committees were established. These committees meet in a public forum to discuss fish and wildlife issues in order to make recommendations to the Boards of Fisheries and Game. The BOF takes into account these recommendations, and all public comments, when considering proposals to change fisheries regulations. The Federal Subsistence Board was also created to ensure priority is given to rural residents on federal lands for subsistence uses of fish and wildlife. Ten Regional Advisory Councils were created under the Federal Subsistence Board with community and regional leaders as members. The role of reviewing, evaluating and making recommendations concerning regulations, policies and allocation plans, gives a chance for those directly affected by federal jurisdiction, namely Alaskans relying on resources on federal lands, to be included in the decision-making process.

YUKON TERRITORY FISHERIES MANAGEMENT

Pursuant to the UFA, the main instrument for salmon management in the Yukon Territory is the Salmon Sub-Committee, now known as the Yukon Salmon Committee (YSC). The YSC is a public advisory body that makes recommendations to federal, territorial and Yukon First Nation governments on all matters relating to Yukon salmon. These recommendations may be in relation to legislation, research, policies, programs or management plans. The UFA further specifies that the YSC may seek public input on salmon management plans and consult with First Nations on allocations. These consultations occur frequently and working groups have been established to assist in the development of the annual Integrated Fisheries Management Plan (IFMP) for the Yukon Chinook and chum salmon, including Porcupine River stocks. This comprehensive plan includes objectives, decision guidelines and specific management measures, run outlooks, fisheries-specific plans, and current management issues and expected outcomes. Public advisory bodies, such as the YSC, further serve to protect salmon stocks to maintain an essential part of the Yukon ecosystem, economy and lifestyle.

Members of the YSC come from all parts of the Yukon Territory and represent territory-wide interests. The composition of the ten-member committee is laid out in the UFA and is carefully structured to ensure diversity and balance. Nominations for YSC members are put forward through the Yukon Fish and Wildlife Management Board, the First Nations of the Alsek, Porcupine and Yukon River basins and DFO. The Minister of DFO makes the final approval on all appointments to the YSC.

Responsibility for implementing management plans rest with the Yukon/Transboundary Area of DFO. Using mark-recapture programs, weirs, aerial surveys and test fisheries, DFO evaluates salmon runs during the fishing season to enumerate and assess escapements and to determine appropriate harvest levels. DFO is committed to achieving long-term goals for salmon conservation, sustainable use of the resource through application of precautionary principles and improved decision-making processes through consultation with those who have an interest in the fisheries resource.



Courtesy of YRDFA



Courtesy of Bill Flin

FREQUENTLY ASKED QUESTIONS

1) WHEN WAS THE YUKON RIVER SALMON AGREEMENT SIGNED AND WHO SIGNED IT?

On March 29, 2001 in Whitehorse, Yukon Territory, Canada, 56 delegates from the United States and Canada signed the Yukon River Salmon Agreement. Although signed by delegations from both countries, and implemented by management agencies at that time, the Agreement received official recognition by both governments, as an executive order, on December 4, 2002 in Washington, D.C. The Agreement now forms Chapter 8 of the Pacific Salmon Treaty (PST).

Mr. Amos Donohue, from the Canadian Department of Justice, led the Canadian delegation, and Mr. Stetson Tinkham, from the United States Department of State, led the U.S. delegation. Members from the YR Panel, JTC and advisors signed the Agreement into affect. Those members represented various groups along the Yukon River, including Yukon First Nations, Alaska Natives, fishers from aboriginal, subsistence, commercial, personal use, domestic and recreational fisheries, and state and federal agencies in Alaska and the Yukon Territory.

2) WHICH SPECIES OF SALMON ARE CONSIDERED UNDER THE YUKON RIVER SALMON AGREEMENT?

Although the Yukon River Salmon Agreement applies to all salmon originating in the Yukon River, the focus is on Canadian-origin stocks, which includes Chinook, chum and coho salmon. No differentiation is made between summer or fall chum salmon in the Agreement, but summer chum salmon, genetically distinct from fall chum salmon, spawn primarily in the lower 500 miles (805 km) of the Yukon River drainage and in the Tanana River. Canadian-origin coho are predominantly found in the Porcupine River. The Agreement states that once sufficient information becomes available for Chinook and coho salmon stocks originating in the Porcupine River in Canada, the YR Panel shall develop a conservation and management program for these stocks upon recommendation from the JTC.

3) DO ALL CHINOOK AND CHUM SALMON ON THE YUKON RIVER ORIGINATE IN THE YUKON TERRITORY, CANADA?

Scale pattern analysis and, more recently, genetic stock identification methodology indicate that approximately 50% of the adult Chinook salmon that return to the Yukon River originate in Canada, mostly in the Yukon Territory and some in northern British Columbia, and 50% originate in Alaska. Currently it is assumed that 30% or more of Yukon River fall chum salmon originate in Yukon Territory waters. As stock identification programs develop, more can be learned about the contribution of Canadian-origin fall chum to total run size.

The majority of the first run of salmon migrating up the Yukon River in May is presumed to be Canadian-origin Chinook heading for spawning grounds in the Yukon Territory. Canadian-origin salmon spawn and/or rear throughout all the tributaries and streams in the Yukon Territory. To date, spawning chinook salmon have been documented in over 100 streams, including some streams in northern British Columbia. Some of the notable spawning rivers in Canada include: Big Salmon, Little Salmon, Teslin, Pelly, Stewart and Klondike rivers. However, not all Yukon River stocks of Chinook salmon spawn in Canadian waters. Spawning salmon also return to most every tributary in the Alaskan portion of the drainage - most notably, the Andreafsky, Anvik, Nulato, Koyukuk, Tanana, Chena, Chandalar, and Sheenjek Rivers. Although their distribution is not as extensive or widespread as Chinook salmon, fall chum salmon also return to tributary streams in the Alaskan portion of the drainage, most notably, the Tanana, Koyukuk, Chandalar, and Sheenjek Rivers and in upper Canadian tributaries of the Yukon River - including the Porcupine, Fishing Branch, Kluane, and Teslin rivers, and the mainstem Yukon River itself.

"INSTEAD OF FIGHTING OVER A SHRINKING PIE, WE WILL NOW BE WORKING TOGETHER TO CONSERVE SALMON STOCKS AND ENSURING BENEFITS FOR OUR RESPECTIVE FISHING COMMUNITIES."

- AMOS DONOHUE

Courtesy of YRDLFA

4) HOW ARE SALMON, RETURNING TO SPAWN ON THE YUKON RIVER, COUNTED?

Fishery managers use both in-season and post-season tools to help them assess salmon runs on the Yukon River. In-season run assessment tools include such projects as test fisheries, sonar and mark-recapture programs to assess salmon run strength as they migrate to spawning areas. Gathering in-season information on migratory patterns, distribution and run abundance, to improve management and facilitate conservation efforts, include short-term projects such as the Chinook salmon radio telemetry program. Local observations from fishers during in-season teleconferences, as well as post-season harvest data collected through fishery surveys, harvest calendars, catch cards and fish tickets or catch logs, provide valuable harvest monitoring data. Other assessment programs and projects, such as aerial surveys, counting towers and weirs, conducted both in-season and post-season assess spawning escapement.

Assessing the number of salmon that enter the Yukon River in-season is a difficult and complex task for many reasons. Yukon River salmon runs are composed of many stocks, either of the same species or different species that migrate through an area at the same time. Generally, differentiating between stocks is more problematic in areas located farther away from spawning areas. Managers must sometimes rely on tools and methods that are not always accurate to assist them in determining run strength of one stock, while endeavoring to meet harvest shares and spawning escapement objectives. The Yukon River's sheer size makes any method for counting, whether state-of-the-art or not, difficult to use. However, new tools and techniques, such as radio telemetry, DIDSON sonar and genetic stock identification, continue to improve upon current techniques used for estimating and tracking salmon as they move upriver.

5) WHY, AND HOW, DOES THE YUKON RIVER PANEL ADJUST SPAWNING ESCAPEMENT OBJECTIVES?

Due to poor salmon runs observed on the Yukon River from 1998-2001, the YR Panel implemented rebuilding programs. One of the major concerns was for stocks returning from brood escapement levels (the number of salmon that spawned in the parent years) that may have fallen below target levels for rebuilt stocks. Therefore, the YR Panel established interim and/or revised existing spawning escapement objectives for these stocks, based on recommendations from the JTC. As a guiding feature of the Agreement, interim escapement objectives must be conducive to rebuilding the stock in no more than three cycles. The goal is to gradually rebuild poor salmon stocks in cycles until rebuilt levels agreed upon in the Agreement are reached. Even though three-cycle rebuilding options have been recommended in some recent years by the YR Panel, conservative management has enabled rebuilt target numbers of salmon (as established in the Agreement) to reach spawning grounds in one cycle.

Spawning escapement objectives are usually established through the examination of historical spawning escapements and subsequent adult production. Other factors that may contribute to escapement objectives include recent trends in stock status, the relationship between spawning escapement and juvenile salmon production, an assessment of habitat rearing capacity compared to existing juvenile salmon densities, and inclusion of traditional knowledge regarding the distribution and relative abundance of salmon populations. Not all of this information is available within the Canadian portion of the Yukon River drainage, thus more research needs to be completed in these areas. Spawning escapement objectives are agreed upon annually during the YR Panel's spring meeting, and then recommended to the responsible management entities.

6) HOW IS A REBUILDING CYCLE CALCULATED?

The Agreement specifies that when spawning escapements fall below target levels for rebuilt stocks, upon recommendation from the YR Panel, management entities may implement a brood year rebuilding program for Canadian-origin mainstem salmon stocks. In deciding which rebuilding scenario to recommend, the YR Panel has to consider various factors such as: the severity of the conservation concern; the overall status of spawning escapements in recent years; and socioeconomic consequences. The intent of such rebuilding programs is to rebuild salmon stocks without causing undue hardship to the people who depend upon the salmon resource, without depleting the resource itself.

The following describes an example for how a rebuilding cycle could be calculated. Before proceeding, please note that this is an EXAMPLE and an example only.

If the spawning escapement for upper Canadian-origin mainstem Yukon River fall chum salmon was 50,000 four years ago, the following describes the appropriate spawning escapement objectives for the current year following the 1- to 3-cycle rebuilding options. Remember that the goal is to rebuild the spawning escapement of this particular cycle to a spawning escapement of 80,000 in one to three cycles.



Courtesy of Bill Filits

1. 1-cycle rebuild: under this scenario, the goal would be to immediately rebuild the spawning escapement to 80,000 fish – this then would be the objective for the current year.

2. 2-cycle rebuild: the goal of this scenario would be to rebuild the spawning escapement of this cycle to 80,000 in two equal increments: the first increment in the current year and the second increment in four years time. If the brood year spawning escapement was 50,000, to reach the rebuilding goal of 80,000 will require 30,000 additional fish on the spawning grounds. Since there are two cycle years to accomplish this in, we would require 15,000 more spawners in the current year, and an additional 15,000 four years hence. Therefore, the objective for the current year would be 65,000 fish; the objective would become 80,000 four years later. In this case, the spawning escapement should move from 50,000 to 65,000 then to 80,000 fish; this would cover an eight-year span.

3. 3-cycle rebuild: under this scenario, the goal would be to rebuild the spawning escapement from 50,000 to 80,000 in three equal increments, or 10,000 fish per cycle. The first increment would be set, so the objective for the current year becomes 60,000 fish (50,000+10,000). Four years later, the objective would be 70,000 (60,000+10,000) and in eight years from the current year, the objective would reach 80,000 fish. So, under this scenario it would take 12 years to rebuild the spawning escapement of the cycle from 50,000 to 80,000.

To indicate the effect of the various rebuilding scenarios on harvests, assume the run size expected in the current year is 100,000 fish; in this example, this is the expected production from the spawning escapement of 50,000 fish. The following table summarizes the various scenarios with respect to harvests and escapements:

ALLOWABLE HARVESTS UNDER EACH REBUILDING OPTION (FOR HYPOTHETICAL CURRENT YEAR)							
REBUILD OPTION	EXPECTED RUN SIZE	SPAWNING ESCAP'T	TOTAL ALLOWABLE TARGET	CDN HARVEST SHARE (32%) CATCH	U.S. HARVEST SHARE OF CDN ORIGIN SALMON	ESTIMATED TOTAL U.S. HARVEST ^a	BORDER ESCAP'T OBJECTIVE
1-CYCLE	100,000	80,000	20,000	6,400	13,600	54,400	86,400
2-CYCLE	100,000	65,000	35,000	11,200	23,800	95,200	76,200
3-CYCLE	100,000	60,000	40,000	12,800	27,200	108,800	72,800

^aAssumes that 25% of the U.S. harvest is comprised of Canadian-origin mainstem fall chum salmon.

7) HOW IS A HARVEST SHARE CALCULATED?

The Agreement specifies two harvest sharing arrangements with two scenarios each, which can be found under Restoration and Enhancement: Appendix 1 - *Escapement Objectives for and Harvest Sharing of Canadian-Origin Chum Salmon* and Appendix 2 - *Escapement Objectives for and Harvest Sharing of Canadian-Origin Yukon River Chinook Salmon* of the Agreement. Before proceeding, please note that this is an EXAMPLE and an example only. Total allowable catch (TAC) is not a fixed figure; rather it varies from year to year as managers estimate TAC based upon salmon abundance.

EXAMPLE:

After accounting for escapement objectives, management determines 160,000 Canadian-origin chum salmon were available for harvest, meaning that the TAC level was 160,000. Based on the harvest share arrangement as written in the Agreement, when the TAC is above 120,000 chum salmon, the guideline harvest range for Canada shall be between 29% and 35% of 120,000 (34,800 and 42,000 chum salmon) plus 50% of the portion of the TAC greater than 120,000 chum salmon (Figure 2, pg. 15).

$(29\% \times 120,000) \text{ to } (35\% \times 120,000) + [50\% \times (\text{TAC} - 120,000)] = \text{Canadian catch}$
 $(34,800) \text{ to } (42,000) + [50\% \times (160,000 - 120,000)] = \text{Canadian catch}$
 $(34,800) \text{ to } (42,000) + (50\% \times 40,000) = \text{Canadian catch}$
 $(34,800) \text{ to } (42,000) + 20,000 = \text{Canadian catch}$
 54,800 to 62,000 = Canadian catch

$(65\% \times 120,000) \text{ to } (71\% \times 120,000) + [50\% \times (\text{TAC} - 120,000)] = \text{Alaskan catch}$
 $(78,000) \text{ to } (85,200) + [50\% \times (160,000 - 120,000)] = \text{Alaskan catch}$
 $(78,000) \text{ to } (85,200) + (50\% \times 40,000) = \text{Alaskan catch}$
 $(78,000) \text{ to } (85,200) + 20,000 = \text{Alaskan catch}$
 98,000 to 105,200 = Alaskan catch

Therefore, the amount eligible for harvest in the Yukon Territory would be between 54,800 and 62,000 Canadian-origin chum salmon, and between 98,000 and 105,200 Canadian-origin chum salmon in Alaska (this number does not include U.S.-origin chum salmon). These numbers are then compared post-season to actual numbers of salmon harvested, as reported by fishers, to determine if each country did indeed receive their harvestable share, while at the same time achieving spawning escapement objectives.

It is important to understand why it is necessary to continue to refine management tools, used to estimate TAC levels, so that managers may more easily determine TAC levels in-season, rather than after the fishing season. Done in-season, spawning escapement objectives and harvest sharing arrangements can be more accurately achieved for both countries.

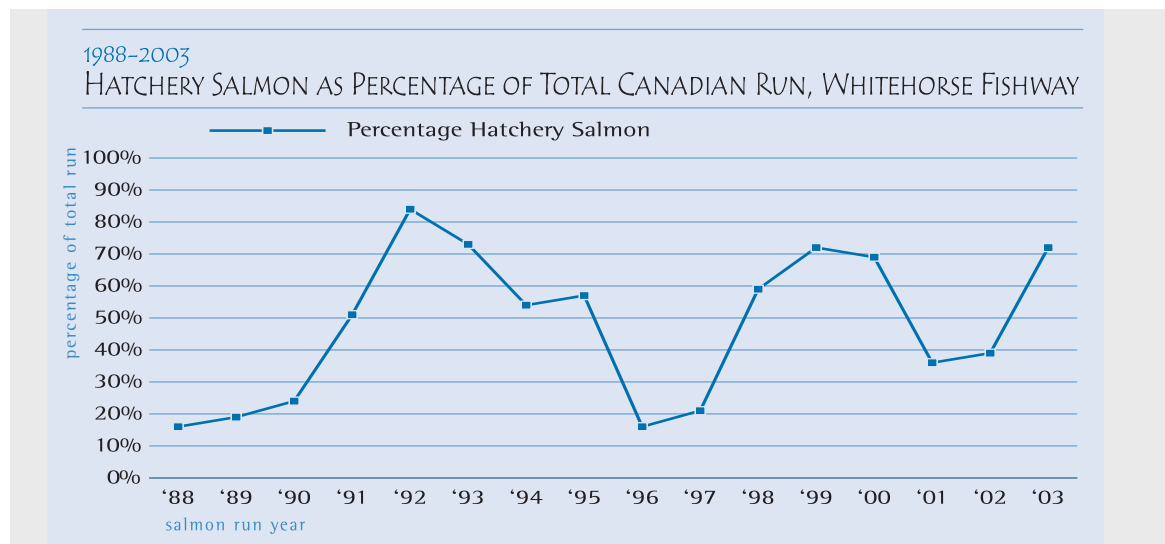
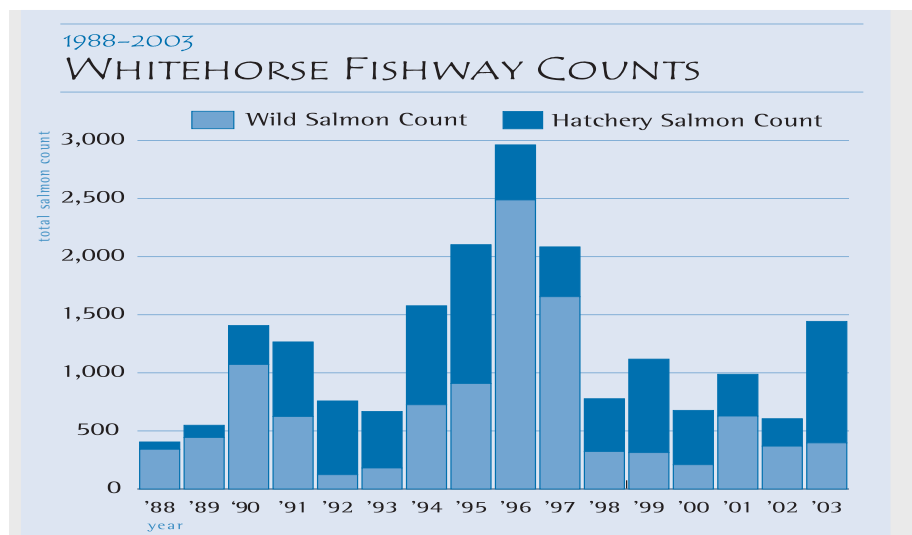
8) WHAT IS THE HATCHERY IN THE YUKON TERRITORY FOR AND HOW MANY FISH DO THEY RELEASE? HOW MANY HATCHERY FISH RETURN ON AN ANNUAL BASIS?

The Whitehorse dam, built in 1958 to provide energy for the development of the Yukon Territory, not only caused an increase in salmon fry mortality as they migrated out, but also cut off access to spawning habitat for adult Chinook salmon returning to several tributaries on the Yukon River - including Michie Creek and the McClintock River. The Whitehorse Rapids Fish Ladder was constructed in 1959 to enable returning salmon to pass the dam and reach important spawning grounds. In 1984, after a new turbine was constructed to double the electrical capacity of the dam, the Whitehorse Rapids Fish Hatchery began operation. This hatchery was created to replace a significant number of out-migrating Chinook fry thought to be killed in the turbines of the Whitehorse Dam. Production levels for the hatchery vary, from 70,000 to 450,000 fry, and are based upon target numbers decided by a committee including members from DFO, the Yukon Territorial Government, Yukon Energy, the Yukon Fish and Game Association and Kwanlin Dun First Nation. Each year the hatchery produces fry that are released into the tributary waters upstream of the dam. Currently about 150,000-200,000 fry are released each spring, following the collection of the brood stock the previous fall. For identification purposes, tiny coded wire tags are injected into the nose cartilage of fry and the adipose fin is removed prior to their release. Upon their out-migration, fry pass through a spillway or the turbines at the dam.

The numbers of salmon returning each year are counted at the Whitehorse Rapids Fishway. The graphs represent the number of Chinook salmon recorded past the Whitehorse Rapids Fishway from 1988 to 2003, including the number and percentage of hatchery salmon.



Courtesy of YRDFA





9) WHAT AFFECTS THE NUMBER OF SALMON RETURNING TO THE YUKON RIVER TO SPAWN AND REAR?

Yukon River salmon returning to spawning grounds in Alaska and the Yukon Territory can be affected by numerous factors, including, but not limited to: parent year escapements (the number of spawners and the composition of the spawning population e.g. sex and age composition); types and intensity of fisheries operating on the high seas and in the Yukon River; water levels; water temperatures (may result in fish becoming stressed and vulnerable to disease); increased rates of infection and prevalence of disease, such as Ichthyophoniasis; and poor marine survival conditions, all of which may result in low runs.

Industries such as placer mining and road construction can also degrade fish spawning and rearing habitat from, for example, increased sediment loads into rivers. Hard-rock mining can result in discharge of heavy metals, which can be toxic to aquatic life. Inadequately treated sewage, particularly from larger communities along the Yukon River, can also have negative effects on water quality, which in turn affects the number of healthy salmon capable of spawning and rearing.

10) HOW ARE CANADA AND THE YUKON TERRITORY PROTECTING SPAWNING AND REARING GROUNDS FOR CHINOOK AND CHUM SALMON?

Spawning grounds in the Yukon Territory are wide spread, with over 100 known spawning streams. According to the *Yukon River Salmon Agreement*, a specific number of Canadian-origin salmon must reach these spawning grounds each year for future generations of salmon to return. In addition, the Agreement enables Yukoners to utilize the Restoration and Enhancement (R&E) Fund for “restoration, stewardship and economically viable fisheries.” Therefore, Yukoners can use the fund to become involved in the restoration and protection of salmon habitat and maintain and start new economic activities to promote the salmon industry in an effort to support viable salmon fisheries. The visibility of an economically viable fishing industry and community involvement works to preserve the salmon resource.

Protection of salmon habitat in Canada is, constitutionally, a federal responsibility under the federal Fisheries Act, while management of lands and waters are a territorial responsibility. The federal and territorial governments work together and in co-operation with First Nation governments to protect salmon habitat. Currently, negative effects of past industrial activities, including mining, utilities, and road construction on/near salmon rearing and spawning habitats are being identified and mitigated.

Under the UFA, the YSC and the Renewable Resources Councils⁶ work together in their roles as public advisory structures to all three orders of government (Federal, Yukon Territory and Yukon First Nations). They act as general watch dogs, checking that industries are managed to higher standards to protect salmon habitat. They also encourage all three orders of government to uphold their natural resource conservation responsibilities. These collaborative working relationships with resource managers and the users of land and water ultimately lead to the protection and conservation of salmon and their habitats.

11) WHO CAN APPLY TO THE R&E FUND?

Programs, projects and associated research and management activities funded by the R&E Fund must be directed towards restoration, conservation and enhancement of Canadian-origin salmon stocks of the Yukon River in Alaska and the Yukon Territory - including the Porcupine River system. Within the Canadian portion of the Yukon River drainage, programs and projects can also be directed at developing stewardship of salmon habitat and resources, and for maintaining viable salmon fisheries.

The application process is open to the public. The principles, guidelines and priorities that guide the use of the R&E Fund, as described earlier (refer to Restoration and Enhancement Fund, page 12), are followed when applying to the R&E Fund. The YR Panel's Executive Secretary can provide more detailed information regarding the annual call for proposals⁷. Assistance is also available to prospective applicants to help with the application process - including the current statement of project priorities by the YR Panel, information gaps, identification of related information available, and application formatting.

⁶Local Renewable Resources Councils are an advisory structure to all three orders of government (Federal, Yukon Territory and Yukon First Nations) on all matters pertaining to the management and allocation of renewable resources.

⁷Visit the Yukon River Panels' website at <www.yukonriverpanel.com> for more information.

“THE YUKON RIVER SALMON TREATY WITH CANADA TOOK MANY YEARS AND A LOT OF HARD WORK TO ACCOMPLISH... WE DID NOT TREAT THE WORK LIGHTLY. NOW WE HAVE A LONG TERM AGREEMENT, WE CAN ALL SHARE IN THE WORK TO PROTECT AND ENJOY THE SALMON RESOURCE.”

—HARRY WILDE, SERVED AS AN ADVISOR TO THE U.S. DELEGATION THROUGHOUT THE NEGOTIATIONS

12) CAN MANAGING FOR CANADIAN-ORIGIN SALMON AFFECT ALASKAN HARVESTS OF STOCKS ORIGINATING IN ALASKA?

Due to the mixed-stock nature of fish moving through the Alaskan portion of the drainage, when management actions are necessary to address *Yukon River Salmon Agreement* obligations for Canadian-origin salmon, reduction in harvests for Alaskan-origin fish occur within Alaska. If one stock is weak when another stock is strong, Alaskan fishers could lose significant harvest opportunities in that year if management cannot provide any further opportunity to target the stronger stock.

Remember, approximately 50% of the Chinook salmon on the Yukon River originate in the Yukon Territory and 50% originate in Alaska. If management actions are not taken by managers in the U.S. when Canadian-origin stocks are weak, the Yukon Territory fisheries could be devastated with no other salmon stocks to depend on. The Alaskan fisheries could also see a significant reduction in harvest in future years due to poor numbers of salmon returning from weak brood/parent years. On the other hand, when Canadian-origin stocks are strong and U.S.-origin stocks are weak, the Canadian-origin stocks may sustain Alaskan fisheries through times of poor returns.

13) WHAT IS THE DIFFERENCE BETWEEN THE SUBSISTENCE FISHERY IN ALASKA AND THE FIRST NATION FISHERY IN THE YUKON TERRITORY?

Although both fisheries are accorded a priority over all other fisheries, distinct differences exist in the nature of the two fisheries. The subsistence fishery in Alaska is a relatively large fishery and, according to the State of Alaska statutes, the subsistence priority is open for all Alaskan residents on all lands outside of the non-subsistence use areas within Alaska, unless restricted to qualified rural residents by federal law in applicable waters. Subsistence uses are defined as "noncommercial, customary and traditional uses of wild, renewable resources...for direct personal or family consumption as food, shelter, clothing, tools, or transportation, for the making and selling of handicraft articles out of non-edible by-products of fish and wildlife resources" taken for subsistence (AS 16.05.940.(32)). Fish caught for subsistence may be used for customary trade, barter and transportation - which include food for sled dogs.

The First Nation fishery is a constitutionally protected fishery in Canada for food, social and ceremonial purposes. In the Yukon Territory, the First Nation fishery involves delegates of Yukon First Nations who may give, trade, barter or sell salmon, but not for commercial purposes, caught in their aboriginal fisheries, amongst members of their respective First Nation, other Yukon First Nations or adjacent First Nations with transboundary agreements.

Historical data from 1990-1999 shows the average subsistence Chinook salmon fishery in Alaska harvests approximately 51,000 salmon a year and the First Nation Chinook fishery in the Yukon Territory harvests about 8,000 salmon - including the Vuntut Gwich'in First Nation fishery on the Porcupine River in the Old Crow area. Likewise, subsistence fall chum harvests in Alaska average 113,000 salmon, whereas the Yukon First Nation fall chum fishery, including Old Crow, harvests approximately 8,000 salmon.

14) WHAT IS CUSTOMARY TRADE AND BARTER?

In Alaska, customary trade is a term for limited, non-commercial, traditional cash exchange of subsistence-caught fish and wildlife. Both state and federal law recognize customary trade as a subsistence use. However, there are no specific regulatory provisions for customary trade in state law, except for herring roe on kelp in Southeast Alaska. According to Alaska state law, unless specifically allowed by the Alaska Board of Fisheries, customary trade is prohibited. In January 2003, the Federal Subsistence Board adopted new regulations clarifying limits on the customary trade of subsistence-caught fish, their parts and their eggs. The new regulations protect traditional practices of customary trade involving subsistence fish, but reduce the potential for commercial sale of those fish by prohibiting customary trade with any business and resale by non-rural residents. Customary trade transactions between rural residents may continue, but the sale of fish to others for their personal or family consumption is limited.

Customary barter means traditional exchange of a subsistence product for another product, commonly another subsistence product such as dried salmon for seal oil. No cash is involved in barter. This provision recognizes the long-term, traditional patterns of exchange of regional products that pre-date use of money in Alaska Native cultures.

In the Yukon Territory, the First Nations may give, trade, barter or sell salmon, but not for commercial purposes, caught in their aboriginal fisheries, amongst members of their respective First Nation, other Yukon First Nations or adjacent First Nations with transboundary agreements.

"I THOUGHT OUR
MINI-EPIC [ABOUT THE
PROCESS LEADING TO
THE YUKON RIVER
SALMON AGREEMENT]
HAD LOTS OF
MELODRAMA: LATE
NIGHT NEGOTIATING
SESSIONS, HOT
TEMPERS,
ACCUSATIONS, YOU
KNOW...
NEGOTIATING UP AND
DOWNS FEATURING
BREAKDOWNS,
RECONCILIATION AND
HOPE."

- STETSON TINKHAM ,
U.S. DEPARTMENT OF STATE



Courtesy of Andy Bassich

15) WITHIN THE YUKON RIVER DRAINAGE, HOW MANY FISH ARE TAKEN FOR DOG FOOD PURPOSES?

Historically, dogs have been used for transportation and hauling throughout the Yukon River drainage. Subsistence-caught salmon, primarily chum salmon, was an important food for these dogs. Until 1930, and the introduction of the airplane, sled dogs were the primary means for transporting mail and supplies in the winter. The gradual decline of the use of sled dogs reduced the need for salmon as dog food. The introduction of snow machines in the 1960s led to the further decline of sled dog populations throughout the drainage. However, beginning in the early 1980s a renewed interest in the recreational use and racing of sled dogs led to an increase in the number of dogs located along the Yukon River, although keeping sled dogs was much more common in the upper Yukon area as opposed to the lower Yukon area. This revival of dog sledding led to an increase in the number of chum salmon needed for dog food.

In federal and Alaska State laws, Chinook salmon must be used primarily for human consumption, and are not to be targeted for dog food. However, whole fish unfit for human consumption (due to disease, deterioration or deformities), scraps, and Chinook salmon smaller than 16 inches may be fed to dogs. As stated in the U.S. Federal Subsistence Fisheries Management Regulations, whole Chinook salmon caught incidentally during a subsistence chum fishery after August 10 in Sub-district 5-D, upstream of the city of Circle and after July 10 in the Koyukuk River drainage may be fed to dogs. State of Alaska regulations also allow whole Chinook salmon caught incidentally during a subsistence chum fishery after July 20 in District 6 and the Tanana drainage to be used as dog food.

Chum and coho salmon used to feed dogs are caught in Alaskan subsistence and commercial fisheries, depending on whether opportunity for the fishery is open. Commercially-related harvests for dog food typically meant chum salmon carcasses, left over from commercial roe harvests, were utilized. After harvesting, fall chum and coho salmon are commonly 'cribbed' or frozen by natural air temperature in wooden boxes or log cribs for use later in the winter.

The number of dogs within a household is considered a major factor affecting the amount of subsistence chum salmon a household produces. Within the Alaskan portion of the Yukon River drainage, between 1992 and 1997, the average 'dog food' harvest was estimated to be approximately 225,000 salmon (including summer chum, fall chum and coho salmon) to feed an average of 8,000 dogs. However, based on averages from 1998 to 2002, the 'dog food' harvest has been estimated to be approximately 55,000 salmon to feed an average of 6,800 dogs. The recent average (55,000 salmon) 'dog food' harvest had minimal impact on commercial chum salmon fisheries, since most of the years from 1998 to 2002 were closed to roe fisheries.

First Nation fisheries, within the Yukon Territory portion of the drainage, harvest on average less than 3,000 chum salmon on the main stem and less than 5,000 within the Porcupine system. Although it is legal to feed salmon to dogs, the majority use chum salmon for dog food purposes (social). In addition, some Yukon Territory commercial fishers retain some of their commercial chum catch for personal use – including food for dogs.

16) CAN THE YUKON TERRITORY HAVE A COMMERCIAL FISHERY IF ALASKA DOES NOT?

Canadian managers can open for commercial, domestic and recreational fisheries if in-season run projections are sufficient to achieve spawning escapement objectives and Yukon First Nation basic needs. Due to the challenges of managing in-season, Alaska may get more or less fish to the border than expected. If this is the case, in-season decisions to open or close the Yukon Territory commercial fishery are made regardless of openings or closures within the Alaskan commercial fishery. It is, therefore, possible to have a commercial fishery in the Yukon Territory even if the commercial fishery is closed in Alaska, and vice versa.

17) HOW MANY COMMERCIAL PERMIT HOLDERS ARE THERE AND HOW MANY FISH DO THEY TAKE?

Commercial fishing on the Yukon River in Alaska began as early as 1918, with most of it occurring in the lower portion of the river. Since that time, the number of participants and numbers of fish harvested annually has fluctuated as fish returns, availability of buyers, and subsistence harvest

patterns have fluctuated. Establishment of the limited entry program in 1973 began the process of stabilizing the number of permitted participants in commercial fisheries throughout Alaska. Limited entry was implemented in the Yukon River commercial fisheries in 1976 by the Commercial Fisheries Entry Commission (CFEC). Limitations stabilized the number of permitted fishermen in the Yukon River fisheries, but, as in many fisheries, efficiency of the fleet has continued to increase with modern boats, motors, communication abilities, and nets.

Presently within the lower Yukon River in Alaska there are 704 gillnet commercial permits; in the upper Yukon area there are 72 gillnet permits and 161 fish wheel permits. Most of these permits are held by local Yukon River residents. Over the past three years, fewer fishermen have used their permits due to low salmon runs and poor market conditions. In 2003 only 559 out of 703 permits were fished in the lower river due to poor runs and conservative management actions. Under Alaska state management, the historical commercial harvests of Chinook salmon have ranged from 158,018 fish sold in 1981 to zero in 2001 (ten-year average [1994-2003] is approximately 77,500 salmon).

In the Yukon Territory, there are 29 commercial fishing permits, with 21 currently issued. The historical commercial harvests of Chinook salmon in the Yukon Territory have ranged from 13,027 fish sold in 1983 to zero in 2000 (ten-year average [1994-2003] approximately 4,693 salmon). However, as in Alaska, not all permit holders in the Yukon Territory participate annually in commercial fisheries.

The commercial fisheries in Alaska and the Yukon Territory were severely restricted or closed during 1998 through 2002, making the ten-year average (1993-2002) low compared to historical harvests. Further harvest details for all fisheries can be found in the reports published annually by the JTC.

18) WHAT IS THE HISTORY OF THE SALMON ROE FISHERY ON THE YUKON RIVER?

In Alaska during the 1970s, commercial harvests of summer chum salmon increased throughout the Yukon River drainage. Poor statewide salmon runs in the early 1970s prompted the development of a commercial summer chum salmon fishery for flesh in the middle part of the Yukon River (District 4). From 1974 to 1977 subsistence salmon roe sales were legal and; it is likely that this sale of subsistence-caught salmon roe increased the chum salmon catches to above-normal subsistence harvest levels. Regulations allowing the sale of subsistence-caught salmon roe were retracted in late 1977.

The sale of roe taken during open commercial salmon fishing periods by commercial fishers remained legal. During the early 1980s to the early 1990s, buyers and processors experienced limited markets for summer chum salmon because of the increased state-wide salmon harvests and the relatively poor quality of salmon flesh harvested from District 4. However, during this same time, the demand for high quality chum salmon roe increased.

Within Alaska, the middle-Yukon River area summer chum salmon roe was most desirable by foreign markets because of roe maturity at this point in the river. The roe market continued to expand and, in most cases, the value of summer chum salmon roe exceeded the value of the flesh. As roe value increased summer chum salmon roe replaced summer chum salmon flesh as the primary commercial fisheries product from this area.

Approximately 95% of the summer chum salmon roe harvested in the Yukon River drainage came from Fishing District 4. Relatively small quantities of salmon roe are commercially harvested from other salmon species, including Chinook, fall chum, and coho salmon in the upper Yukon River and the salmon flesh and roe are usually sold together or separately. Commercial roe fisheries targeting fall chum salmon within the Yukon Territory did occur, but only when a market opened and only when the salmon run was large enough to sustain a commercial fishery.

The decline of the roe fishery in the mid-1990s corresponded initially to a decrease in market demands, and was followed by poor returns of summer chum salmon runs. Currently, harvesting of salmon roe during a scheduled commercial fishery is legal in the Yukon River drainage. Small amounts of roe are processed in Alaska and the Yukon Territory, but poor markets have had a significant impact on the profitability of fishing for roe.



"WHY IS THE YUKON RIVER SALMON AGREEMENT IMPORTANT? TWO REASONS: (1) IT WILL SERVE TO CONSERVE AND PROTECT SALMON FISHERIES IN THE REGION AND (2) IT SERVES AS AN IMPORTANT REAFFIRMATION OF CERTAIN PRINCIPLES OUR TWO GOVERNMENTS [U.S. AND CANADA] ADVOCATE INTERNATIONALLY: GOOD GOVERNANCE AND THE RULE OF LAW."

– PAULA DOBRIANSKY,
UNDER SECRETARY OF
STATE FOR GLOBAL
AFFAIRS

19) WHAT IS *Ichthyophonus* AND ARE INFECTED FISH SAFE FOR HUMAN CONSUMPTION?

Recent studies have revealed that a consistent portion of Yukon River Chinook salmon have been infected by a protist parasite commonly referred to as *Ichthyophonus*. In advanced stages, *Ichthyophonus* degrades flesh conditions, may affect the survival of adult Chinook salmon and have potential marketing implications for commercial fisheries. Infected fish typically have a normal exterior appearance, but internally may have visually detectable spots on specific organs – such as the liver and heart. The visible white spots are not the *Ichthyophonus* organism itself, but an immune response from the fish. Many other pathological conditions can cause a similar immune response. Fish showing infected organs only can typically be used in commercial markets and are fine for human consumption. If the disease is further developed, off color streaks or nodules may be distributed throughout the flesh. Some fishers have noted infected flesh will not air dry properly and become somewhat translucent/greasy with an off orange color. They generally have an unpleasant odor described as "fruity". *Ichthyophonus* is a fish pathogen not reported to infect humans. Infected fish are safe for human consumption.

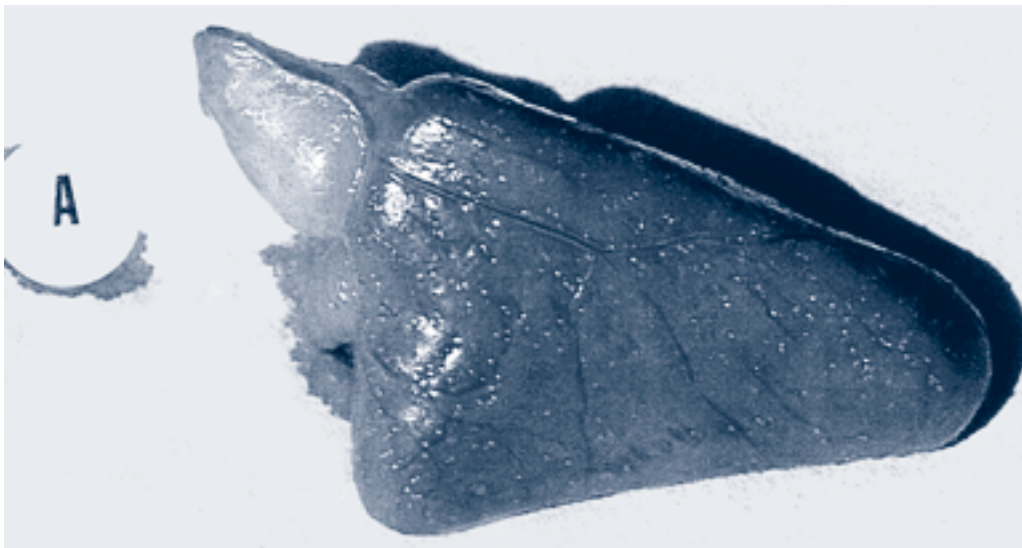
Initial detection in the Yukon River occurred in Alaska in 1988. Although not verified, anecdotal reports of salmon with similar-type conditions date back earlier. Sources of infection are still unknown, but likely sources include infected forage fish or zooplankton eaten by salmon while rearing in the Bering Sea and Pacific Ocean. Disparities of infection rates between observations by fishers and samples collected during sampling programs likely results from a number of factors: one being fishers are not trained to identify *Ichthyophonus* infections. Many infected salmon have subtle signs of infection that are often impossible to recognize with the naked eye, even to a trained parasitologist. Definitive diagnosis of infection must be done using laboratory techniques.

20) ARE SALMON INFECTED WITH *Ichthyophonus* BEING FOUND IN THE YUKON TERRITORY?

Canadian fishers of the Yukon Territory have reported relatively low numbers of Chinook salmon with possible *Ichthyophonus* infections. However, relatively high prevalence rates of infection have been detected in samples obtained at the DFO fish wheels near the international border and in the Dawson City area. These documented infection rates have been around 30%. However, infection rates for salmon sampled further upriver at the Whitehorse Rapids Fishway have tended to be lower than the samples collected further downstream.

The difference in infection rates between sample sets collected near the international border (Dawson City area), and those collected further upstream at Whitehorse suggest that there could be pre-spawning mortality. Another hypothesis is infected fish are more susceptible to harvest and sampling in the mainstem because they travel close to shore. In addition, many of the fish sampled at Whitehorse that were infected by *Ichthyophonus* looked and behaved normally. Infected fish have been successfully held in isolated tanks and used for brood stock at the Whitehorse Rapids Fish Hatchery. There are no indications that spawning ability or viability of these fish is compromised. Research has documented that some salmon, which had successfully spawned, were also found to be infected with *Ichthyophonus*. More research will continue in the future regarding *Ichthyophonus*.

A salmon heart infected with *Ichthyophonus*. Notice the white spots distributed throughout the muscle.



Courtesy of DFO, Canada

YUKON RIVER SALMON AGREEMENT

DIPLOMATIC NOTES

Canadian Embassy
Washington, December 4, 2002
Note No. 0098

Excellency,

I have the honor to refer to the negotiations that have been underway since 1971 concerning a long term agreement for the conservation of salmon stocks originating in the Yukon River in Canada and to propose an Agreement between our two Governments comprised of the following elements:

1. Pursuant to Article XIII of the Pacific Salmon Treaty, done at Ottawa on 28 January 1985 (hereinafter "the Treaty"), Annex I of the Treaty shall be amended as set out in Attachment A and Annex IV shall be amended by the addition of a new Chapter 8, as set out in Attachment B.
2. The following Articles of the Treaty shall not apply in relation to Annex IV, Chapter 8:
 - (a) Article II, paragraphs 7, 8, 18, 19, and 20;
 - (b) Article IV;
 - (c) Article V;
 - (d) Article VII; and
 - (e) Article XIII, paragraph 2.
3. Further, with regard to Article XII of the Treaty, for matters related to the Yukon River, the Yukon River Panel shall substitute for the Commission.
4. A Yukon River Restoration and Enhancement Fund shall be established in accordance with the terms and conditions set out in Attachment C.
5. The obligations under this Agreement shall be subject to the obtaining of specific legislative authority from the United States Congress for the Yukon River Restoration and Enhancement Fund. Such Congressional action (i.e., authorization and appropriation) lies within the discretion of the U.S. Congress.
6. If in any year the United States does not make an annual contribution as required in Attachment C, until the United States makes such contribution for that year the Parties' obligations under this Agreement shall be suspended.
7. Each Government shall take the necessary steps to implement the obligations under this Agreement consistent with its national laws.
8. If the Treaty is terminated in accordance with Article XV(2) thereof,
 - a) this Agreement shall be suspended and enter into force under the name "Yukon River Salmon Treaty" upon an exchange of diplomatic notes indicating that the necessary internal procedures of the Parties for the entry into force of the Yukon River Salmon Treaty have been completed;
 - b) the functions of the Yukon River Panel shall be assumed by a new commission, the "Yukon River Salmon Commission", and the Yukon River Panel shall thereupon cease to exist;
 - c) other provisions of the Treaty, to the extent they apply to the Yukon River, shall remain in effect as part of the Yukon River Salmon Treaty, mutatis mutandis; and
 - d) our two Governments shall seek to agree on other measures necessary for the continuation and application of the Yukon River Salmon Treaty.
9. At the end of the third year following its entry into force, and at any time thereafter, either Government may give notice of its intention to terminate this Agreement. The Agreement shall terminate one year following such notification.
10. A French language text of the attachments to this Note shall be verified and agreed upon by October 31, 2001 through an exchange of diplomatic notes.

If the above proposal is acceptable to the Government of the United States of America, I have the honor to propose that this Note, with its attachments, which shall be equally authentic in English and French, and your Excellency's affirmative Note in reply shall constitute an Agreement between our two Governments which shall enter into force on the date of your Note in reply, and that pending entry into force, the Agreement shall be applied provisionally from March 29, 2001.

Accept, Excellency, the renewed assurances of my highest consideration.

Signed Robert G. Thibault



Minister of Fisheries and Oceans

Department of State: Washington
December 4, 2002

Excellency:

I have the honor to acknowledge receipt of your note with attachments, which reads as follows:

Excellency,

I have the honor to refer to the negotiations that have been underway since 1971 concerning a long term agreement for the conservation of salmon stocks originating in the Yukon River in Canada and to propose an Agreement between our two Governments comprised of the following elements:

1. Pursuant to Article XIII of the Pacific Salmon Treaty, done at Ottawa on 28 January 1985 (hereinafter "the Treaty"), Annex I of the Treaty shall be amended as set out in Attachment A and Annex IV shall be amended by the addition of a new Chapter 8, as set out in Attachment B.
2. The following Articles of the Treaty shall not apply in relation to Annex IV, Chapter 8:
 - (a) Article II, paragraphs 7, 8, 18, 19, and 20;
 - (b) Article IV;
 - (c) Article V;
 - (d) Article VII; and
 - (e) Article XIII, paragraph 2.
3. Further, with regard to Article XII of the Treaty, for matters related to the Yukon River, the Yukon River Panel shall substitute for the Commission.
4. A Yukon River Restoration and Enhancement Fund shall be established in accordance with the terms and conditions set out in Attachment C.
5. The obligations under this Agreement shall be subject to the obtaining of specific legislative authority from the United States Congress for the Yukon River Restoration and Enhancement Fund. Such Congressional action (i.e., authorization and appropriation) lies within the discretion of the U.S. Congress.
6. If in any year the United States does not make an annual contribution as required in Attachment C, until the United States makes such contribution for that year the Parties' obligations under this Agreement shall be suspended.
7. Each Government shall take the necessary steps to implement the obligations under this Agreement consistent with its national laws.
8. If the Treaty is terminated in accordance with Article XV(2) thereof,
 - (a) this Agreement shall be suspended and enter into force under the name "Yukon River Salmon Treaty" upon an exchange of diplomatic notes indicating the necessary internal procedures of the Parties for the entry into force of the Yukon River Salmon Treaty have been completed;
 - (b) the functions of the Yukon River Panel shall be assumed by a new commission, the "Yukon River Salmon Commission", and the Yukon River Panel shall thereupon cease to exist;
 - (c) other provisions of the Treaty, to the extent they apply to the Yukon River, shall remain in effect as part of the Yukon River Salmon Treaty, mutatis mutandis; and
 - (d) our two Governments shall seek to agree on other measures necessary for the continuation and application of the Yukon River Salmon Treaty.
9. At the end of the third year following its entry into force, and at any time thereafter, either Government may give notice of its intention to terminate this Agreement. The Agreement shall terminate one year following such notification.
10. French language text of the attachments to this Note shall be verified and agreed upon by October 31, 2001 through an exchange of diplomatic notes.

If the above proposal is acceptable to the Government of the United States of America, I have the honor to propose that this Note, with its attachments, which shall be equally authentic in English and French, and your Excellency's affirmative Note in reply shall constitute an Agreement between our two Governments which shall enter into force on the date of your Note in reply, and that pending entry into force, the Agreement shall be applied provisionally from March 29, 2001.

Accept, Excellency, the renewed assurances of my highest consideration."

I have the further honor to inform you that the Government of the United States of America accepts the proposal contained in Your Excellency's Note and to confirm that your Note, with its attachments, and this Note in reply shall constitute an Agreement between our two Governments, which shall enter into force on the date of this Note.

Accept, Excellency, the renewed assurances of my highest consideration.

Signed for the Secretary of State,



Paula Dobriansky

ATTACHMENT A

Amendment to Annex I

of the Pacific Salmon Treaty

The Parties agree to add a new paragraph

(e) as follows:

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

- a. a Southern Panel for salmon originating in rivers with mouths situated 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 situated 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.

ATTACHMENT B

Amendment to Annex IV of the Pacific Salmon Treaty

The Parties agree to add a new Chapter 8. For purposes of this handbook Annex IV, Chapter 8 will be referred to as the Yukon River Salmon Agreement.

ATTACHMENT C

Restoration and Enhancement Fund

For purposes of this handbook Attachment C will be referred to as the Restoration and Enhancement Fund.

YUKON RIVER SALMON AGREEMENT

YUKON RIVER

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) "Main stem 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; and
- (f) "Yukon River in Canada" means the entire Yukon River

drainage in Canada, including the Porcupine River drainage.

(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 Main stem 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 Main stem 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 coordinated 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 coordinated 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 17.
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 endeavor, for that year, to deliver to the Canadian border on the Main stem 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 analyze 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 MAIN STEM 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 Appendixes 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 Main stem 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 Main stem 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 Yukon River Restoration and Enhancement Fund are set out in Appendix 2 to Attachment C.

APPENDIX I

to Yukon River Salmon Agreement (Attachment B)

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 Main stem 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 Main stem 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 II

to Yukon River Salmon Agreement (Attachment B)

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 Main stem Yukon River shall be 33,000 to 43,000 chinook salmon.
2. Harvest of Main stem 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.

RESTORATION AND ENHANCEMENT FUND

1. The Parties hereby establish the Yukon River Salmon Restoration and Enhancement Fund, hereinafter referred to as "the Restoration and Enhancement 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 Restoration and Enhancement Fund, in the amount set out in Appendix 2 hereto. The United States will endeavor 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 Restoration and Enhancement Fund shall be drawn from the Restoration and Enhancement Fund.

6. The Restoration and Enhancement Fund shall be open for additional financial contributions from any source.
7. Monies from the Restoration and Enhancement 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 Restoration and Enhancement Fund shall be accounted for as directed by the Yukon River Panel.

APPENDIX I

to Restoration and Enhancement Fund (Attachment C) 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 Restoration and Enhancement 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 Restoration and Enhancement 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; and

(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 II

to Restoration and Enhancement Fund (Attachment C)

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 Restoration and Enhancement 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.



YUKON SALMON ACT OF 2000 (U.S.)

TITLE II—YUKON RIVER SALMON SEC. 201. SHORT TITLE.

This title may be cited as the “Yukon River Salmon Act of 2000”.

SEC. 202. YUKON RIVER SALMON PANEL. (a) ESTABLISHMENT.—

(1) IN GENERAL.—There shall be a Yukon River Salmon Panel (in this title referred to as the “Panel”).

(2) FUNCTIONS.—The Panel shall—

(A) advise the Secretary of State regarding the negotiation of any international agreement with Canada relating to management of salmon stocks originating from the Yukon River in Canada;

(B) advise the Secretary of the Interior regarding restoration and enhancement of such salmon stocks; and

(C) perform other functions relating to conservation and management of such salmon stocks as authorized by this or any other title.

(3) DESIGNATION AS UNITED STATES REPRESENTATIVES ON BILATERAL BODY.—The Secretary of State may designate the members of the Panel to be the United States representatives on any successor to the panel established by the interim agreement for the conservation of salmon stocks originating from the Yukon River in Canada agreed to through an exchange of notes between the Government of the United States and the Government of Canada on February 3, 1995, if authorized by any agreement establishing such successor.

(b) MEMBERSHIP.—

(1) IN GENERAL.—The Panel shall be comprised of six members, as follows:

(A) One member who is an official of the United States Government with expertise in salmon conservation and management, who shall be appointed by the Secretary of State.

(B) One member who is an official of the State of Alaska with expertise in salmon conservation and management, who shall be appointed by the Governor of Alaska.

(C) Four members who are knowledgeable and experienced with regard to the salmon fisheries on the Yukon River, who shall be appointed by the Secretary of State in accordance with paragraph

(2) APPOINTEES FROM ALASKA.—

(A) The Secretary of State shall appoint the members under paragraph (1)(C) from a list of at least three individuals nominated for each position by the Governor of Alaska.

(B) In making the nominations, the Governor of Alaska may consider suggestions for nominations provided by organizations with expertise in Yukon River salmon fisheries.

(C) The Governor of Alaska may make appropriate nominations to allow for appointment of, and the Secretary of State shall appoint, under paragraph (1)(C)—

(i) at least one member who is qualified to represent the interests of Lower Yukon River fishing districts; and

(ii) at least one member who is qualified to represent the interests of Upper Yukon River fishing districts.

(D) At least one of the members appointed under paragraph

(1)(C) shall be an Alaska Native.

(3) ALTERNATES.—

(A) The Secretary of State may designate an alternate Panel member for each Panel member the Secretary appoints under paragraphs (1)(A) and (C), who meets the same qualifications, to serve in the absence of the Panel member.

(B) The Governor of the State of Alaska may designate an alternative Panel member for the Panel member appointed under subsection (b)(1)(B), who meets the same qualifications, to serve in the absence of that Panel member.

(c) TERM LENGTH.—Panel members and alternate Panel members shall serve 4-year terms. Any individual appointed to fill a vacancy occurring before the expiration of any term shall be appointed for the remainder of that term.

(d) REAPPOINTMENT.—Panel members and alternate Panel members shall be eligible for reappointment.

(e) DECISIONS.—Decisions of the Panel shall be made by the consensus of the Panel members appointed under subparagraphs (B) and (C) of subsection (b)(1).

(f) CONSULTATION.—In carrying out their functions, Panel members may consult with such other interested parties as they consider appropriate.

SEC. 203. ADVISORY COMMITTEE.

(a) APPOINTMENTS.—The Governor of Alaska may establish and appoint an advisory committee of not less than eight, but not more than 12, individuals who are knowledgeable and experienced with regard to the salmon fisheries on the Yukon River. At least two of the advisory committee members shall be Alaska Natives. Members of the advisory committee may attend all meetings of the Panel, and shall be given the opportunity to examine and be heard on any matter under consideration by the Panel.

(b) COMPENSATION.—The members of such advisory committee shall receive no compensation for their services.

(c) TERM LENGTH.—Members of such advisory committee shall serve 2-year terms. Any individual appointed to fill a vacancy occurring before the expiration of any term shall be appointed for the remainder of that term.

(d) REAPPOINTMENT.—Members of such advisory committee shall be eligible for reappointment.

SEC. 204. EXEMPTION.

The Federal Advisory Committee Act (5 U.S.C. App.) shall not apply to the Panel or to an advisory committee established under section 203.

SEC. 205. AUTHORITY AND RESPONSIBILITY.

(a) RESPONSIBLE MANAGEMENT ENTITY.—The State of Alaska Department of Fish and Game shall be the responsible management entity for the United States for the purposes of any agreement with Canada regarding management of salmon stocks originating from the Yukon River in Canada.

(b) EFFECT OF DESIGNATION.—The designation under subsection (a) shall not be considered to expand, diminish, or otherwise change the management authority of the State of

Alaska or the Federal Government with respect to fishery resources.

(c) **RECOMMENDATIONS OF PANEL.**—In addition to recommendations made by the Panel to the responsible management entities in accordance with any agreement with Canada regarding management of salmon stocks originating from the Yukon River in Canada, the Panel may make recommendations concerning the conservation and management of salmon originating in the Yukon River to the Department of the Interior, the Department of Commerce, the Department of State, the North Pacific Fishery Management Council, and other Federal or State entities as appropriate. Recommendations by the Panel shall be advisory in nature.

SEC. 206. ADMINISTRATIVE MATTERS.

(a) **COMPENSATION.**—Panel members and alternate Panel members who are not State or Federal employees shall receive compensation at the daily rate of GS-15 of the General Schedule when engaged in the actual performance of duties.

(b) **TRAVEL AND OTHER NECESSARY EXPENSES.**—Travel and other necessary expenses shall be paid by the Secretary of the members of any advisory committee established under section 203 when engaged in the actual performance of duties.

(c) **TREATMENT AS FEDERAL EMPLOYEES.**—Except for officials of the United States Government, all Panel members, alternate Panel members, and members of any advisory committee established under section 203 shall not be considered to be Federal employees while engaged in the actual performance of duties, except for the purposes of injury compensation or tort claims liability as provided in chapter 81 of title 5, United States Code, and chapter 71 of title 28, United States Code.

SEC. 207. YUKON RIVER SALMON STOCK RESTORATION AND ENHANCEMENT PROJECTS.

(a) **IN GENERAL.**—The Secretary of the Interior, in consultation with the Secretary of Commerce, may carry out projects to restore or enhance salmon stocks originating from the Yukon River in Canada and the United States.

(b) **COOPERATION WITH CANADA.**—If there is in effect an agreement between the Government of the United States and the Government of Canada for the conservation of

salmon stocks originating from the Yukon River in Canada that includes provisions governing projects authorized under this section, then—

- (1) projects under this section shall be carried out in accordance with that agreement; and
- (2) amounts available for projects under this section—
 - (A) shall be expended in accordance with the agreement; and
 - (B) may be deposited in any joint account established by the agreement to fund such projects.

SEC. 208. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to the Secretary of the Interior to carry out this title US\$4,000,000 for each of fiscal years 2000, 2001, 2002, and 2003, of which—

- (1) such sums as are necessary shall be available each fiscal year for travel expenses of Panel members, alternate Panel members, United States members of the Joint Technical Committee established by paragraph C.2 of the memorandum of understanding concerning the Pacific Salmon Treaty between the Government of the United States and the Government of Canada (recorded January 28, 1985), and members of an advisory committee established and appointed under section 203, in accordance with Federal Travel Regulations and sections 5701, 5702, 5704 through 5708, and 5731 of title 5, United States Code;
- (2) such sums as are necessary shall be available for the United States share of expenses incurred by the Joint Technical Committee and any panel established by any agreement between the Government of the United States and the Government of Canada for restoration and enhancement of salmon originating in Canada;
- (3) up to US\$3,000,000 shall be available each fiscal year for activities by the Department of the Interior and the Department of Commerce for survey, restoration, and enhancement activities related to salmon stocks originating from the Yukon River in Canada, of which up to US\$1,200,000 shall be available each fiscal year for Yukon River salmon stock restoration and enhancement projects under section 207(b); and
- (4) US\$600,000 shall be available each fiscal year for cooperative salmon research and management projects in the portion of the Yukon River drainage located in the United States that are recommended by the Panel.



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"WE HAVE WORKED SO HARD AND SO LONG FOR A DAY LIKE THIS. THIS REALLY, REALLY IS A SERIOUS THING THAT WE HAVE DONE, AND IT'S A GOOD THING."

– PEARL KEENAN,
WHITEHORSE SIGNING
CEREMONY



Courtesy of Dick Mahoney

GLOSSARY OF TERMS

Aboriginal – refers to the First Nation peoples of Canada

Abundance-Based (Escapement-Based) Management – managing fisheries annually according to the quantity of returning salmon (numbers of individual salmon), including those required for spawning escapement and fish to harvest. Harvests fluctuate as managers make adjustments depending on salmon run sizes.

Adipose fin – a fin without bones, rays or spines located at the posterior end on the dorsal (back) surface of the fish; sometimes clipped from juvenile hatchery fish, with coded wire tag inserted through snout, prior to release for future identification purposes

Allocate – to grant specific harvest privileges, usually by regulation or policy, among or between various user groups; allocation includes quotas, time periods, area restrictions, percentage sharing of stocks and other management measures providing or limiting harvest opportunities

Alevin – a newly hatched salmon that still has an attached yolk sac

Anadromous – running up; said of marine fishes that migrate from sea and run up rivers to spawn; e.g., Chinook, chum and coho salmon

Appropriation – money set aside by formal action for a particular purpose or use; funds from the U.S. Congress to support the PST implementation

Artificial propagation – to increase or multiply the number of fish, through human intervention (i.e. hatcheries, egg incubation boxes) during the breeding process; the use of non-natural techniques to brood and rear salmon fry in order to release them into a system with the intention of increasing the future number of returning salmon

Assess – to determine the importance, size, or value of

Basin – the entire region/area drained by a river and its tributaries

Biological Escapement Goal (BEG) – the number of salmon that provides the greatest potential for maximum sustained yield and developed from the best available biological information; the number of salmon needed to spawn on spawning grounds, based on maximum sustained yield, to provide the greatest potential for production of salmon over the long-term.

Border Passage (Border Escapement) Objective – the number of adult Canadian-origin salmon that cross the Alaska-Yukon border into the Yukon Territory, which includes spawning escapement objective plus the mid-point of the Canadian guideline harvest range.

Brood – the young of an animal hatched or cared for at one time

Caudal fin – the fin at the rear end of the fish; tail fin

Coded wire tag (CWT) – magnetically detectable pinhead-sized tag implanted in the snout of a young salmon for identification as an adult; implanted fish also have their adipose fin removed as an external sign that they carry a coded wire tag.

Conservation – management of fish and wildlife populations and habitats and the regulation of users to ensure the quality, diversity, and long-term optimum productivity of fish and wildlife populations, with the primary goal of ensuring a sustainable harvest and its proper utilization – as defined under the Umbrella Final Agreement; planned management of a natural resource to prevent over-exploitation, destruction, or neglect

Cribbing – the process of freezing fish in wooden boxes or log cribs, primarily for dog food, by natural air temperature, for use later in the winter; this method is commonly used in late fall and early winter when nighttime temperatures often fall below freezing; the slow freezing process allows fish to decompose slightly making it more palatable and digestible to dogs

Dorsal – pertaining to the back or, usually, upper part

Dorsal fin – fin(s) on the dorsal median line; composed of spines and/or rays

Drainage – an area which is drained of surface water by a main river system

Enhancement – expanding a wild salmon stock beyond its natural production level; this can be accomplished through man-made improvements to natural habitats, or the application of artificial fish culture technology, that will lead to the increase of salmon returns (usually done with the intention of increasing future harvests)

Estuary – a water passage where the tide meets a river current, especially at the lower end of a river

Equitable Harvest Share – the principle adopted with the first signing of the Pacific Salmon Treaty in 1985 providing each country to receive benefits equivalent to the production of salmon originating in its national waters

Expected run size – annual run outlooks, often based on spawning escapement numbers for the principal brood years, average age composition and recent estimates of survival and production; other methods for determining expected run sizes include examination of returns of younger age classes of a specific brood year (siblings returns), the relative production of fry or smolt and relative catches of younger aged fish in marine waters.

Fishery – the activity of harvesting or seeking to harvest fish

Fry – recently hatched or juvenile fish

Gaff – a spear used for harvesting fish

Geology – the scientific study of the origin, history and structure of the earth

Gill –organ for exchanging respiratory gases (oxygen, carbon dioxide) between the blood of the fish and the water; comprises gill arch, gill rakers and gill filaments

Gillraker – any of the bony or cartilaginous arches of a fish supporting the gills that divert solid substances away from the gills; gillrakers extend dorsoventrally (along the axis joining the dorsal and ventral sides) and are placed one behind the other on each side of the pharynx (the canal between the cavity of the mouth and the esophagus)

Guideline Harvest Range – the quantity of Canadian-origin salmon allowed to be caught in Yukon Territory and Alaskan fisheries, as a share for each country calculated following the Agreement harvest sharing percentages of the total allowable catch; this range can be dropped to zero if necessary to achieve escapement goals

Habitat – the place or environment in which a plant or animal naturally or normally lives and grows

Harvest Share – the calculated quantity of the total allowable catch of Canadian-origin salmon to be caught in the Alaska and Yukon Territory fisheries through application of the Yukon River Salmon Agreement sharing arrangements.

Hydrology – dealing with the properties, distribution, and circulation of water on and below the earth's surface and in the atmosphere

Interception – the harvest of stocks of fish by other fisheries located downstream along the migratory path of the fish; as written in the PST – harvesting of salmon originating in the waters of one Party by a fishery of the other Party

Kilometer (km) – 1000 meters, 0.6214 mile or (approximately) 5/8 mile

Lateral line – a canal along the side of a fish containing pores that open into tubes supplied with sense organs sensitive to low vibrations

Main stem – the main channel of a river or stream

Mark-Recapture – a stock assessment program that has a primary objective of estimating the size of populations. It usually involves capturing live salmon, marking or tagging them and releasing them back into the water at one location. Attempts are made to recapture both tagged and untagged fish at a second location. Ratios of tagged to untagged salmon are then calculated to develop a population estimate relative to the tagging location

Maximum Sustained Yield (MSY) – a management concept which estimates the largest harvest that can continuously be taken from a stock, under existing environmental conditions, without impairing its ability to renew/reproduce through natural growth or replenishment. For species with fluctuating recruitment, the maximum might be obtained by taking fewer fish in some years than in others.

Meter (m) – 1/1000 km or 1.094 yards

Mile – 1760 yards or 1.609 kilometers

Milt – sperm of a male fish

Migrate – to move from one region/area to another

Mitigate – to make less severe the impact of some thing upon another

Mixed-stock – a group of multiple stocks of fish, either of the same species or of different species, migrate through an area together and are vulnerable to harvest, or other impacts, at the same time

Multi-species salmon run – different species of salmon migrate through an area together and are vulnerable to harvest, or other impacts, at the same time

Natal – belonging to a particular place by birth

Origin – rise, beginning, or derivation from a source

Pacific Salmon Commission – the body formed by the governments of Canada and the United States to implement the Pacific Salmon Treaty of 1985 for the conservation, rational management, and optimum production of Pacific Salmon; this body has no responsibilities in relation to the Yukon River Salmon Agreement

Pectoral fins – uppermost of the paired fins, located just behind the head

Physiographic (Physical Geography) – geography that deals with the exterior physical features and changes of the earth

Protist – a single celled organism, which can include many widely ranging microbes, including slime molds, protozoa and primitive algae; they are all eukaryotic <you-carry-ah-tick> creatures, meaning their DNA is enclosed in a nucleus inside the cell (unlike bacteria, which are prokaryotic <pro-carry-ah-tick> and have no nucleus to enclose their DNA).

Range – a series of things in a row; between a minimum and maximum number; in salmon fisheries, used for spawning escapement objectives and harvest sharing allocations

Rearing grounds – an area where fish grow

Recruitment – the process of adding new individuals to a population

Restoration – returning a wild salmon stock or its habitat to its natural production level

Redd – a depression in the gravel created by salmon before spawning, into which the female fish releases her eggs

Return – an aggregation of salmon over several or more years that represent the surviving adult offspring from a single brood year

Roe – the eggs of a female fish, especially when still enclosed in the ovarian membrane

Run – an aggregation of salmon of all ages returning from ocean feeding grounds to spawn in any given year

Run time – period of time during which salmon migrate

Smolt – a young salmon that is at the stage of development (about two years old) when it assumes the silvery color of the adult and has undergone a series of physiological changes to prepare it for its marine residency (salt water).

Spawn – to produce or deposit eggs, especially in large numbers

Spawning Escapement – the number of adult salmon that have avoided all fisheries to return upstream to spawning grounds to reproduce

Stewardship – the careful and responsible management of something entrusted to one's care; under the Yukon River Salmon Agreement, all management entities work to promote stewardship of salmon habitat and stocks

Sub-adult – an individual similar in appearance to an adult and approaching adulthood in age and size, but still incapable of breeding.

Subsistence use – non-commercial, customary and traditional uses of wild, renewable resources...for direct personal or family consumption as food, shelter, clothing, tools, or transportation, for the making and selling of handicraft articles out of non-edible by-products of fish and wildlife resources taken for subsistence – as defined in Alaska law (AS 16.05.940. (32)); subsistence uses of fish and wildlife can occur only outside of non-subsistence use areas. The Fairbanks Northstar Borough boundaries constitute the only non-subsistence use area in the Yukon River drainage in Alaska.

Sustainable – a method of harvesting, using and managing a resource so that the resource is not depleted or permanently damaged

Test fishery – experimental fisheries and/or a brief commercial fishery opening management entities conduct to assess run strength for use in fisheries management decisions – such as the opening and closing of fisheries and the duration of fishing periods.

Topography – the configuration of a surface including its relief and the position of its natural and man-made features

Total allowable catch – total run size of each salmon stock minus the agreed spawning escapement objective for that stock

Trans-boundary – salmon crossing the border between the U.S. and Canada; for example – a river that rises in Canada and flows to sea through the United States

Tributary – a stream or river flowing into a larger stream, river or lake;

Value added – rise in price of a product due to the manufacturing or marketing process (i.e. processing whole salmon into smoked fish strips)

Ventral fins – paired fins usually located behind and below the pectoral fins; also called pelvic fins

Viable fishery – existing and developing with a reasonable chance of succeeding as an independent fishery under normal management and conservation constraints; under the Yukon River Salmon Agreement, Yukoners may use the R&E Fund to support projects to create and maintain viable fisheries with economic, social and environmental benefits, which may include developing commercial fishery infrastructure and markets.

Watchdog – one that guards against loss, waste, theft, or undesirable practices

Yukon River – the entire Yukon River drainage in the U.S. and Canada

Yukon River Panel – a body of local fishers and agency representatives, formed by the governments of Canada and the U.S. to implement the YRSA and to make recommendations to U.S. and Canadian management entities concerning the conservation and management of Canadian-origin salmon

Yukoners – refers to residents within the Yukon Territory, Canada portion of the Yukon River drainage

ACRONYMS

ADFG	Alaska Department of Fish and Game	JTC	Joint Technical Committee	UFA	Umbrella Final Agreement of the Yukon First Nation Land Claims	YRDFA	Yukon River Drainage Fisheries Association, Alaska
AVCP	Association of Village Council Presidents, Alaska	PST	Pacific Salmon Treaty			YRSA	Yukon River Salmon Agreement
BOF	Board of Fisheries, Alaska	R&E FUND	Restoration and Enhancement Fund	YR PANEL	Yukon River Panel	YSC	Yukon Salmon Committee, Canada
DFO	Department of Fisheries and Oceans, Canada	TCC	Tanana Chiefs Conference, Alaska	YRCFA	Yukon River Commercial Fishing Association, Canada		
IFMP	Integrated Fisheries Management Plan	USFWS	United States Fish and Wildlife Service				

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