

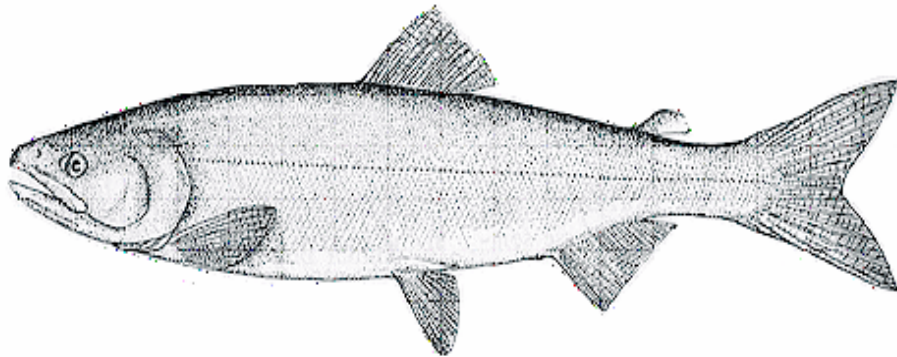
**PACIFIC REGION**

**INTEGRATED FISHERIES  
MANAGEMENT PLAN**

**SALMON**

**TAKU RIVER, B.C.**

**JUNE 1, 2003 TO MAY 31, 2004**



*Oncorhynchus spp*



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

Canada

This Integrated Fisheries Management Plan is intended for general purposes only. Where there is a discrepancy between the Plan and the Fisheries Act and Regulations, the Act and Regulations are the final authority. A description of Areas and Subareas referenced in this Plan can be found in the Pacific Fishery Management Area Regulations.



## TABLE OF CONTENTS

<b>1</b>	<b>INTRODUCTION.....</b>	<b>7</b>
<b>2</b>	<b>GENERAL CONTEXT .....</b>	<b>7</b>
	2.1 Background .....	7
	2.2 New Directions .....	8
	2.3 An Allocation Policy for Pacific Salmon.....	9
	2.4 Consultation and Improved Decision-Making .....	9
	2.4.1 Taku River Tlingit First Nation: AFS Consultation.....	10
	2.4.2 Taku River Salmon Management Committee.....	10
	2.4.3 Pacific Salmon Treaty (PST) Transboundary Panel .....	10
	2.5 Wild Salmon Policy.....	11
	2.6 Selective Fishing Policy.....	11
	2.7 First Nations and Canada’s Fisheries Framework.....	12
	2.8 Pacific Salmon Treaty.....	12
	2.9 Research.....	13
	2.10 Fishery Monitoring Programs .....	13
<b>3</b>	<b>OBJECTIVES .....</b>	<b>13</b>
	3.1 Conservation Objectives.....	13
	3.2 First Nations Fisheries Objectives.....	14
	3.3 International Objectives.....	15
	3.4 Domestic Allocation Objectives .....	15
	3.5 Enforcement Objectives .....	15
	3.5.1 Conservation and Protection Priorities for 2003 .....	16
<b>4</b>	<b>DECISION GUIDELINES AND SPECIFIC MANAGEMENT MEASURES.....</b>	<b>17</b>
	4.1 General Decision Guidelines .....	17
	4.1.1 Background .....	17
	4.1.2 Pre-season Decisions .....	18
	4.1.3 In-season Decisions .....	19
	4.1.4 Allocation .....	19
	4.1.5 First Nations – Food, Social and Ceremonial.....	20
	4.1.6 Recreational Fisheries .....	20
	4.1.7 Commercial Fisheries .....	21
	4.1.8 Excess Salmon to Spawning Requirements .....	21
	4.1.9 Selective Fisheries .....	22
	4.1.10 By-catch management .....	22
	4.2 Chinook Decision Guidelines .....	23
	4.2.1 Background .....	23
	4.2.2 Pre-season Decisions .....	23
	4.2.3 In-season Decisions .....	23
	4.2.4 Chinook Constraints.....	23
	4.3 Prospects for 2003 - Chinook.....	23
	4.4 Sockeye Decision Guidelines .....	24
	4.4.1 Background .....	24
	4.4.2 Sockeye Pre-season Decisions .....	25

	4.4.3	Sockeye In-season Decisions.....	25
	4.4.4	Sockeye Constraints.....	26
	4.4.5	Prospects for 2003 - Sockeye.....	27
4.5		Coho Decision Guidelines.....	27
	4.5.1	Background .....	27
	4.5.2	Coho Pre-season Decisions .....	28
	4.5.3	Coho In-season Decisions .....	28
	4.5.4	Coho Constraints .....	29
	4.5.5	Prospects for 2003 – Coho.....	30
4.6		Pink Salmon Decision Guidelines.....	31
4.7		Chum Salmon Decision Guidelines .....	31
5		<b>2003 TAKU RIVER FIRST NATION FISHING PLAN.....</b>	<b>31</b>
6		<b>2003 TAKU RIVER COMMERCIAL FISHING PLAN .....</b>	<b>32</b>
7		<b>2003 TAKU RIVER RECREATIONAL FISHING PLAN.....</b>	<b>33</b>
8		<b>2002 POSTSEASON REVIEW .....</b>	<b>33</b>
	8.1	Conserving and Restoring Spawning Stocks and Habitats.....	34
	8.2	First Nation Fisheries Objectives .....	35
	8.3	International Objectives.....	35
	8.4	Domestic Allocation Objectives .....	36
	8.5	Enforcement Objectives .....	37
9		<b>APPENDICES.....</b>	<b>38</b>
	9.1	<b>APPENDIX 1: Literature Cited .....</b>	<b>38</b>
	9.2	<b>APPENDIX 2: Map of the Taku River System.....</b>	<b>39</b>
	9.3	<b>APPENDIX 3: Taku River Stock Assessment.....</b>	<b>40</b>
	9.4	<b>APPENDIX 4: Licensing.....</b>	<b>42</b>

## CONTACTS FOR 2003

### Fisheries and Oceans Canada Contacts

Name	Position	Location	Phone
Gord Zealand	Area Director	Whitehorse	867-393-6725
Sandy Johnston	Chief, Fisheries Mgt./ Stock Assessment	Whitehorse	867-393-6729
Ian Boyce	Stock Assessment Biologist	Whitehorse	867-393-6739
Eero Karanka	Habitat Biologist	Smithers	250-847-3916
Mary Ellen Jarvis	AFS Coordinator	Whitehorse	867-393-6728
Steve Smith	A/Chief, Conservation and Protection	Whitehorse	867-393-6724
Rick Ferguson	Senior Fisheries Technician	Whitehorse	867-393-6782
Scott Herron	Fisheries Technician	Taku River	

### Taku Salmon Management Committee

Name	Position	Location	Phone
Gord Zealand	Chair	Whitehorse	867-393-6719
Richard Erhardt	TRTFN	Atlin	250-651-2423
Robert Geisbrecht	Taku Commercial Fisher	Atlin	250-651-7786
Ray Kendel	TBR Panel	Cortez Island, BC	250-935-8508
Len Parisien	Taku Commercial Fisher	Atlin	250-651-7604
Jason Williams	TRTFN	Atlin	250-651-7616
John Ward	TBR Panel	Atlin	250-651-7616
Vernon Williams	TRTFN	Atlin	250-651-7616
Guy Antila	Recreational fishing rep	Atlin	250-651-7784
Gary Hill (alternate)		Atlin	250-651-7553

### Pacific Salmon Treaty Memberships

Pacific Salmon Treaty Transboundary Panel			
Name	Position	Location	Phone
Gord Zealand	Co-Chair	Whitehorse	867-393-6719
Stephan Jacob	Member (Stikine)	Dease Lake	250-358-2864
Cheri Frocklage	Member (FN Stikine)	Telegraph Creek	250-771-3012
Ray Kendel	Member (Taku)	Cortez Island, BC	250-935-8508
John Ward	Member (FN Taku)	Atlin	250-651-7792
Ron Chambers	Member (FN Alsek)	Haines Jct	867-634-2288
Lorelei Smith	Member (Alsek)	Whitehorse	867-393-3998

### British Columbia Government Contacts

Name	Position	Location	Phone
Dana Y. Atagi	A/ Head of Fisheries	Smithers	250-847-7290
Tobe Sprado	Conservation Officer	Atlin	250-651-7633

## WEBSITE INDEX

A more comprehensive index of web-based information is available at [www.dfo-mpo.gc.ca/ops/fm/salmon/index.htm](http://www.dfo-mpo.gc.ca/ops/fm/salmon/index.htm). If you don't have access to the Internet, any Fisheries and Oceans Canada office can download and print the information you need. Please allow a minimum of one week to obtain the information.

### **DFO Main Page** ([www.dfo-mpo.gc.ca](http://www.dfo-mpo.gc.ca))

General information on the Department; Supreme Court decision in the Marshall case

### **Pacific Region Main Page** ([www.pac.dfo-mpo.gc.ca](http://www.pac.dfo-mpo.gc.ca))

General information (e.g. office locations, employment); Links to specific branches

### **Pacific Region – Fisheries Management Main Page** ([www.pac.dfo-mpo.gc.ca/ops/fm/](http://www.pac.dfo-mpo.gc.ca/ops/fm/))

#### **Aboriginal Fisheries Strategy** ([www.pac.dfo-mpo.gc.ca/ops/fm/AFS/](http://www.pac.dfo-mpo.gc.ca/ops/fm/AFS/))

Agreements; communal licences; ESSR; First Nations locations; guardian program; licence retirement; pilot sales; openings and closures.

#### **Acts, Orders, and Regulations** ([www.dfo-mpo.gc.ca/communic/policy/dnload\\_e.htm](http://www.dfo-mpo.gc.ca/communic/policy/dnload_e.htm))

#### **Commercial Fisheries** ([www.pac.dfo-mpo.gc.ca/ops/fm/Commercial/index.htm](http://www.pac.dfo-mpo.gc.ca/ops/fm/Commercial/index.htm))

Links to groundfish, herring, salmon and shellfish homepages; test fishing information; Integrated Fishery Management Plans

#### **Consultation Secretariat** ([www-comm.pac.dfo-mpo.gc.ca/english/database/Consult.htm](http://www-comm.pac.dfo-mpo.gc.ca/english/database/Consult.htm))

Consultation Calendar; information for current consultations

#### **Integrated Fisheries Management Plans** ([www.pac.dfo-mpo.gc.ca/ops/fm/IFMP/](http://www.pac.dfo-mpo.gc.ca/ops/fm/IFMP/))

Provide feedback; history; Implementation strategy

#### **Licensing** ([www.pac.dfo-mpo.gc.ca/ops/fm/licensing/](http://www.pac.dfo-mpo.gc.ca/ops/fm/licensing/))

Contact information; licence listings, vessel directory, vessel information, licence prefix categories, and licence statistics

#### **National Publications Online** ([www.dfo-mpo.gc.ca/publication\\_e.htm](http://www.dfo-mpo.gc.ca/publication_e.htm))

Reports, publications, reviews, acts, orders and regulations

#### **Oceans Program** ([www.pac.dfo-mpo.gc.ca/oceans/](http://www.pac.dfo-mpo.gc.ca/oceans/))

Integrated Coastal Management; Marine Protected Areas; Marine Environmental Quality; Oceans Outreach; Oceans Act

#### **Pacific Salmon Treaty** ([www.dfo-mpo.gc.ca/pst-tsp/agree/toce.htm](http://www.dfo-mpo.gc.ca/pst-tsp/agree/toce.htm))

Minister's messages; Full text of the 1999 Agreement; A history of the Pacific Salmon Treaty; Minister's speeches; Salmon Facts newsletter; News releases; Canada's Pacific Fisheries; Restructuring Initiatives; Independent studies and reports

**Recreational Fisheries** ([www.pac.dfo-mpo.gc.ca/ops/fm/Sport/index.htm](http://www.pac.dfo-mpo.gc.ca/ops/fm/Sport/index.htm))

General Information (Fishery Notices, Salmon Updates, Techniques, Equipment, Species); 2001-2003 B.C. Tidal Waters Sport Fishing Guide; 2001-2003 Freshwater Salmon Supplement; Sanitary and Red Tide closure summaries; Licensing information

**Regional Publications Online** ([www.pac.dfo-mpo.gc.ca/english/publications.htm](http://www.pac.dfo-mpo.gc.ca/english/publications.htm))

Agreements, treaties and acts; brochures and fact sheets; guideline documents, newsletters, reports and technical publications

**Salmon** ([www.pac.dfo-mpo.gc.ca/ops/fm/Salmon/index.htm](http://www.pac.dfo-mpo.gc.ca/ops/fm/Salmon/index.htm))

Fishery Notices; General Information (Glossary, Gear types, Objectives, Policies and Programs, Biology and Environment, Stock Assessment); Salmon Consultations (meeting schedules, minutes); 2002 Integrated Fisheries Management Plans

**Science** ([www-sci.pac.dfo-mpo.gc.ca](http://www-sci.pac.dfo-mpo.gc.ca))

Science divisions; Research Facilities; Pacific Scientific Advice Review Committee; International Research; Meetings, Events and Notices

**Selective Fishing** ([www-comm.pac.dfo-mpo.gc.ca/english/selective/default.htm](http://www-comm.pac.dfo-mpo.gc.ca/english/selective/default.htm))

Background, history, publications, workshop proceedings and study results

**Waves** ([inter01.dfo-mpo.gc.ca/wavesdocs/en/](http://inter01.dfo-mpo.gc.ca/wavesdocs/en/))

DFO online library catalogue

**Yukon/ Northern B.C.** ([www-ops.pac.dfo-mpo.gc.ca/yukonfm/](http://www-ops.pac.dfo-mpo.gc.ca/yukonfm/))

Stock assessment and management (catches and counts); Enforcement legislation and regulations (Federal, Yukon and B.C.); Management committees (Yukon Salmon Commission, Pacific Salmon Treaty panels)

## GLOSSARY

Note: a more comprehensive glossary with relevant terminology and additional information is available on the Salmon Homepage at:

[www.pac.dfo-mpo.gc.ca/ops/fm/salmon/fishery.htm](http://www.pac.dfo-mpo.gc.ca/ops/fm/salmon/fishery.htm)

SPA	Scale patterns analysis: spawning streams will create varying, unique scale patterns that allow specific point of origin assessments to be made.
AFS	Aboriginal Fisheries Strategy.
ADF&G	Alaska Department of Fish and Game.
CPUE	Catch per unit effort.
CWT	Coded-wire tag. A small metal tag inserted into the nose of a juvenile salmon (usually hatchery stock) prior to release or migration to the ocean. The tag has encoded information that indicates the origin and year of release of the fish.
DFO	Department of Fisheries and Oceans (Fisheries and Oceans Canada).
ESSR	Excess Salmon to Spawning Requirements.
FSC	Food, social and ceremonial.
ESSR	Excess Salmon to Spawning Requirements. This fishery occurs when salmon stocks return to a system after passing through the various fisheries and are at a level in excess of the capacity of the spawning grounds or enhancement facility, usually a hatchery, to receive them.
HEB	Habitat and Enhancement Branch.
HRSEP	Habitat Restoration and Salmon Enhancement Program.
IFMP	Integrated Fisheries Management Plan.
IDR	Institute for Dispute Resolution.
PST	Pacific Salmon Treaty.

PFRC	Pacific Fisheries Resource Conservation Council.
PSARC	Pacific Scientific Advice Review Committee.
PSC	Pacific Salmon Commission.
TAC	Total allowable catch.
TRTFN	Taku River Tlingit First Nation.
TTC	Transboundary Technical Committee.
USFWS	United States Fish and Wildlife Service.

## **1 INTRODUCTION**

This Integrated Fisheries Management Plan (IFMP) covers a one-year span, June 1, 2003 to May 31, 2004. It is aimed toward the management of chinook, sockeye, coho, pink and chum salmon in the Taku River. Reference is also made to steelhead, however the British Columbia Ministry of Water, Land and Air Protection is responsible for management of this species. This document contains a brief overview of the Taku River salmon fisheries and is meant to inform fishers, processors and other interested parties about the expected run sizes, management considerations and plans for the 2003 season. As the United States (U.S.) fishery at the mouth of the Taku River has significant influence on the salmon that return to the Canadian section of the drainage, there are several references to Alaskan fisheries, and to the Canada/U.S. Pacific Salmon Treaty provisions that were renewed in 1999. Prior to its finalisation, this underwent review and consultation with stakeholders and users of the fishery and contains revisions where appropriate based on advice received.

Responsibility for implementing this IFMP rests with the Yukon/Transboundary Area office of Fisheries and Oceans Canada. DFO personnel working in both the field and in Whitehorse accomplish in-season management. Contact information appears at the beginning of this document.

Management actions outlined in this plan are subject to change in-season in response to abundance levels of returning salmon stocks. While fishing opportunities outlined in this plan are anticipated, based on pre-season information, they are not guaranteed.

The plan recognises the need for ecosystem-based management approaches and the goal of developing selective fishing standards and implementation plans in the near future.

Further feedback on this IFMP is encouraged so that future plans can be made as useful as possible to stakeholders.

## **2 GENERAL CONTEXT**

This section provides a brief overview of key policies and the legal context for Pacific salmon management, as well as web-links to additional information.

### **2.1 Background**

Significant policy reform has occurred in Pacific Region salmon management programs over the past seven years and is expected to continue over the next several years. These policy changes are being guided by international and domestic considerations that are driving the management of marine resources towards a more ecosystem-based, precautionary approach. Moving to a more integrated management approach will be a primary focus to ensure that conservation needs are addressed and biological diversity is maintained. At the same time, the Department will seek

to provide reasonable and fair fishing opportunities to all sectors. An overview of DFO policies and programs is available at [www.pac.dfo-mpo.gc.ca/ops/fm/salmon/policy.htm](http://www.pac.dfo-mpo.gc.ca/ops/fm/salmon/policy.htm).

The precautionary approach to fisheries management is a framework for managing target species and their supporting ecosystems, and clearly recognises the link between long-term social and economic benefits from fishing and the long-term maintenance of productive salmon stocks. The essential components of the precautionary approach to fisheries are: explicit management objectives, management reference points, quantification and specification of risks associated with management activities, and regular performance reviews. These elements are now starting to appear in DFO management plans and processes, and will become more prominent as the precautionary approach is fully adopted. More information on the precautionary approach to fisheries is available on-line at the United Nations Food and Agriculture Organisation website ([www.fao.org](http://www.fao.org)). The federal government is also developing guiding principles for consistent application of the precautionary approach across the federal public service, which are summarised in *A Canadian Perspective on the Precautionary Approach/Principle* ([www.dfo-mpo.gc.ca/cppa/menu.htm](http://www.dfo-mpo.gc.ca/cppa/menu.htm)).

Canada and other nations in the international community have increasingly recognised the importance of maintaining the full range of biological diversity in the management of biological resources. This evolving international conservation ethic is reflected in a number of international agreements to which Canada is a signatory, including the 1992 United Nations Convention on Biological Diversity ([www.biodiv.org](http://www.biodiv.org)), and the UN Food and Agriculture Organisation's Code of Conduct for Responsible Fishing ([www.fao.org/fi/agreem/codecond/codecon.asp](http://www.fao.org/fi/agreem/codecond/codecon.asp)). In salmon fisheries, "managing for biodiversity" generally means ensuring that harvest levels are not excessive for any significant stock. Fish from many different stocks return to their spawning grounds along common migratory paths (sockeye, pink and chum) or stay in the same marine nursery area (chinook and coho), so that they are often harvested together in mixed-stock fisheries. Due to differing stock productivities and run-sizes, stocks within a mixed-stock fishery usually can't sustain equal harvest levels.

The following sections describe specific initiatives undertaken by DFO to address the principles of the precautionary approach to fisheries and biodiversity considerations.

## **2.2 New Directions**

In October 1998, the Minister of Fisheries and Oceans presented a vision for the future of the fishery through the release of *A New Direction for Canada's Pacific Salmon Fisheries*. This paper sets out three key goals for the management of the salmon fisheries (Conservation, Sustainable Use and Improved Decision-Making) and a series of principles to guide the development of operational policy aimed at achieving these objectives.

A number of specific operational policy initiatives, based upon the principles in the New Directions document have followed, including a salmon allocation framework, a selective fishing protocol and discussion papers on the management of wild salmon stocks, the future of salmon

enhancement<sup>1</sup> and improved decision-making. Additional policy papers and further reform of the salmon management structure are expected to follow under the New Directions umbrella.

Salmon management programs in 2003 (and future years) will continue to be guided by these policy initiatives. A synopsis of key policies and policy initiatives is outlined below. Further details are available at the websites identified.

### **2.3 An Allocation Policy for Pacific Salmon**

This policy clarifies the principles that apply to the sharing of harvests and harvesting opportunities between First Nations, commercial and recreational harvesters. The policy confirms that conservation is the primary objective in managing the resource and that conservation will not be compromised to achieve any salmon allocation target. The policy further confirms that after conservation needs are met First Nations food, social and ceremonial (FSC) requirements and treaty obligations have first priority in the allocation of any harvestable surpluses. Finally, the policy outlines guidelines with respect to the sharing of harvests between recreational and commercial fisheries and within commercial fisheries between different gear types.

The allocation policy is an important input in the development of annual pre-season salmon fishing plans and an important guide to in-season implementation of fishing plans. Further information on *An Allocation Policy for Pacific Salmon* can be found on-line at [www-comm.pac.dfo-mpo.gc.ca/english/allocation/allocation\\_form.htm](http://www-comm.pac.dfo-mpo.gc.ca/english/allocation/allocation_form.htm). The application of the allocation principles laid out in this policy document is described in Section 4.2, Sector Allocation Guidelines.

### **2.4 Consultation and Improved Decision-Making**

In June 2000 the Department publicly released a comprehensive proposal to change and improve the advisory system used in the Pacific salmon fishery. Three key processes will be established through the Improved Decision-Making initiative: Salmon Harvest Management Advisory Committee, Pacific Fisheries Allocation and Licensing Board, and Policy Forums. Throughout 2000 and 2001 broad public consultations on these proposed improvements were facilitated by the Institute for Dispute Resolution (IDR) of the University of Victoria. A final report was received from the Institute in May 2001 that generally endorses the Department's proposals and provides 67 specific recommendations with respect to implementing the new advisory system. All of the Institute's recommendations are being carefully reviewed with a view to implementing the new advisory system in the near future.

In keeping with the Institute's recommendations, a Consultation Secretariat has already been established to improve the flow of information between stakeholders and the Department. Up-to-date information on ongoing consultations can be found on the Secretariat's website at [www-comm.pac.dfo-mpo.gc.ca/english/database/Consult.htm](http://www-comm.pac.dfo-mpo.gc.ca/english/database/Consult.htm). The Department's discussion paper on

---

<sup>1</sup> The use of hatcheries, spawning channels, lake fertilization, habitat restoration, etc. to increase the survival rate or production of salmon at some stage of its life.

proposed changes and the IDR final report and recommendations can be found on-line at [www-comm.pac.dfo-mpo.gc.ca/english/consult/decision.htm](http://www-comm.pac.dfo-mpo.gc.ca/english/consult/decision.htm).

Consultative processes have been developed specifically for Taku River stakeholders and are explained below.

#### **2.4.1 Taku River Tlingit First Nation: AFS Consultation**

Consultations with the Taku River Tlingit First Nation (TRTFN) relating to the Aboriginal Fisheries Strategy occur throughout the year. Meetings are generally arranged by the DFO AFS Coordinator. Results of these consultations are contained within a multi-year DFO/TRTFN Fisheries Agreement. The Agreement details fish management and stock assessment programs, enforcement protocols, communal and commercial licences, selective fishing, as well as the First Nation fishery and communal licence provisions. The TRTFN also participates actively in the Taku River Salmon Management Committee described below. The AFS agreement documents, as well records of consultation sessions and progress on action items, are maintained by the AFS Coordinator.

#### **2.4.2 Taku River Salmon Management Committee**

The Taku River Salmon Management Committee is chaired by the DFO Yukon/ Transboundary Area Director and is comprised of representatives with interest in Taku River salmon resources, specifically the TRTFN, commercial fishers, and recreational fishers. Names and phone numbers of committee members are listed in Section 1 of this document. Membership was established by DFO through consultation with stakeholder groups which chose their representatives internally. The committee is also represented on the Transboundary Panel of the PST to ensure continuity and co-ordination in domestic and international discussions and decisions. The committee meets at least twice annually to develop recommendations pertaining to management plans, conduct post-season reviews, and address issues such as licensing, allocations, licence conditions, etc. Records of meetings and decisions are maintained by the committee chair.

#### **2.4.3 Pacific Salmon Treaty (PST) Transboundary Panel**

One of the arrangements reached in 1999 under the PST was the creation of a Transboundary Panel which began meeting bilaterally in late 1999. The Panel provides a forum for Canada/U.S. consultations. Membership on the Canadian section of the Panel is appointed by the Minister, and includes two individuals with Taku River interests (see Section 1 of this document or the PSC web site at:

[www.psc.org/Index.htm](http://www.psc.org/Index.htm)

In-season management protocols are, where possible, set in advance of the impending season either in discussions of the Transboundary Technical Committee or the Transboundary Panel. The Technical Committee usually meets three times annually and the Transboundary Panel is tentatively scheduled to meet at least on a biannual basis (generally in conjunction with Pacific Salmon Commission meetings) to examine stock status and review other information relevant to

the Transboundary rivers. Records are kept by the Panel and Technical Committee chairs and/or by the Pacific Salmon Commission.

## **2.5 Wild Salmon Policy**

In March 2000, the Department publicly proposed six principles to guide the conservation management of the Pacific salmon resource. This Wild Salmon Policy Discussion Paper aimed at clarifying how the Department intended to achieve its conservation goals for Pacific salmon and how it intended to move towards a more precautionary and ecosystem-based management approach. The principles called for the aggregation of local stocks into conservation units and the determination of minimum and target levels of abundance for these units (i.e. biological reference points) to guide management of the resource. The discussion paper is available on-line at [www-comm.pac.dfo-mpo.gc.ca/wsp-sep-consult/default.htm](http://www-comm.pac.dfo-mpo.gc.ca/wsp-sep-consult/default.htm).

Between April and November 2000 numerous public meetings were held throughout Pacific Region<sup>2</sup> to introduce the proposed policy, clarify its intent and explore its potential implications for fisheries and stock management. As a result of these consultations and the input received, the paper is under revision. After this time, further work on the development of operating guidelines will be required. This work will be assisted by extensive public consultations.

## **2.6 Selective Fishing Policy**

Since 1998, "selective fishing" (defined as the ability to avoid known, non-target species and stocks or, if encountered, to release them alive and unharmed) has become a cornerstone in Canada's Pacific fisheries. In the Pacific salmon fishery this has involved significant financial support for the development and testing of new more selective fishing gear and methods and the provision of specific incentives for more selective fishing. In addition, in January 2001 the Department released a *Policy on Selective Fishing in Canada's Pacific Fisheries*. A key element of this policy includes the establishment, in consultation with harvesters, of selective fishing standards and implementation action plans by January 2003. The policy also indicates that where the established standards are not achieved within the prescribed time lines fishing opportunities will be curtailed.

The Canadian commercial fishing sector has responded positively to this growing conservation consciousness by developing its own Canadian Code of Conduct for Responsible Fishing Operations. Over 80% of Canada's fishing organisations have signed on and ratified the Code that is overseen by a Responsible Fishing Board. Similarly, the recreational sector in the Pacific Region, through the Sports Fishing Advisory Board, recently developed a Code of Conduct for recreational anglers. First Nations have also embraced the principles of selective fishing by adopting more selective fishing gear, as often these types of gear reflect a traditional way of fishing for many First Nations.

Additional information on *A Policy for Selective Fishing in Canada's Pacific Fisheries* can be found at [www-comm.pac.dfo-mpo.gc.ca/english/selective/default.htm](http://www-comm.pac.dfo-mpo.gc.ca/english/selective/default.htm)

---

<sup>2</sup> Consultations with Taku fishers took place during the November 2000 Taku River Salmon Management Committee meeting in Atlin, B.C.

## 2.7 First Nations and Canada's Fisheries Framework

First Nations have always been an integral part of the management and harvest regimes of Pacific Region fishery resources. The Government of Canada's legal and policy frameworks identify a special obligation to provide First Nations the opportunity to harvest fish for FSC purposes on a priority basis.

To facilitate the policy aspect of the obligation, the Aboriginal Fisheries Strategy (AFS) was implemented in 1992. The AFS set out policies to ensure priority access to First Nations not only for food, but also for ceremonial and social purposes. The AFS also provided for an increased First Nations role in the management of their fisheries (i.e. biologists to assist in fishery planning, catch monitors and guardians). It has further provided for increased economic development opportunities in the form of commercial licences retired from the commercial fishery and through "pilot sale" fishery arrangements in the key locations (lower Fraser River, Somass River, and the Skeena River). Provided a Pilot Sales Agreement is in place, First Nations can sell a portion of their harvest. The agreements specify an allocation, catch monitoring provisions, a planning process, specific licence conditions, and an enforcement protocol.

The legal framework consists of two primary components: a constitutional mandate and a series of high profile court decisions, the most prominent of these being the 1990 Supreme Court of Canada ruling in *R. v. Sparrow*. The decision clearly established that the First Nations' right to fish for FSC purposes exists, that the right is held communally and that the right to fish can only be infringed with appropriate justification (e.g. conservation concerns). The text of Supreme Court rulings is available at [www.lexum.umontreal.ca/csc-scc/en/](http://www.lexum.umontreal.ca/csc-scc/en/).

More information about AFS, including resulting agreements, is available on-line at [www.pac.dfo-mpo.gc.ca/ops/fm/AFS/](http://www.pac.dfo-mpo.gc.ca/ops/fm/AFS/).

## 2.8 Pacific Salmon Treaty

In March 1985, the United States and Canada agreed to co-operate in the management, research and enhancement of Pacific salmon stocks of mutual concern by ratifying the Pacific Salmon Treaty (PST) ([www.psc.org/treaty/treaty.htm](http://www.psc.org/treaty/treaty.htm)). In fulfilling these obligations, both countries agreed to take into account the desirability in most cases of reducing interceptions, avoiding undue disruptions of existing fisheries as well as annual variations in abundance of the stocks.

Under the Treaty, the Pacific Salmon Commission (PSC) provides a forum for resolving salmon allocations in fisheries where salmon of one country are harvested by fishers of the other country. The allocation arrangements, which were revised in 1999, are imbedded in Annex IV of the Treaty.

Additional background information, news releases and in-season information relating to the Transboundary Panel and the PST can be viewed online at [www.psc.org](http://www.psc.org) and on the DFO website at [www.pac.dfo-mpo.gc.ca/ops/fm/Salmon/policy.htm#one](http://www.pac.dfo-mpo.gc.ca/ops/fm/Salmon/policy.htm#one).

## 2.9 Research

Research on B.C. salmon stocks is being conducted across a wide range of activities by DFO Science Branch. Areas of research are being directed to achieve a better understanding of salmon habitat and the impact of natural and manmade events and to assess the abundance of stocks and forecast returns for the upcoming year.

Activities are summarised in scientific papers that are peer reviewed through the Pacific Scientific Advice Review Committee (PSARC) and forwarded for review and adoption by DFO through the Resource Management Executive Committee. Additional information and PSARC reports are available at [www.pac.dfo-mpo.gc.ca/sci/english/psarc/](http://www.pac.dfo-mpo.gc.ca/sci/english/psarc/).

## 2.10 Fishery Monitoring Programs

There is a requirement to develop selective and sustainable fisheries through partnership and co-management arrangements with client groups and stakeholders. Monitoring programs will continue in 2003 to assist in meeting conservation objectives. The programs will closely track the catch of both target species and encounters with non-target species. These programs will include a variety of measures such as mandatory logbook program, in-season phone-in and postseason mail-in catch reporting programs, and on-grounds observer programs.

Over the next year, a comprehensive and detailed review of present fishery monitoring and catch reporting programs in all fisheries will be undertaken by the Department in consultation with First Nations and with recreational and commercial stakeholders. The intention of this review is to identify deficiencies with the present systems and necessary improvements in order to better meet the needs of the resource, the public and stakeholders. Action plans and schedules for any necessary changes to salmon fishery monitoring and reporting systems and requirements are expected prior to the 2003 fishery. The Fishery Monitoring and Catch Reporting Framework that will guide this review can be found online at [www-comm.pac.dfo-mpo.gc.ca/english/database/Fisheries%20Management/ReportingFramework/default.htm](http://www-comm.pac.dfo-mpo.gc.ca/english/database/Fisheries%20Management/ReportingFramework/default.htm)

## 3 OBJECTIVES

### 3.1 Conservation Objectives

**Conservation of Pacific salmon is the primary objective and will take precedence in managing the resource.**

The primary fisheries management objective of the Department is that of conservation of Canada's fish stocks. This could include determining the total allowable catch and acceptable harvesting methods, as well as setting the thresholds that will determine when conservation standards have not been met. Managing for conservation also means incorporating a precautionary approach. Harvest of any natural resource involves some level of risk and fishery management plans will need to assess and consider risk in their development. Management measures are directed such that fisheries will be conducted in a risk averse and sustainable way.

Regular monitoring of fisheries, stock assessment and the use of selective fishing methods ensure that healthy stock levels are maintained.

Nevertheless, there are situations that result in stock levels dropping below acceptable levels. In these cases, specific conservation objectives are identified. The conservation objective for a stock of concern must be considered, not only in the context of directed fisheries but also in the planning of fisheries where there will be a very low encounter rate or by-catch of the stock of concern. The objective of identifying a specific stock of concern is to take actions required to reduce the harvest rate to increase the returns to the spawning grounds.

Conservation objectives are expressed in a number of ways including exploitation rate ceilings and ranges or spawning escapement goals. Each of these is a parameter against which management actions can be evaluated. The exploitation rate ceiling may be very low (often less than 10%) which is applied to small stocks or stock aggregates in a state of significant decline or stocks not responding to rebuilding efforts. By comparison, the exploitation rate for stocks or stock aggregates considered to be in a healthy state can be as high as 70% (e.g. some Fraser sockeye stock aggregates). Exploitation rate levels on stocks or stock aggregates thought to be below potential but that are showing increased productivity vary depending on the circumstances. Minimum spawning escapement goals may also be set for a stock or stock grouping in order meet conservation objectives. Another goal may be the setting of spawning escapement goals that provide for maximum harvestable surplus. A goal of this type would generally be significantly larger than one set only to achieve a minimum conservation requirement.

Conservation objectives for key stocks or stock aggregates will be determined pre-season, where appropriate. For some stocks of concern, such as Rivers and Smith Inlet sockeye, management actions are designed to minimise mortalities without specifically determining an exploitation rate ceiling.

In-season and postseason evaluation programs are established to determine whether goals are being achieved.

The cornerstone of the fishing arrangements negotiated in 1999 under the Pacific Salmon Treaty is abundance-based management. This approach means resource conservation is paramount and harvesting will fluctuate according to actual abundance rather than to pre-set levels. On the Taku River an abundance-based management regime for sockeye salmon has been in place since 1984. Similar regimes are being developed for both coho and chinook salmon.

### **3.2 First Nations Fisheries Objectives**

**The objective is to manage fisheries in recognition of the Section 35, constitutional priority of the First Nations fishery.**

Ensure that, subject to conservation needs, first priority is afforded to First Nations to provide opportunities to harvest fish for FSC purposes.

### 3.3 International Objectives

**The objective is to manage Canadian treaty fisheries to ensure that obligations within the PST are achieved.**

Canada/ U.S. provisions for Transboundary rivers established in the 1999 revisions to the Pacific Salmon Treaty include:

- a) Development of co-operative abundance based management regimes for coho, sockeye and chinook for all three Transboundary rivers (Stikine, Taku and Alsek) by May 2004.
- b) Creation of a Transboundary Rivers Panel to address issues specific to these drainages. The Canadian section of the Panel includes two members with direct linkages to Taku interests.

Additional provisions for the Taku include specific harvest sharing provisions for coho salmon and wild and enhanced sockeye salmon, and continuation of the joint sockeye enhancement program. In addition, there is potential for directed chinook salmon fisheries by mutual agreement after an acceptable management regime has been developed. Specific allocation arrangements are identified under Section 4: Decision Guidelines and Specific Management Measures.

### 3.4 Domestic Allocation Objectives

**The objective is to manage fisheries in a manner that is consistent with *An Allocation Policy for Pacific Salmon* and the 2003 Pacific Salmon Allocation Implementation Plan.**

*An Allocation Policy for Pacific Salmon* can be found on-line at [www-comm.pac.dfo-mpo.gc.ca/english/allocation/allocation\\_form.htm](http://www-comm.pac.dfo-mpo.gc.ca/english/allocation/allocation_form.htm).

Fishery summaries will be available postseason which will be used to determine if allocation policies have been adhered to.

### 3.5 Enforcement Objectives

**The objective is to ensure compliance with acts and regulations associated with the management of Pacific salmon.**

The *Fisheries Act* is the main legislative guide in British Columbia. The Conservation and Protection (C&P) program of Fisheries and Oceans Canada is responsible for the compliance of this Act in relation to anadromous fish in both lakes and river systems, and to ensure compliance with habitat issues in all waters frequented by fish. There are numerous other duties fishery officers perform as well. These may include office administration, participating in public events that promote greater stewardship of the resource, keeping the public informed of regulation changes, the opening or closure of various fisheries, the preparation of legal documents for court,

patrolling the rivers, roads and industrial areas to determine if any habitat or fishery violations have occurred, and on a less regular basis, to sell fishing licences and collect statistical data for other sectors if and when time permits.

At the end of each season, statistics are compiled on the numbers of checks conducted from various platforms (water, vehicle and foot), the number of charges resulting from these checks and others. Prior to 2003, C&P used this information to evaluate whether enforcement priorities were met and whether various enforcement activities were effective. This data, although still collected, fails to account for variables such as changes in human resources. Therefore the numbers can go up or down but this holds little relevance to whether or not program objectives are being met. As outlined below, in 2003 evaluations will be done on whether or not C&P meets the objectives outlined in each planned operation which are directly linked to the Area priority setting process.

### **3.5.1 Conservation and Protection Priorities for 2003**

Through consultation with DFO sectors, both regionally and area based, public meetings, and other sources of public input Yukon/ Transboundary Area C&P has established the following priorities for enforcement:

- Public Safety
- Stocks of Concern
- Habitat
- Effective Program Delivery

#### *Public Safety*

Through other government programs such as Agri-food Canada and the Province of British Columbia's Fish Inspection processes are in place that ensure fish entering commercial markets is fit for human consumption. DFO's Fishery Officer's role is to ensure that only fish caught in commercial fisheries enters commercial markets as fish caught in other fisheries may not be cared for to the same standard.

#### *Stocks of Concern*

Through principles of conservation, C&P focuses efforts on stocks that are more at risk. The level of concern over a stock is first identified in pre-season forecasts. Throughout the season as fish return to terminal areas the level of concern may be elevated or reduced. The C&P program does pre-season planning based on this information, understanding that at any time the status of a stock may change and the C&P program must adjust to respond to those changes.

#### *Habitat*

Protection of habitat is a fundamental element in the conservation and protection of any fish stock. Habitat violations result in approximately 50% of all occurrences Yukon/ Transboundary Area C&P respond to. Habitat occurrences are not predictable and typically happen any time between February and October of any given year. Because of their unpredictable nature it makes

the planning of operations relating to commercial, aboriginal or recreational fisheries problematic as they can be disrupted at any time.

To address this issue Yukon/ Transboundary Area C&P has dedicated one Fishery Officer to deal solely with habitat related offences. This means that the remainder of the C&P staff can focus on sound operational plans related to the fisheries in the area.

### *Effective Program Delivery*

As a public funded program it is imperative that the program is run efficiently and effectively. Over the past 8 years the ability for C&P to continually patrol any one fishery has seriously been curtailed. C&P must now devise operational plans based on established priorities. This year C&P has identified some 42 individual fisheries-related issues throughout the Yukon/ Transboundary Area, ranked them according the priority, and devised individual operation plans to address each fishery. The result of this is effective delivery of the C&P program and maintaining support for other sectors such as Fish Management and Habitat Enhancement Branch.

More information on enforcement programs is available through the Internet at: [www.pac.dfo-mpo.gc.ca/ops/CP/Default.htm](http://www.pac.dfo-mpo.gc.ca/ops/CP/Default.htm).

## **4 DECISION GUIDELINES AND SPECIFIC MANAGEMENT MEASURES**

The decision guidelines are intended to provide interested stakeholders with a summary of the rationale behind management decisions, and to provide a clear outline of departmental responses to changing in-season information and conditions.

Draft decision guidelines have been reviewed in advisory meetings since December 2001, and much of the information is simply a brief summary of long-standing management practices. Also, these decision guidelines were specifically developed to capture the general management approach rather than the details of the 2003 season, with the intention of working towards multi-year management plans. Specific fishing plans for 2003 are described in sections 5, 6 and 7.

Section 4.1 sets the stage by outlining broad decision guidelines generally applicable to all fisheries. The remainder of this section describes conservation objectives and detailed descriptions of decision guidelines for key fisheries.

### **4.1 General Decision Guidelines**

#### **4.1.1 Background**

Fishing plans are developed during pre-season consultations to address the management objectives identified in Section 3, including the allocation of harvestable surpluses to different harvesters in accordance with the allocation policy. Pre-season fishing plans provide guidance for in-season management, but actual in-season management measures are also affected by:

Uncertain Forecasts - The forecast for any given stock, particularly in times of changing freshwater or ocean conditions, is highly uncertain. No amount of analysis can accurately and consistently forecast the return for a given year. However, estimates with reasonable bounds are produced for most major stocks. Pre-season allocation targets are developed for all species based on pre-season forecasts of abundance. Accordingly, management plans and decision guidelines have to be flexible enough to respond to a range of returns from well below forecast to well above forecast in order to approach the conservation targets.

Differences in Stock Strength - Different fish stocks may have different life cycles, different productivity, and are subject to different habitat and environmental conditions. For example, fish stocks may be very strong in the north and weak in the south. Achieving coast-wide allocations is difficult under these conditions.

Availability and timing of in-season information - In-season information becomes available on short notice and can result in dramatic shifts in fisheries (short notice closures or openings). Managing to achieve allocations with fluctuating information is problematic. Accordingly, fishing plans must give consideration to very short notice changes in run size estimates and provide clear guidelines for dealing with this changing information.

Highest priority fisheries occur last - The groups with the highest priority (i.e. First Nations) are often the last to have access to fish stocks due to geographic location. Many First Nations that depend on the fishery resource are often situated in terminal areas after commercial and recreational fisheries have had a potential to harvest the run. Decision guidelines must account for this feature to ensure that all objectives including conservation and domestic allocation priorities are achieved.

Mixed-Stock Fisheries – Many salmon fisheries are conducted in areas where numerous salmon stocks intermingle as they migrate to the spawning areas. There are situations where some of those stocks are threatened and require increased protection. Attempting to balance allocations can be difficult where there is a high degree of variability in the abundance of several stocks in a given fishing area.

Effort Uncertainty – When an opening is announced, in many cases it is not clear how many vessels will participate. This can be difficult when there is a small total allowable catch (TAC) for a given sector. There have been instances where a fishery has not occurred because of a limited TAC and an inability to limit the number of participants. Special initiatives are being developed in co-operation with harvesters to explore new management approaches which allow for access to a small TAC under uncertain conditions and/or provide for improved in-season assessment capabilities.

All of the above create challenges in achieving pre-season management targets, particularly escapement and allocation goals.

#### **4.1.2 Pre-season Decisions**

Many pre-season decisions are made during the development of fishing plans. Some are the result of rigorous, peer reviewed, scientific analysis while others are based on advice received

during consultations, review of the brood year escapement, and application of the allocation policy. Some of the considerations are as follows:

Escapement targets – Annual escapement targets are developed by DFO and technical committees for individual stocks or a group of stocks. The magnitude of the escapement goal may vary depending upon the total number of salmon returning for that stock or group of stocks. Escapement goals are set in order to meet a number of objectives including meeting conservation requirements and also in order to provide for reasonable amounts necessary for rebuilding depressed stocks. These escapement targets are reviewed during pre-season consultations. Escapement goals are important features for the initial development of fishing plans.

First Nations Food Social and Ceremonial Allocation – Expected First Nations FSC needs are required early in the process to facilitate the development of fishing plans and decision guidelines for other fisheries.

#### **4.1.3 In-season Decisions**

In-season decision points vary from fishery to fishery depending on type, availability and quality of in-season information and the established advisory, consultation and decision-making processes.

For some fisheries, there are lengthy time series of data, ongoing comparable test fisheries and extensive analytical models to inform in-season run size estimates. For other smaller fisheries, the only data available to compile a run size forecast may be a time series of catch and escapement data. In many systems, escapement results are used to guide in-season management.

Early in the season, fishing activity will proceed cautiously and be guided by the pre-season forecast. However, as the season progresses, fishery management decisions will be guided by the in-season run size and escapement estimates. Decision guidelines will indicate trigger points at which fisheries will proceed, be adjusted or closed.

#### **4.1.4 Allocation**

*An Allocation Policy for Pacific Salmon* clarifies the general approach for managing fisheries, but does not provide detailed guidance for specific in-season decisions. To address this, decision guidelines are being developed to show more transparently how the policy will be implemented in specific circumstances.

The allocation policy is based upon a hierarchy of priorities. At low run sizes, the only fisheries that will be operating are First Nations' fisheries for FSC purposes. At increasing run sizes, recreational and commercial fisheries will also start with the extent of the fishery defined by a number of factors and priorities. For commercial harvest, fishing opportunities by gear type may change in-season (increase or reduce) to better reflect coast-wide sharing objectives. The general approach is described in Table 1. Specific descriptions of the different fisheries follow in the next sections.

**Table 1. Allocation Guidelines**

Low Abundance		High Abundance			
<b>First Nations (FSC)</b>	Non-retention / closed	By-catch Retention	Directed	Directed	Directed
<b>Recreational</b>	Non-retention / closed	Non-retention	By-catch Retention	Directed	Directed
<b>Commercial</b>	Non-retention / closed	Non-retention	By-catch Retention	By-catch Retention	Directed

**NOTE:** This table generally describes how First Nations, recreational and commercial fisheries might be undertaken across a range of returns. It does not imply that specific management actions for all stocks exactly follow these guidelines, but rather is an attempt to depict the broad approach. **Directed:** Targeting a specific timing group or stock of salmon. **Retention:** Incidental by-catch harvested during a directed fishery on another stock timing group can be retained. **Non-retention:** Incidental by-catch harvested during a directed fishery on another stock timing group, which must be released with the least possible harm.

#### 4.1.5 First Nations – Food, Social and Ceremonial

The allocation policy provides that after conservation needs are met, First Nations FSC requirements and treaty obligations to First Nations have first priority in salmon allocation. This approach is consistent with a number of court rulings on the issue of allocation. Accordingly decision guidelines will establish how the priority for First Nations will be considered.

While this opportunity will be provided on a priority basis, it does not mean that First Nations' fisheries needs must be fully achieved before other fisheries can proceed. For example, many First Nations conduct their fishery in terminal areas while other fisheries are undertaken in marine areas or approach areas. Generally speaking, decision guidelines will reflect the fact that at low run sizes, First Nations' fisheries for FSC requirements or treaty obligations will be the only harvest considered. However, at run sizes that are significantly larger than escapement goals, recreational and commercial fisheries may proceed in advance of First Nations' fisheries. The general guideline is that the fishing plan must adequately provide for the First Nations FSC harvests that will occur further along the migration route.

#### 4.1.6 Recreational Fisheries

Recreational fishing provides a significant social and economic benefit to the province of B.C. The allocation policy provides for a priority to directed fisheries for chinook and coho salmon and predictable and stable fishing opportunities for sockeye, pink and chum salmon for recreational anglers once conservation and First Nations FSC needs are addressed. If conservation objectives cannot be attained, then decision guidelines will generally indicate a closure or non-retention regulation for the recreational fishery. If forecast levels are inadequate to address all First Nations needs, decision guidelines will generally indicate that the fishery may proceed with a non-retention restriction in place.

The fishing plan will generally provide for full daily and possession limits and a removal of species specific restrictions prior to a directed commercial fishery on chinook and coho. Decision

guidelines may also identify considerations for increasing/decreasing the area of the fishery, modifying dates or changing daily limits.

#### **4.1.7 Commercial Fisheries**

Commercial fisheries comprise the largest harvester of the salmon resource. The allocation policy provides for at least 95% of the combined commercial and recreational sockeye, pink and chum harvest to be allocated to the commercial sector. Commercial harvest of chinook and coho salmon will occur when abundance permits. This plan also identifies commercial allocation targets by area by species based on anticipated opportunities to achieve the overall allocation objective (see Appendix 1). In addition to addressing conservation and domestic allocation objectives, decision guidelines will also give consideration to sharing arrangements between commercial gear types.

Decision guidelines will generally provide for low impact fisheries to fish prior to those having a higher impact. This is particularly so at low run sizes or at the start of the run when the run sizes are uncertain or when stocks of concern have peaked but continue to migrate through an area.

Decision guidelines will also consider when one commercial gear type is unlikely to achieve its allocation. The usual approach will be that the same gear type, but in a different area, will be provided opportunities to harvest the uncaught balance in order to achieve the coast-wide sharing arrangements as set out in the allocation policy. If however, the balance cannot be caught by a similar gear type, then the uncaught balance will be shared between groups that are able to harvest it.

The commercial fishery on the Taku system was established in 1979. Currently there are sixteen licences available to fish commercially, including four First Nation licences held under an Aboriginal Fisheries Strategy (AFS) agreement. Gear consists of drift and set gill nets.

The Taku River commercial fishing area extends from fishery boundary signs located approximately 50 meters upstream of the international border, upstream to boundary signs located near a geological feature locally known as Yellow Bluff, approximately 18 kilometres upstream from the international border. The area does not include Flannigan's Slough and South Fork Lake and outlet channel, which are marked with fishing boundary signs.

Landing stations have been constructed and operated in the lower river to handle commercially caught salmon. Fish are then transported to commercial buyers via air to Atlin, B.C. or by boat to Juneau, Alaska. Marketed products include fresh frozen, fresh and smoked salmon.

The commercial fishery usually commences the second or third week of June for sockeye and continues through September.

#### **4.1.8 Excess Salmon to Spawning Requirements**

Excess Salmon to Spawning Requirements (ESSR) fisheries may occur when salmon stocks return to a system after passing through the various fisheries and area at a level in excess of their required natural or hatchery spawning capacity. The current ESSR policy indicates salmon

fisheries are managed with the objective of minimising surpluses to both naturally spawning stocks and returns to federal enhancement facilities.

However, uncertain forecasts, inaccurate in-season run size estimates, and mixed-stock concerns can result in escapement to terminal areas that exceeds targets. This in turn means that there will be either escapement in excess of the target or ESSR opportunities. The ESSR policy identifies that commercial and/or recreational fishing opportunities should first be exhausted before considering these fisheries (with a few exceptions).

The ESSR policy provides for any surplus to address outstanding FSC needs of local or more distant First Nations' communities. After outstanding First Nations needs have been addressed, the surplus is offered to First Nations who live in the area. These fish may be sold subject to certain harvest, stock assessment and reporting requirements. If sold, First Nations direct portions of the revenues from sale of fish towards the cost of fisheries activities such as enhancement, stock restoration, habitat restoration, fishery or habitat management, or research, as agreed to by DFO. If the First Nations decline the offer to harvest the identified surpluses, the fish will be offered for sale through public tender, first to a local enhancement/stewardship group to put the profits to address local enhancement objectives. If there are no First Nations or enhancement groups, the ESSR is offered for general tender with no conditions about how the profits should be directed.

There have been concerns that in some cases ESSR fisheries have been planned without consideration for commercial fisheries. In most cases, decision guidelines for individual fisheries will specifically identify the circumstances under which ESSR fisheries will be undertaken. Where there are not specific guidelines in place, and there is not specific policy direction, all attempts will be made to harvest surplus stocks in regular commercial fisheries. Where co-migrating stocks of concern or other factors result in a surplus, the policy as set out above will be applied.

#### **4.1.9 Selective Fisheries**

DFO is committed to ensure that all gear operates as selectively as possible. Selective fishing includes the avoidance of stocks of concern or, if they cannot be avoided, providing for release unharmed. Gear that is less selective than others may find opportunities to fish reduced to protect stocks of concern. Decision guidelines will provide increased opportunity to gear that can reduce impacts on these stocks.

#### **4.1.10 By-catch management**

The allocation policy describes priorities and considerations for the directed harvest of target stocks. However, these opportunities may have to be constrained due to conservation concerns for species, stocks or stock aggregates also encountered during these directed fisheries (see next section). Some by-catch cannot be prevented, and fishing plans are designed to be consistent with existing policies and to keep exploitation rates on stocks of concern within the limits described in the conservation objectives. The Department does not allocate by-catch or portions of the acceptable exploitation rate on stocks of concern.

## **4.2 Chinook Decision Guidelines**

### **4.2.1 Background**

There is interest in developing new directed fisheries both in Canada and the U.S. for Taku chinook salmon. Under the PST, the parties have agreed not to implement new directed fisheries without the consent of both parties. The development of an acceptable abundance-based management regime for chinook salmon is a critical prerequisite to the opening of new fisheries. To this end, joint Canadian and U.S. stock assessment programs will be conducted in order to continue development of a management system similar to that of sockeye salmon (which makes use of mark-recapture estimates for in-season forecasting). In addition, a coded-wire tagging program will also be conducted to obtain information on smolt production, ocean survival, and marine distribution and harvest.

### **4.2.2 Pre-season Decisions**

Chinook salmon may be taken in the commercial fishery as an incidental catch in the directed sockeye fishery.

### **4.2.3 In-season Decisions**

Extensions to sockeye openings will be granted only if chinook by-catch is relatively low.

### **4.2.4 Chinook Constraints**

The following arrangements will apply to the Taku River chinook for the 1999 to 2008 period as outlined in the Transboundary Annex of Pacific Salmon Treaty that was re-negotiated in 1999.

- a) Both Parties shall take the appropriate management action to ensure that the necessary escapement goals for chinook salmon bound for the Canadian portions of the Taku River are achieved.
- b) The Parties agree that new fisheries on Taku River chinook salmon will not be developed without the consent of both Parties. Management of new directed fisheries will be abundance-based through an approach to be developed by the Committee no later than May 01, 2004. The Parties agree to implement assessment programs in support of the development of an abundance-based management regime.
- c) The Parties shall review an appropriate MSY escapement goal for Taku River chinook by May 1999 and thereafter establish a new goal as soon as practicable.

## **4.3 Prospects for 2003 - Chinook**

The principal brood years contributing to the 2003 chinook run are 1997, 1998 and 1999. Brood year escapements varied greatly, ranging from 18,000 to 115,000 large chinook (typically 3-ocean age and older). Only the 1998 brood year escapement fell within the escapement goal range of 30,000-50,000 large fish. The preliminary forecast for large chinook salmon in 2003 is

based on sibling returns and is 43,000 fish (range 26,000 to 61,000). This is a forecast for spawning escapement and assumes exploitation rates consistent with those observed in previous years. An escapement of 43,000 fish is below-average, but well within the target range. Given this forecast, it is likely that the commercial catch in the Taku River will be less than 2,000 large fish for the season.

The Communal Fishing Licence for the TRTFN allows for a harvest of up to 500 chinook salmon. Pre-season consultations suggest that effort will be redirected from coho to chinook and that the full allocation will be taken in 2003. The 1993-2002 average catch in the First Nation fishery is less than 100 chinook salmon.

#### **4.4 Sockeye Decision Guidelines**

##### **4.4.1 Background**

Utilization of Taku River sockeye salmon in the U.S. occurs in commercial gill net fisheries located near the mouth of the Taku River (District 111), and in an in-river personal use fishery. Commercial fisheries located in marine waters outside of District 111 also harvest Taku River sockeye at an assumed interception rate of 5%. In the Canadian portion of the drainage, harvest of sockeye occurs in commercial and First Nation fisheries near the international border.

The current Taku River sockeye in-river stock assessment program includes: the joint Canada/U.S. mark-recapture project, which involves tag application at Canyon Island just downstream of the border, and tag recovery in the commercial fishery; enumeration weirs at Little Trapper Lake, Tatsamenie Lake, and Kuthai Lake; age-length-sex-otolith sampling at various sites; and enhancement assessment at Little Trapper and Tatsamenie lakes.

The interim sockeye salmon escapement goal for the drainage is 71,000 to 80,000 fish. Escapement estimates, derived from tagging studies ongoing since the PST took effect in 1985, have either fallen within or exceeded this target range (estimates range from 71,086 in 1997 to 137,514 in 1992). The preliminary estimate of the 2002 Taku River terminal sockeye run size<sup>3</sup> (excluding enhanced fish)<sup>4</sup> is 257,338 fish of which 116,626 were caught in terminal U.S. gill net fisheries, 31,160 were harvested in Canadian fisheries (including 518 in a test fishery) and 109,035 escaped to spawning areas. The terminal run size was 3% above the previous ten-year average; the U.S. catch was less than 1% below-average, the Canadian catch was 3% above-average while the escapement was 6% above-average.

---

<sup>3</sup> The terminal run size does not include estimates of U.S. marine catches outside the District 111 drift gill net fisheries. Actual catches of Taku-origin stocks in these outside fisheries are unknown; Canada assumes a 5% harvest rate occurs in these fisheries, i.e. the terminal run represents 95% of the total run, whereas the U.S. assumes that the catch amounts to 10% of the D-111 catch of Taku sockeye.

<sup>4</sup> The preliminary estimate of the 2002 terminal run size of enhanced Taku River sockeye is 1,178 sockeye. Of these fish, it is estimated that 302 spawned, 48 were harvested in Canadian fisheries, and 827 were harvested in U.S. fisheries.

#### **4.4.2 Sockeye Pre-season Decisions**

The date of first opening is determined in consultation with the Taku River Salmon Management Committee and with the U.S. through the Transboundary Technical Committee. The pre-season forecast is used to set duration of openings until reliable in-season run abundance estimates are available (generally after the second opening).

#### **4.4.3 Sockeye In-season Decisions**

For sockeye salmon, in-season management relies on weekly forecasts of the total run size based on estimates of cumulative in-river abundance, provided from the joint Canada/U.S. mark-recapture program at Canyon Island, added to marine catches lagged by one week to allow for the time it takes the fish to migrate from the marine fisheries into the river. This sum is then apportioned by historical in-river run timing data to provide a seasonal projection of run strength. The seasonal total allowable catch (TAC) is then calculated by subtracting the escapement target from the projected total run size. The TAC is apportioned by the allocations set out in the PST to give a projection of the Canadian allowable harvest for the season. Historical timing data from the Canadian fishery is applied to provide weekly guideline harvest levels for management.

The following decision framework was developed in consultation with the Taku Salmon Management Committee.

**Table 2. Key Decision Points for Taku River Sockeye**

Zone	Escapement Projection	Fishery	Guideline Harvest	Anticipated Management Action
Red	<50,000	Aboriginal Commercial Recreational	0 0 0	Closure considered Closed Closed
Yellow	50,000 – 71,000	Aboriginal Commercial Recreational	0-2,000 0 0	Possible time restrictions Closed Closed
Green	71-000 – 100,000	Aboriginal Commercial  Recreational	2,000 18% of TAC  none specified	Unrestricted Normal 2-3 day fishery with possible extensions Restrictions as per BC Freshwater Salmon Supplement 2003/2004
Green	>100,000	Aboriginal Commercial  Recreational	2,000 as per above but increase to 20% for portion of projected in-river escapement >100,000  none specified	Unrestricted Normal 2-3 day fishery with possible extensions   Restrictions as per BC Freshwater Salmon Supplement 2003/2004

#### 4.4.4 Sockeye Constraints

The following arrangements will apply to the Taku River sockeye for the 1999 to 2008 period as outlined in the Transboundary Annex of Pacific Salmon Treaty that was re-negotiated in 1999:

- a) Except as noted below, Canada shall harvest no more than 18% of the TAC of the wild sockeye salmon originating in the Canadian portion of the Taku River each year;
- b) If the projected in-river escapement is greater than 100,000 sockeye, Canada may, in addition, harvest 20% of the projected in-river escapement above 100,000 sockeye;

- c) The Parties agree to manage the returns of Taku River sockeye to ensure that each country obtains catches in their existing fisheries equivalent to each country's share of wild sockeye and a 50% share of enhanced sockeye;
- d) The Parties agree to continue the existing joint Taku enhancement program designed to produce annually 100,000 returning sockeye salmon.

The management co-ordination between U.S. and Canadian fishery managers will involve weekly conferences between designated members or alternates. ADF&G and DFO managers may implement special restrictions to ensure Tatsamenie escapements are sufficient to meet brood stock requirements. The agencies have agreed to co-ordinate management of their respective fisheries to increase the likelihood that Tatsamenie escapements are adequate to achieve brood stock needs.

#### **4.4.5 Prospects for 2003 - Sockeye**

The DFO pre-season forecast for the 2003 Taku sockeye salmon total run is approximately 304,000 fish and constitutes an above-average run size. In comparison, the recent 10-year average (1993-2002) estimated run size is 259,000 sockeye salmon. The 2003 forecast is the average of a sibling-based forecast of 350,900 sockeye, and a stock-recruitment based forecast of 256,700.

A pre-season expected run size of 302,000 sockeye salmon translates into a TAC of approximately 229,000 and a potential Canadian harvest of 41,000 sockeye (18% of the TAC). Accounting for the harvest levels identified in the TRTFN Communal Fishing Licence, 2,000 sockeye, this leaves a potential commercial harvest, according to pre-season estimates, of 39,000 sockeye. The 1993-2002 average commercial harvest is 30,700 sockeye.

In-season forecasts will be available in early July.

### **4.5 Coho Decision Guidelines**

#### **4.5.1 Background**

Coho salmon enter the Taku River in late July with the peak of the run arriving in mid to late August. The early portion of the return is subject to harvest in the sockeye fishery.

Estimated Taku River coho salmon above-border spawning escapements from 1993 to 2002 have averaged 86,052 fish (range 32,345 – 219,360), well above the interim goals set by U.S. (27,500 coho), and Canadian (35,000 coho) members of the Transboundary Technical Committee.

As with chinook, an abundance-based approach is being developed. The factors that influence ocean survival are poorly understood, and the phenomena are neither controllable nor currently predictable. The existing fixed minimum escapement management approach will continue to be developed through the use of in-season abundance estimates. This approach was demonstrated to be effective during the low returns experienced in 1997. In that year, in-season abundance and

preliminary escapement estimates indicated a return considerably below-average, with marine harvests only 14% of average. U.S. conservation efforts directed at the Taku Inlet gill net and the inside troll fisheries, as well as a reduced Canadian in-river fishery, resulted in a below-average exploitation rate (36.4%). The result was an escapement (32,300 fish), that was within the target range despite the relatively small total run size of 50,900 fish.

#### **4.5.2 Coho Pre-season Decisions**

The annual forecast for coho is used in the consideration of potential management actions required to achieve escapement targets.

#### **4.5.3 Coho In-season Decisions**

CPUE from the directed sockeye fishery, the U.S District 111 gill net fishery and Canyon Island fishwheels provides information on which to determine the duration of the first coho opening. In-season projections of the in-river run of coho salmon will also rely on the joint Canada/U.S. tagging program where population estimates will be expanded by historical run timing. CPUE and CWT recoveries from the Southeast Alaska troll fishery are additional indicators of Taku River coho run size that may be used for in-season management.

Fishing times in the First Nation fishery are only restricted if there is a conservation concern and only after actions have been taken in other fisheries. Normally the fishery is open 7 days a week. The main guiding factor in the First Nation fishery will be the allocations as specified in the Communal Fishing Licence of the TRTFN.

The following decision framework was developed in consultation with the Taku Salmon Management Committee.

**Table 3. Key Decision Points for Taku River Coho, commencing Week 34 (August 18)**

Zone	Escapement Projection	Fishery	Guideline Harvest	Anticipated Management Action
Red	<27,500	Aboriginal Commercial Recreational	0 0 0	Closure considered Closed Closed Test fishery only
Yellow	27,500 to 35,000	Aboriginal Commercial Recreational	750 <2,250 none specified	Unrestricted Normal 2-3 day fishery with possible extensions Restrictions as per BC Freshwater Salmon Supplement 2003/2004
Green	27,500 to 50,000	Aboriginal Commercial Recreational	750 <2,250 none specified	Unrestricted Normal 2-3 day fishery with possible extensions Restrictions as per BC Freshwater Salmon Supplement 2003/2004
	50,000 to 60,000	Aboriginal Commercial Recreational	750 <4,250 none specified	Unrestricted Normal 2-3 day fishery with possible extensions Restrictions as per BC Freshwater Salmon Supplement 2003/2004
	60,000 to 75,000	Aboriginal Commercial Recreational	750 <6,750 none specified	Unrestricted Normal 2-3 day fishery with possible extensions Restrictions as per BC Freshwater Salmon Supplement 2003/2004
	>75,000	Aboriginal Commercial Recreational	750 <9,250 none specified	Unrestricted Normal 2-3 day fishery with possible extensions Restrictions as per BC Freshwater Salmon Supplement 2003/2004

#### 4.5.4 Coho Constraints

The following arrangements will apply to the Taku River sockeye for the 1999 to 2008 period as outlined in the Transboundary Annex of Pacific Salmon Treaty that was re-negotiated in 1999:

- a) The Parties agree to develop and implement an abundance-based approach to managing coho salmon on the Taku River no later than May 1, 2004. The Parties

- commit to developing a revised MSY escapement goal to be implemented no later than May 1, 2004;
- b) Until a new abundance-based approach is developed, the management intent of the United States is to ensure a minimum above-border in-river run of 38,000 coho salmon, and the following arrangements will apply:
- i) No numerical limit on the Taku River coho catch will apply in Canada during the directed sockeye salmon fishery (through statistical week 33);
  - ii) If in-season projections of above-border run size are less than 50,000 coho salmon, a directed Canadian harvest of up to 3,000 coho salmon is allowed for assessment purposes as part of the joint Canada/US Taku River mark-recapture program;
  - iii) If in-season projections of above-border run size exceed 50,000 coho salmon, a directed Canadian harvest of 5,000 coho salmon is allowed;
  - iv) If in-season projections of above-border run size exceed 60,000 coho salmon, a directed Canadian harvest of 7,500 coho salmon is allowed;
  - v) If in-season projections of above border run size exceed 75,000 coho salmon, a directed Canadian harvest of 10,000 coho is allowed.

#### **4.5.5 Prospects for 2003 – Coho**

The estimated spawning escapements in the two primary brood years that will contribute to the year 2003 run were 60,800 fish in 1999, and 64,700 fish in 2000. These both exceeded the interim escapement goal range for Canadian-origin Taku coho of 27,500 to 35,000 fish. Taku coho salmon escapement has averaged approximately 86,000 over the 1993 to 2002 period.

Based on catch rates in the coded-wire-tagging program located on the lower Taku River an estimated 1.5 million coho smolt emigrated during the spring of 2002; these fish will be returning as adults in 2003. If the marine survival rate for these fish is similar to the recent 5-year average (10%), a run of 155,000 should be observed in 2003; if U.S exploitation rates are also average (39%), the border escapement should be over 90,000 fish.

The allowable Canadian catch is entirely dependent on in-season projections of the in-river run size; actual catches vary with factors such as market conditions. Although the obligation of the U.S. is to manage for at least 38,000 coho salmon into the Canadian section of the Taku River, the average in-river run over the past five years is approximately 110,000 fish. If the in-river run size in 2003 exceeds 75,000 coho salmon, this translates into a potential Canadian directed catch of 10,000 fish (from week 34 on). In addition, some incidental catch of coho salmon is expected prior to week 34; the five-year average catch through week 33 is approximately 1,400 fish. Therefore a total harvest of 11,400 coho salmon is possible in 2003. Up to 750 of these fish could be harvested by the TRTFN.

#### **4.6 Pink Salmon Decision Guidelines**

Pink salmon are caught incidentally during the sockeye fishery. It is expected that market conditions for Taku River pink salmon will continue to be poor in 2003. As a result, most of the catch will likely be released.

There is no program in place to estimate pink salmon border escapement or drainage-wide spawning escapement. However, since 1984 fixed-site CPUE data from fishwheels at Canyon Island has provided some indication of interannual variations in abundance. This is somewhat imprecise because catch rates can be affected by water levels.

Due in part to the two-year life cycle, pink salmon run sizes are often cyclical. Prior to 1994, odd-year escapements (based on Canyon Island fishwheel counts) appeared to be dominant. This changed in 1993 due to an escapement that was significantly lower than previous odd-year escapements. Recently odd- and even-year fishwheel counts have been comparable.

Pink salmon returning in 2003 will be the product of the 2001 escapement. Based on the Canyon Island fishwheel catch of 5,700 pink salmon, this is believed to have been below-average. The 1992-2000 average even-year Canyon Island fishwheel catch of pink salmon was 17,600 fish. Based on this, a below-average return is expected in 2003.

#### **4.7 Chum Salmon Decision Guidelines**

Fall chum salmon are caught incidentally during the coho fishery and the later part of the sockeye fishery. Due to the depressed state of Taku chum salmon stocks, fishers must release all chum salmon caught. Therefore, no harvest is expected.

As with pink salmon, there is no program in place to estimate border escapement or drainage-wide spawning escapement of chum salmon. Instead, there is reliance on catch data from both fishwheels and live-release gillnetting at Canyon Island to index interannual abundance. Catches in the 1980's and 1990's averaged about 840 and 415 fish respectively. These averages are influenced by major fluctuations; catches ranged from 80 fish in 1986 to 1,600 in 1987. From 2000 through 2002, the average catch was 293 chum salmon. With the exception of 1986, catches from 1985 to 1991 were high relative to recent catches.

Canyon Island fishwheels catches in 1998 and 1999 (179 and 164, respectively) suggest that the year 2003 parent year spawning escapements were poor. Consequently, a below-average to poor fall chum run is again expected in 2003.

### **5 2003 TAKU RIVER FIRST NATION FISHING PLAN**

Fishing times in the First Nation fishery are only restricted if there is a conservation concern and only after actions have been taken in other fisheries to conserve stocks of concern. Normally the fishery is open 7 days a week from April 1 to March 31. The main guiding factor in the First

Nation fishery will be the allocations as specified in the Communal Fishing Licence of the TRTFN, specifically 500 chinook, 2,000 sockeye and 750 coho salmon.

Catch monitoring in the First Nation fishery will be conducted by the TRTFN in conjunction with Fisheries and Oceans Canada. Catches will be collated by the TRTFN by fisher, species caught and hours fished and catch and effort data will be provided to the Department at least once per month. In consultation with the TRTFN, Conservation and Enforcement staff will assist the TRTFN in monitoring and enforcement in the First Nation fishery if and when required.

## **6 2003 TAKU RIVER COMMERCIAL FISHING PLAN**

The Canadian fishery will open 12:00 noon Sunday, June 15 for an initial 48-hour period to target early sockeye runs. Weekly TAC projections for sockeye salmon, as described in section 4.4 above, will be used to guide the management of the commercial fishery. Seasonal TAC projections for the commercial fishery will have allowances built in for escapement and First Nation fishing requirements. Run timing will be used to provide weekly guideline harvests in the fishery and the weekly fishing periods will be adjusted accordingly. It is anticipated that special restrictions will be required to address Tatsamenie sockeye concerns; these will likely occur during statistical weeks 31-33 (July 27-August 16). Management actions taken in Canada will be accompanied by similar restrictions in the U.S. District 111 fishery. Extensive in-season consultations between fishery managers of the two countries will occur to co-ordinate management as much as possible.

For coho salmon, the commercial fishery will be managed on the basis of in-river run strength within the overall Canadian harvest levels as specified under Coho In-season Decisions. Commercial catch guidelines will also include allowances for escapement and First Nation fishing requirements.

While participating in the fishery, commercial fishers are required to land catches at a registered landing station within each 24-hour period, or portion thereof, commencing from opening time. All fish harvested within a 24-hour period must be landed at a registered landing station no later than 1:30 p.m. Hail information collected throughout the openings will be used to justify extensions to fishing times. Tag recovery information must be segregated by gear-type, i.e. gill net or fishwheel, and delivered to DFO personnel no later than 1:30 PM after each 24-hour fishing period. As in past years, catches shall be made available for sampling by DFO staff and/or samplers designated by DFO.

A new licence condition for 2003 is documentation of the number of fish caught but subsequently released. This information is to be recorded in a log-book and submitted along with harvest and tag recovery information after each 24-hour fishing period.

As in previous years, **ONE** of the following combinations of gear may be used:

- a) one anchored gill net and 1 drift gill net;
- b) two anchored gill nets;
- c) one fishwheel and one drift gill net;

- d) one fishwheel and one anchored gill net; or,
- e) two fishwheels.

Gill nets (set or drift) may be up to 30.5 meters (100 feet) in length and must meet the following web specifications:

- a) Have 30 or more filaments in each twine of the web, with all filaments in the web of equal diameter. This is the web which has been typically fished on the Taku River in the past; or,
- b) Have 6 or more filaments in each twine of the web, with all filaments in the web a minimum of 0.20 mm in diameter. This web is otherwise known as “Alaska twist”;
- c) In order to minimise the incidental catch of chinook salmon, a maximum mesh size restriction of 150 mm (approximately 5.9 inches) will be in effect through 12:00 noon July 13.

Set nets must be identified with an orange coloured buoy that is not less than 125 cm in circumference (16 inch diameter) with the fisher’s name clearly marked on it. The buoy must be attached to the end of the net that is furthest from shore. All drift nets will have the last float of the float line orange in colour with the fisher’s name clearly marked on it. All gear must be checked at least every 12 hours and any fish caught must be removed. Any gear left for more than the time specified on the conditions of licence will be deemed to be unattended.

As noted in item (c) above, mesh size restrictions are in effect through mid July to reduce the incidental harvest of chinook salmon. In addition, all steelhead and chum salmon caught in the commercial fishery must be released in order to minimise the impact of the fishery on these species.

The fishery will be monitored by DFO staff who will collect catch and tag recovery data from fishers and sample portions of the catch for age, size, sex and stock composition determinations. Catch and tag recovery data will be collected daily and will be recorded for each licence by species and hours fished. Conservation and Protection staff will monitor and enforce compliance in the fishery.

## **7 2003 TAKU RIVER RECREATIONAL FISHING PLAN**

Fishing restrictions for the recreational fishery are described in the B.C. Freshwater Salmon Supplement 2003/2004 (see Website Index). Gear is limited to single barbless hooks for fishing in all streams and sloughs.

Compliance monitoring and enforcement will be undertaken by enforcement personnel with the province of B.C. and/or Fisheries and Oceans Canada.

## **8 2002 POSTSEASON REVIEW**

A detailed post-season review is given annually in a report prepared by the Transboundary Technical Committee. The report for 2002 entitled: “Preliminary Estimates of Transboundary River Salmon Production, Harvest and Escapement and a Review of Joint Enhancement

Activities in 2002”, is available through the Pacific Salmon Commission or the Fisheries and Oceans Canada office in Whitehorse. The Pacific Salmon Commission address is 600-1155 Robson Street, Vancouver, BC V6E 1B5; phone (604) 666-8081.

### 8.1 Conserving and Restoring Spawning Stocks and Habitats

Conservation objectives in 2002 were to meet the spawning escapement objectives for chinook, sockeye and coho listed in Table 4, and to minimise bycatch of chum salmon; there was no explicit objective for pink salmon.

Table 4 presents preliminary 2002 spawning escapement estimates in relation to objectives. Spawning targets were exceeded for both sockeye and coho salmon. The chinook estimate is still quite preliminary but escapement appears have been within the goal range.

**Table 4. 2002 Spawning Escapement - Actual versus Objective**

Species	Spawning Escapement Objective	Estimated Escapement 2002 (preliminary)
Sockeye	71,000 to 80,000	109,035
Coho	27,500 to 35,000	219,336
Chinook	30,000 to 50,000	43,822
Chum	50,000 to 80,000	Unknown
Pink	150,000 to 200,000	Unknown

As noted in Section 4 , escapement of chum and pink salmon is indexed (using CPUE data from the Canyon Island live-capture program) rather than estimated. Spawning escapement goals for these species are not based on empirical escapement/ recruitment data and are subject to review. Based on Canyon Island CPUE data, and the relationship between fishwheel catch and abundance for sockeye, it is believed that the 2002 escapement levels were significantly short of the goals (particularly for chum). This was in keeping with the pre-season outlook. The chum salmon Canyon Island catch in 2002 (205 fish) was close to the ten-year average of 301 fish. The pink salmon catch (5,672 fish) was well below the average (even-years only) of 17,562 fish.

No pink or chum salmon were retained in the Canadian commercial fishery in 2002; pink are released due to low marketability, while licence conditions preclude retention of chum salmon. The TRTFN reported a harvest of 0 chum. Although recreational data is not yet available, it is believed that the catch was also nil.

With the exception of chum salmon, the overall status of spawning escapements and habitat is favourable within the Taku watershed. However, there is a shortage of stock-specific information making it difficult to evaluate the health of most individual stocks.

## **8.2 First Nations Fisheries Objectives**

The objective in 2002 was to manage fisheries in recognition of the Section 35, constitutional priority of the First Nations fishery i.e. ensure that, subject to conservation needs, first priority is accorded to First Nations to provide opportunities to harvest fish for FSC purposes.

This objective was achieved in 2002; the TRTFN had first priority to harvest fish for FSC purposes.

## **8.3 International Objectives**

The objective in 2002 was to manage Canadian treaty fisheries to ensure that obligations within the PST were achieved.

Obligations for 2002 included:

- Harvest sharing as per Table 5.
- Continuation of the joint enhancement program designed to produce 100,000 returning sockeye annually.
- Development of abundance-based management regimes and assessment programs for coho, chinook and sockeye salmon.

Table 5 presents treaty performance with regard to sockeye and coho harvests. The catch of wild sockeye was close to the international allocation (17% versus 19%). (Note that this figure should be considered preliminary since the estimate of the U.S. harvest of Taku-origin sockeye has not yet been finalised.) In contrast, harvests of both enhanced sockeye and coho fell far short of the allocation. The low enhanced sockeye Canadian harvest share (30% of the TAC) may have been a factor of run timing through the Canadian and U.S. fisheries. It should be noted that the run was quite small in relation to the wild sockeye run. Coho catches in both the Canadian and U.S fisheries were low due to poor market conditions. (The U.S. had an obligation to allow 38,000 fish to escape to the border; the actual border escapement was 223,000). There was no directed commercial effort for coho in Canada; they were harvested incidentally to sockeye or in the TRTFN FSC fishery.

There were no PST harvest sharing arrangements for chinook, pink, or chum salmon in 2002.

**Table 5. 2002 Canadian Harvests in relation to PST Harvest Sharing Arrangements**

Species	Harvest Sharing Arrangement (Canada)	Total Allowable Catch (Canada)	Actual
Sockeye (wild)	18% of the TAC plus 20% of the in-river escapement above 100,000 sockeye	34,688 (19%)	31,160 (17% - preliminary)
Sockeye (enhanced)	50% of the TAC	589 (50%)	48 (4 %)
Coho	10,000 coho after statistical week 33 (since border run size exceeded 75,000 fish)	10,000	688

The joint sockeye enhancement program was continued in 2002; however annual production of 100,000 sockeye has not yet been achieved since program inception. The number of fry outplanted in the spring of 2002 was 2.23 million; the number of eggs taken in the fall was 2.3 million. Only an estimated 1,178 enhanced sockeye returned as adults in 2002 (despite egg takes of 5.0 million and 2.6 million in the primary brood years). The limited success of the program to date is largely due to poor in-lake survival of enhanced fry; investigation into possible causes is ongoing.

As noted in Section 8.1, the spawning escapement goal for chinook salmon was met in 2002.

Abundance-based management (ABM) approaches have in place for some time for sockeye salmon and continue to be refined for chinook and coho salmon. System-wide escapement goals have been bilaterally established for all salmon species; as per PST requirements the chinook escapement goal was revised and progress is being made on revising the coho escapement goal by (required by May 2004). Several projects were continued in 2002 to support ABM regimes. These included: chinook and coho test fisheries; chinook, sockeye and coho mark-recapture programs; chinook and coho coded-wire tagging programs. In-season projection capability of in-river run strength of sockeye, chinook and coho salmon was again demonstrated in 2002; total in-season run projections are available for sockeye and may be available for coho salmon.

#### **8.4 Domestic Allocation Objectives**

The objective for 2002 was to manage fisheries in a manner that is consistent with *An Allocation Policy for Pacific Salmon* and the 2002 Pacific Salmon Allocation Implementation Plan. On the Taku River, allocations were specified only for the TRTFN – there was no distinction made between other user groups (i.e. commercial and recreational fishers). There were no restrictions to TRTFN fishing activities in 2002.

**Table 7. 2002 TRTFN harvests in relation to Communal Licence Agreements**

<b>Species</b>	<b>TRTFN Communal Licence Allocation</b>	<b>Actual Harvest</b>
Sockeye	2,000	155
Coho	750	688
Chinook	500	37
Chum	Not-applicable	0
Pink	Not-applicable	0

### **8.5 Enforcement Objectives**

The objective for 2002 was to ensure compliance with acts and regulations associated with the management of Pacific salmon.

At the end of each season, statistics are compiled on the numbers of checks conducted from various platforms (water, vehicle and foot), the number of charges resulting from these checks and others. Prior to 2003, C&P used this information to evaluate whether enforcement priorities were met and whether various enforcement activities were effective. This data, although still collected, fails to account for variables such as changes in human resources. Therefore the numbers can go up or down but this holds little relevance to whether or not program objectives are being met. As outlined below, in 2003, evaluations will be done on whether or not C&P meets the objectives outlined in each planned operation which are directly linked to the Area priority setting process.

In the Yukon/ Transboundary Area for 2002, 80 violations were recorded by Conservation and Protection program staff. Violations are defined as incidents involving some form of enforcement activity, and may include a warning ticket, investigation or prosecution.

The 2002 season was plagued with unforeseen budgetary constraints as a result of job action by Fishery Officers nationwide. This resulted in C&P re-evaluating its priorities in-season and reducing enforcement activities on the Taku River. The Taku River was seen as a lower priority in-season mostly because, compared to other systems, there were fewer conservation concerns.

There was one patrol to the Taku River in 2002 to conduct compliance checks. One minor violation was found and resolved without incident. A total of 6 alleged fishing or fish habitat violations were recorded for the Taku/Atlin area.

## 9 APPENDICES

- Appendix 1: Literature Cited
- Appendix 2: Map of Taku River System
- Appendix 3: Taku River Stock Assessment
- Appendix 4: Licensing

### 9.1 APPENDIX 1: Literature Cited

Kelley, M.S. and P.A. Milligan. 1999. Mark-Recapture Studies of Taku River Adult Salmon Stocks in 1997. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report IJ99-21, Juneau.

Groot C. and L. Margolis (eds.). 1991. Pacific Salmon Life Histories. UBC (University of British Columbia) Press Vancouver.

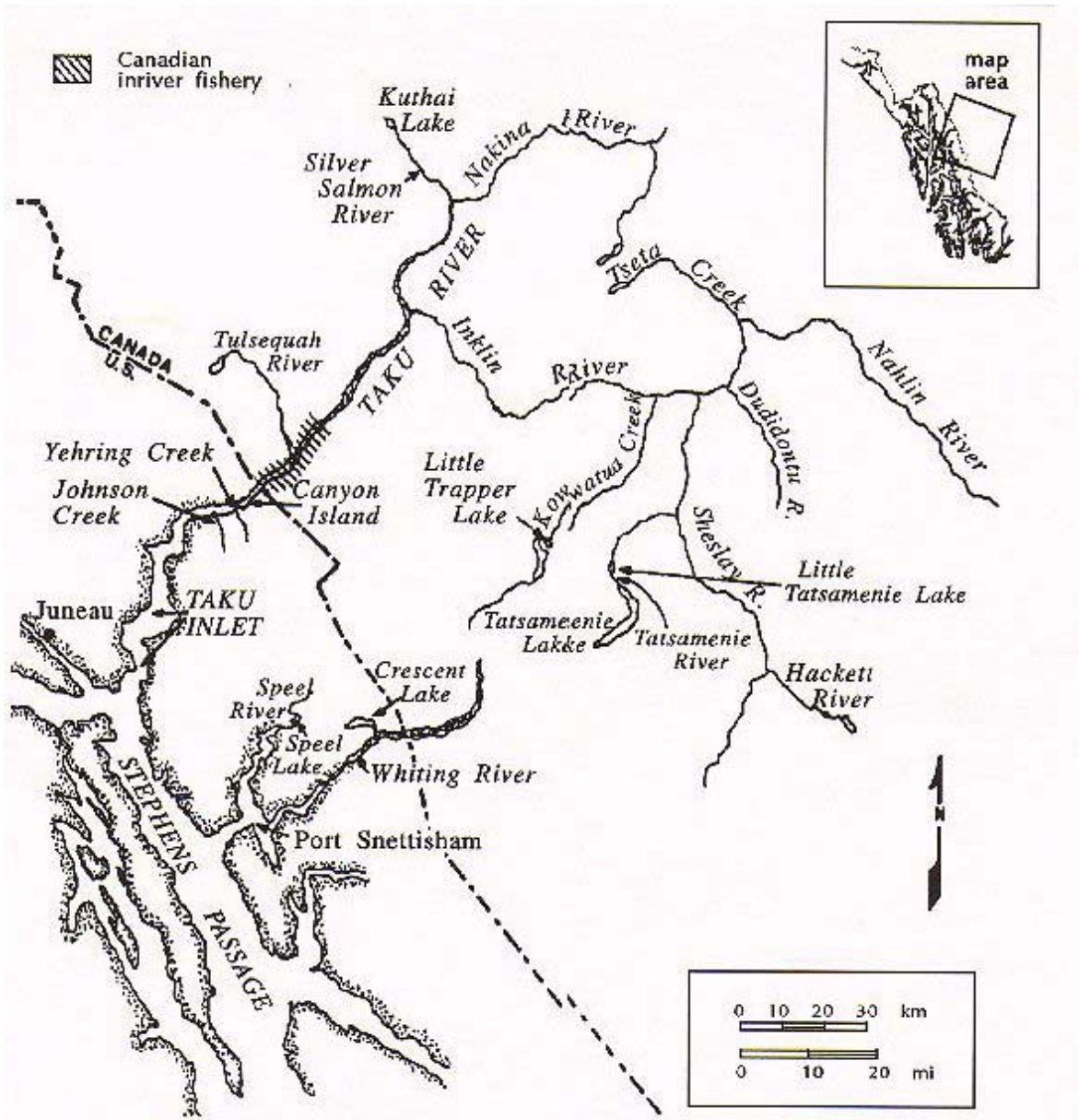
McGregor , A.J. and J.E. Clark. 1989. Migratory timing and escapement of Taku River salmon stocks in 1988. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 1J89-40, Juneau.

McPherson, S.A., R.J. Yanusz, D.R. Bernard, and M.S. Kelley. 1998. Production of coho salmon from the Taku River, 1996-1997. Alaska Department of Fish and Game, Fishery Data Series No. 98-18, Anchorage.

Shaul, L.D., J.F. Koener, and P.L. Gray. 1991. Coded wire tag estimates of abundance, harvest, and survival rates of selected coho salmon stocks in Southeast Alaska, 1981-1986. Alaska Department of Fish and Game Fishery Research Bulletin No. 91-05.

Yanusz R.J., S.A. McPherson, D.R. Bernard, and I.M. Boyce. 2000. Production of coho salmon from the Taku River, 1998-1999. Alaska Department of Fish and Game, Fishery Data Series No. 00-31, Anchorage.

9.2 APPENDIX 2: Map of the Taku River System



### **9.3 APPENDIX 3: Taku River Stock Assessment**

On the Taku River, assessment processes for sockeye, coho and chinook salmon are being developed along similar lines. The process generally involves assessing the total in-river run size through mark-recapture programs (whereby fish are live-captured, tagged, then released and subsequent recapture rates are used to generate estimates), monitoring of in-river catches for use in conjunction with in-river abundance estimates to obtain total escapement estimates, sampling of catches and escapements to determine age, size and sex composition and information on the contribution of enhanced stocks, and stock specific escapement studies.

#### **Sockeye Salmon**

The assessment program for Taku sockeye salmon in 2003 includes the following components:

- A mark-recapture program in the lower Taku River to provide in-season projections and post-season estimates of total in-river run size and escapement, major stock timing, and overall age and size composition;
- Sampling in Canadian and U.S. gill net fisheries to determine age and size composition of catches and contributions of enhanced stocks. Sampling is also conducted for stock identification;
- Stock-specific escapement enumeration and/or sampling at select spawning sites including weirs located at Little Trapper, Tatsamenie and Kuthai lakes;
- A number of assessment projects to evaluate the joint Canada/U.S. sockeye enhancement program on Taku sockeye including: hydroacoustic and limnological surveys; fry outplant and smolt emigration studies; otolith sampling and analyses in catches, escapements and juvenile samples to determine enhanced and wild contributions; and preliminary surveys of other potential enhancement opportunities as funds permit.

#### **Coho Salmon**

The assessment program for Taku coho salmon in 2003 includes the following components:

- A mark-recapture program in the lower Taku River to determine in-season projections and post-season estimates of total in-river run size and escapement, major stock timing, and overall age and size composition;
- A Canadian test fishery which will operate to recapture tagged adult fish in the event the commercial fishery is closed or not operating;
- Sampling in Canadian and U.S. gill net fisheries to determine age and size composition of catches and contributions of enhanced stocks (U.S. fisheries only) and to recover CWTs;

- A coded-wire tagging program to provide smolt production estimates associated with brood year escapement estimates, ocean survival, harvest rates, and stock identification and contributions within the marine fisheries.

### **Chinook Salmon**

The assessment program for Taku chinook salmon in 2003 includes the following components:

- A mark-recapture program in the lower Taku River to determine in-season projections and post-season estimates of total in-river run size and escapement, major stock timing, and overall age and size composition;
- A Canadian test fishery which will operate to recapture tagged adult fish;
- Sampling in Canadian and U.S. gill net fisheries to determine age and size composition of incidental catches and contributions of enhanced stocks (in U.S. fisheries only) and to recover CWTs;
- A coded-wire tagging program to provide smolt production estimates associated with escapement estimates, ocean survival, harvest rates, and stock identification and contributions within the marine fisheries;
- Aerial surveys of select escapement index streams.

### **Pink, Chum and Steelhead**

The assessment program for Taku pink, chum and steelhead in 2003 primarily involves monitoring catches and effort in Canyon Island fishwheels and live-release gill nets (i.e. the gear used for the chinook, sockeye and coho mark-recapture programs). In addition, approximately 200 chum will be radio-tagged at Canyon Island and tracked to terminal areas in order to augment existing spawning distribution information.

## 9.4 APPENDIX 4: Licensing

Prior to fishing in the Taku watershed a person must hold a valid licence to fish in at least one of the five basic licence categories.

These categories are:

- a) Communal
- b) Experimental, Scientific, Educational or Public display
- c) Recreational
- d) Commercial
- e) Excess to Salmon Spawning Requirements (ESSR)

### **Communal**

These are issued to First Nations' organisations pursuant to the *Aboriginal Communal Fishing Licences Regulations* to carry on fishing and related activities. They are issued to all First Nations that have historically fished in the Taku River watershed and are for food, social and ceremonial purposes. The First Nations maintain control of these licences and have the authority to designate all persons fishing in this category. There is no fee for these licences.

### **Experimental, Scientific, Educational or Public Display Purposes**

These licences are issued pursuant to the Fishery General Regulations (FGR) Part VII and allow for fishing for the purpose of gathering information. The only stipulation for this type of licence is that it must be in proper management of the fishery and be approved by the Minister. There is a fee of \$100 in effect only when the fish are to be used for display purposes.

### **Recreational**

Recreational fishing on the Taku River is permitted provided the angler is the holder of a current B.C. angling licence if they are over the age of sixteen. A salmon conservation stamp must be validated with the basic angling licence if the fisher intends to keep salmon.

Residents under the age of sixteen may fish without a licence unaccompanied by a licence holder. Daily quotas and other regulations apply.

Non-residents under the age of sixteen may fish without a licence but must be accompanied by a valid licence holder. Catches must be counted towards the possession limit of the licence holder.

Fees vary depending on the type of licence required.

### **Commercial**

There are currently sixteen licences available for commercial fishing on the Taku River. Eligibility requirements include having held a licence in the previous year. Recommendations for

transferring commercial licences have been developed by the Taku River Salmon Management Committee. These recommendations are under review by the Minister. The cost of a commercial licence is \$200.

Aboriginal Communal Commercial Licences are issued to First Nations' organisations pursuant to the *Aboriginal Communal Fishing Licences Regulations* for participation in the general commercial fishery. Licences issued are equivalent to the capacity of licences that have been retired under the Aboriginal Fisheries Strategy (AFS) Licence Retirement/Allocation Transfer Program. There is a \$20 charge for Communal Commercial Fishing Licenses issued through the TRTFN AFS agreement.

### **Excess to Spawning Requirements (ESSR) Licence**

There are no ESSR licences anticipated for Taku River salmon in 2003. However, if ESSR situations occur, consideration would be given to initiating ESSR fisheries subject to the provisions of the DFO ESSR policy.