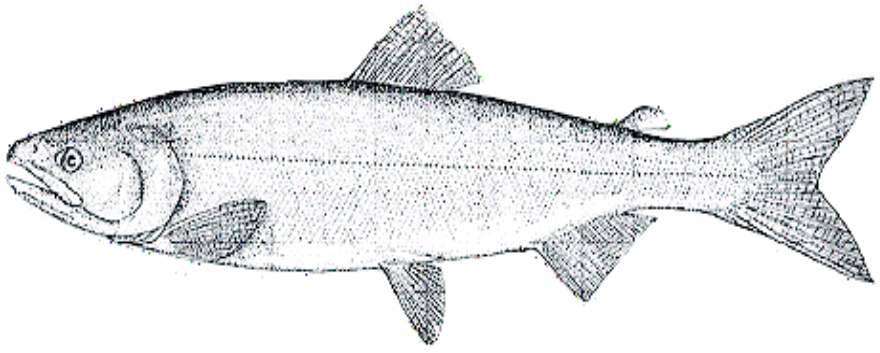
PACIFIC REGION

INTEGRATED FISHERIES MANAGEMENT PLAN

SALMON SOUTHERN B.C.

JUNE 1, 2013 TO MAY 31, 2014



Genus Oncorhynchus

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, 2007.

TABLE OF CONTENTS

DEPARTMENT CONTACTS

A more comprehensive list of contacts can be found online at:
http://www.pac.dfo-mpo.gc.ca/fm-gp/contacts-eng.htm.

24 Hour Recorded Information (Commercial) Vancouver	(604) 666-2828
Pacific Salmon Commission (PSC) Office	(604) 684-8081
PSC Test Fisheries (Recorded, In-Season Information)	(604) 666-8200

Recreational Fishing: http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/index-eng.htm
Commercial Fishing: http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/index-eng.htm

Regional Headquarters

Regional Director, Fisheries Management Branch	Rebecca Reid	(604) 666-0753
Director, Res. Management, Program Delivery	Paul Ryall	(604) 666-0115
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Regional Resource Manager - Salmon	Jeff Grout	(604) 666-0497
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Regional Director, Conservation and Protection	Larry Paike	(604) 666-0604
Regional Director, Ecosystem Management	Bonnie Antcliffe	(604) 666-6532
Director, Aquaculture Management Division	Diana Trager	(604) 666-7009

Pacific Fisheries Licensing Unit (604) 666-0566
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A/Area Chief, Resource Management	Brigid Payne	(604) 666-6512
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Resource Manager - AFS/Recreational/Commercial	Barbara Mueller	(604) 666-2370
Resource Manager - AFS/Recreational	Brian Matts	(604) 666-2096
Resource Manager - AFS/Recreational	Sheldon Evers	(604) 666-8409
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Resource Management Technician	Karen Burnett	(604) 666-3478
Resource Management Biologist (Sockeye, Pink)	Ann-Marie Huang	(604) 666-6033
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Resource Management Biologist	Matthew Parslow	(604) 666-6608
Aboriginal Affairs Advisor	Terri Bonnet	(604) 666-8590

Treaty Implementation Coordinator	vacant	(604) 666-1089

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Area Director	Les Jantz	(250) 851-4865
A/Area Chief, Resource Management	Dean Allan	(250) 851-4821
Area Chief, Salmon Stock Assessment	Timber Whitehouse	(250) 851-4833
Area Chief, Conservation and Protection	Stu Cartwright	(250) 851-4922
A/Area Chief, Ecosystem Management	Michael Crowe	(250) 851-4963
Aboriginal Affairs Advisor	Adrian Wall	(250) 851-4853
A/Resource Manager – Kamloops (AFS/Rec)	Dave Reedman	(250) 305-4019
Asst. Resource Manager – Kamloops (AFS / Recreational)	Merv Mochizuki	(250) 851-4952
PICFI Coordinator	Dale Michie	(250) 851-4946
Resource Manager – Williams Lake (AFS/Recreational)	Linda Stevens	(250) 305-4004
A/Resource Manager – Williams Lake (AFS/Rec)	Lita Gomez	(250) 851-4961
Senior Resource Management Biologist - Kamloops	Jamie Scroggie	(250) 851-4948
Resource Management Biologist - Kamloops	Cindy Samaha	(250) 851-4961

South Coast Area

Area Director	Andrew Thomson	(250) 756-7280
Area Chief, Resource Management	Greg Thomas	(250) 756-7103
Area Chief, Conservation and Protection	Tom Hlavac	(250) 756-7159
Area Chief, Salmon Stock Assessment	Wilf Luedke	(250) 756-7222
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A/Enhancement Operations Section Head	Mel Sheng	(250) 754-0357
RM Program Co-ordinator - WCVI (Areas 21 to 26)	Bill Shaw	(250) 756-7152
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RM Program Co-ordinator - SOG (Areas 14 to 20)	Andrea Goruk	(250) 756-7287
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Resource Manager – SOG (Areas 17 to 19)	Terry Palfrey	(250) 756-7158
A/Resource Manager - AFS (Strait of Georgia)	Jonathan Joe	(250) 756-7243
Recreational Fisheries Co-ordinator (South Coast)	Brad Beaith	(250) 756-7190
RM Program Co-ordinator - JS (Areas 11 to 13 and 27)	Beth Pechter	(250) 286-5880
Resource Manager - JS (Areas 11, 12 and 27)	Greg Hornby	(250) 286-5886
Resource Manager - JS (Areas 11 to 13 and 27)	Matt Mortimer	(250) 286-5814
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Pacific Fishery Licence Unit (250) 754-0400
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Nanaimo, B.C. V9R 5H7

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Chief, Conservation and Protection	Brian Atagi	(250) 754-0367

INDEX OF WEB-BASED INFORMATION

FISHERIES AND OCEANS CANADA - GENERAL INFORMATION

Main Page (http://www.dfo-mpo.gc.ca)
Our Vision, Latest News, Current Topics

Acts, Orders, and Regulations (http://www.dfo-mpo.gc.ca/acts-loi-eng.htm)
Canada Shipping Act, Coastal Fisheries Protection Act, Department of Fisheries and Oceans Act, Financial Administration Act, Fish Inspection Act, Fisheries Act, Fisheries Development Act, Fishing and Recreational Harbours Act, Freshwater Fish Marketing Act, Navigable Waters Protection Act, Oceans Act.

Reports and Publications (http://www.dfo-mpo.gc.ca/reports-rapports-eng.htm)
Administration and Enforcement of the Fish Habitat Protection and Pollution Prevention Provisions of the *Fisheries Act*, Audit and Evaluation Reports - Audit and Evaluation Directorate Canadian Code of Conduct for Responsible Fishing Operations, Departmental Performance Reports, Fisheries Research Documents, Standing Committee's Reports and Government responses, Sustainable Development Strategy.

Waves (http://waves-vagues.dfo-mpo.gc.ca/waves-vagues/)
Fisheries and Oceans Canada online library catalogue

Pacific Salmon Treaty (http://www.psc.org)
Background information; full text of the treaty

PACIFIC REGION - GENERAL

Main Page (http://www.pac.dfo-mpo.gc.ca/)
General information, Area information, Latest news, Current topics

Policies, Reports and Programs
(http://www.pac.dfo-mpo.gc.ca/fm-gp/species-especes/salmon-saumon/pol/index-eng.htm)
Reports and Discussion Papers, New Directions Policy Series, Agreements

Oceans Program (http://www.pac.dfo-mpo.gc.ca/oceans/index-eng.htm)
Integrated Coastal Management; Marine Protected Areas; Marine Environmental Quality; Oceans Outreach; Oceans Act

PACIFIC REGION - FISHERIES MANAGEMENT

Main Page (http://www.pac.dfo-mpo.gc.ca/fm-gp/index-eng.htm)
Commercial Fisheries, New and Emerging Fisheries, Recreational Fisheries, Maps, Notices and Plans

Aboriginal Fisheries Strategy (http://www.pac.dfo-mpo.gc.ca/abor-autoc/index-eng.htm)
Aboriginal Fisheries Strategy (AFS) principles and objectives; AFS agreements; Programs; Treaty Negotiations

Aquaculture Management (http://www.pac.dfo-mpo.gc.ca/aquaculture/index-eng.htm)
The new federal regulatory program for aquaculture in British Columbia; Program overview and administration, public reporting, and aquaculture science

Recreational Fisheries (http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/index-eng.htm)
Fishery Regulations and Notices, Fishing Information, Recreational Fishery, Policy and Management, Contacts, Current B.C. Tidal Waters Sport Fishing Guide and Freshwater Supplement; Rockfish Conservation Areas, Shellfish Contamination Closures; On-line Licensing

Commercial Fisheries (http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/index-eng.htm)
Links to Groundfish, Herring, Salmon, Shellfish and New and Emerging Fisheries homepages; Selective Fishing, Test Fishing Information, Fishing Areas, Canadian Tide Tables, Fishery Management Plans, Commercial Fishery Notices (openings and closures)

Fisheries Notices (http://www-ops2.pac.dfo-mpo.gc.ca/xnet/content/fns/index.cfm?)
Want to receive fishery notices by e-mail? If you are a recreational sport licence vendor, processor, multiple boat owner or re-distribute fishery notices, register your name and/or company at the web-site address above. Openings and closures, updates, and other relevant information regarding your chosen fishery are sent directly to your registered email. It's quick, it's easy and it's free.

Integrated Fishery Management Plans
(http://www-ops2.pac.dfo-mpo.gc.ca/xnet/content/MPLANS/MPlans.htm)
Current Management Plans for Groundfish, Pelagics, Shellfish (Invertebrates), Minor Finfish, Salmon; sample Licence Conditions; Archived Management Plans.

Salmon Test Fishery - Pacific Region
(http://www-ops2.pac.dfo-mpo.gc.ca/xnet/content/salmon/testfish/default.htm)
Definition, description, location and target stocks

Licensing (http://www.pac.dfo-mpo.gc.ca/fm-gp/licence-permis/index-eng.htm)
Contact information; Recreational Licensing Information, Commercial Licence Types, Commercial Licence Areas, Licence Listings, Vessel Information, Vessel Directory, Licence Statistics and Application Forms

National On-line Licensing System (NOLS)
Web: www.dfo-mpo.gc.ca/fm-gp/sdc-cps/index-eng.htm
E-mail: SDC-CPS@dfo-mpo.gc.ca (please include postcode)
Telephone: 1-877-535-7307
Fax: 613-990-1866
TTY: 1-800-465-7735

Salmon (http://www.pac.dfo-mpo.gc.ca/fm-gp/species-especes/salmon-saumon/index-eng.htm)
Salmon Facts; Salmon Fisheries; Enhancement and Conservation; Research and Assessment; Consultations; Policies, Reports and Agreements; Glossary of Salmon Terms

Fraser River/B.C. Interior Area Resource Management and Stock Assessment
(http://www.pac.dfo-mpo.gc.ca/fm-gp/fraser/index-eng.htm)
Contact information; Test fishing and survey results (Albion, creel surveys, First Nations); Fraser River sockeye and pink escapement updates; Important notices; Recreational fishing information

North Coast Resource Management (http://www.pac.dfo-mpo.gc.ca/northcoast/default.htm)
First Nations fisheries, Recreational fisheries; Commercial salmon and herring fisheries; Skeena Tyee test fishery; Counting facilities; Post-season Review; Contacts

Yukon/Transboundary Rivers Area Main Page
(http://www.pac.dfo-mpo.gc.ca/yukon/index-eng.htm)
Fisheries Management; Recreational fisheries; Habitat; Licensing; Contacts

PACIFIC REGION - SALMONID ENHANCEMENT PROGRAM

Main Page (http://www-heb.pac.dfo-mpo.gc.ca/default_e.htm)
Publications (legislation, policy, guidelines, educational resources, brochures, newsletters and bulletins, papers and abstracts, reports); GIS maps and Data (Habitat inventories, spatial data holdings, land use planning maps); Community involvement (advisors and coordinators, educational materials, Habitat Conservation and Stewardship Program, projects, Stream talk).

PACIFIC REGION - POLICY AND COMMUNICATIONS

Main Page (http://www.dfo-mpo.gc.ca/media-eng.htm)
Media Releases; Salmon Updates, Backgrounders, Ministers Statements, Publications; Contacts

Consultation Secretariat (http://www.pac.dfo-mpo.gc.ca/consultation/index-eng.htm)
Consultation Calendar; Policies; National; Partnerships; Fisheries Management, Oceans, Science and Habitat and Enhancement Consultations; Current and Concluded Consultations

Publications Catalogue (http://www.pac.dfo-mpo.gc.ca/publications/index-eng.htm)
Listing of information booklets and fact sheets available through Communications branch

Species at Risk Act (SARA) (http://www.dfo-mpo.gc.ca/species-especes/index-eng.htm)
SARA species; SARA permits; public registry; enforcement; Stewardship projects; Consultation; Past Consultation; First Nations; Related Sites; For Kids; News Releases

PACIFIC REGION - SCIENCE

Main Page (http://www.pac.dfo-mpo.gc.ca/science/index-eng.htm)
Science divisions; Research facilities; PSARC; International Research Initiatives

FOREWORD

The purpose of this Integrated Fisheries Management Plan (IFMP) is to identify the main objectives and requirements for the Southern B.C. Pacific salmon fishery, as well as the management measures that will be used to achieve these objectives. This document also serves to communicate the basic information on the fishery and its management to Fisheries and Oceans Canada (DFO, the Department) staff, legislated co-management boards, First Nations, harvesters, and other interested parties. This IFMP provides a common understanding of the basic "rules" for the sustainable management of the fisheries resource.

This IFMP is not a legally binding instrument that can form the basis of a legal challenge. The IFMP can be modified at any time and does not fetter the Minister's discretionary powers set out in the Fisheries Act. The Minister can, for reasons of conservation or for any other valid reasons, modify any provision of the IFMP in accordance with the powers granted pursuant to the Fisheries Act.

Where DFO is responsible for implementing obligations under land claims agreements, the IFMP will be implemented in a manner consistent with these obligations. In the event that an IFMP is inconsistent with obligations under land claims agreements, the provisions of the land claims agreements will prevail to the extent of the inconsistency.

NEW FOR 2013/2014

Catch Monitoring Pilots:

Since 2011, the Department has been working with the Commercial Salmon Advisory Board as part of a Catch Monitoring Working Group to review catch monitoring requirements consistent with the "Strategic Framework for Fishery Monitoring and Catch Reporting in the Pacific Fisheries." A set of minimum requirements was developed for commercial salmon catch monitoring programs. Minimum catch monitoring requirements identified by DFO and the Commercial Salmon Advisory Board Catch Monitoring Working Group (CSAB CMWG) include:

Independent verification of fishery specific effort
Independent verification of landed catch
Independent verification of at-sea releases
Fishery specific minimum biological sampling standards
Independent verification of compliance with fishery rules

For 2013, a number of catch monitoring pilot programs are being implemented to address deficiencies that have been identified with the minimum requirements. While all fisheries will be required to meet catch monitoring requirements over time, a number of key fisheries have been identified for the 2013 pilot programs. Competitive (full-fleet) fisheries will be expected to implement pilot catch monitoring programs in the following areas:

Area A seine: pink (PFMA 3 and 6), Area C gill net: sockeye (Skeena and Nass), Area D Gill net: sockeye (Johnstone Strait), Area E Gill net: sockeye (Fraser River) and Area G Troll: chinook (WCVI). Please see your conditions of licence for more information on pilot programs for 2013.

Catch monitoring initiatives and improvements in the Recreational and First Nation FSC fisheries are ongoing. Improvements in the recreational sector are coordinated through the joint SFAB and DFO Catch Monitoring Working Group and include for example, development of an overarching monitoring strategy document, application of the Framework's risk assessment to specific areas and times of year, new internet-based survey techniques, enhancements to creel survey methodologies, piloting the use of Elogs and data management development and enhancements. Monitoring improvements in First Nation FSC fisheries include developing an inventory of current practices and gaps much like what was done initially in the commercial salmon process.

Cost of At-Sea Monitoring

As of April 1, 2013, the fishing industry will be responsible for the full cost of the at-sea observer program, as well as the any electronic monitoring program on the Pacific coast.

Industry will now enter directly into contracts with at-sea observer service providers that are certified by the Canadian General Standards Board and designated by Fisheries and Oceans Canada. The certification and designation process is outlined on our website at: www.dfo-

mpo.gc.ca/fm-gp/sdc-cps/nir-nei/obs-eng.htm. We have also web-posted the Department's Designation Policy and Procedures for corporations that have received their certification from the Canadian General Standards Board and are seeking to become a designate at-sea service provider under the Fishery (General) Regulations. This document is available at: www.dfo-mpo.gc.ca/fm-gp/sdc-cps/nir-nei/obs-dpp-eng.htm.

Fisheries and Oceans Canada will continue to communicate directly with fish harvesters, their unions and associations, as well as other key stakeholders, to ensure that everyone is aware of these service delivery changes.

For more information, visit the Department's website at http://www.dfo-mpo.gc.ca/fm-gp/sdc-cps/index-eng.htm.

Fraser River Spring and Summer 5_2 Chinook Management Zones

For 2013, Fraser River Spring and Summer 5_2 chinook will once again be managed using a zoned approach. However, the breakpoints between the management zones have been changed. The new breakpoints are at 45,000 and 85,000 chinook returning to the Fraser River. In 2012, these breakpoints were at 30,000 and 60,000. The management actions proposed within each zone have not been changed. The rationale for the breakpoints and the changes to the breakpoints are in Section 5.1.4. Specific management actions are identified separately for First Nations (Appendix 5, Section 5.2.9), recreational (Appendix 6, Section 6.2.3) and commercial fisheries (Appendix 7, Section 7.16.5).

Recreational Guidelines

In order to reduce duplication of effort, the details of the recreational fishing plan that were previously contained in Appendix 7: Tidal Salmon Sport Fishing Guidelines and Appendix 8: Freshwater Salmon Sport Fishing Guidelines are not contained in this years' IFMP. This information can be found in the B.C. Tidal Waters Sport Fishing Guide/B.C. Freshwater Salmon Supplement which can be found online at: http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/index-eng.htm or at DFO offices and local tackle shops. If information changes in-season, the DFO Recreational Fisheries website will be updated within 24 hours and a Fishery Notice will be issued. To access the most up-to date information for non-tidal waters, please hit the blue map labelled freshwater and for tidal waters, the green map labelled salt water and select the area you plan to fish in. Information is provided by species and may also include area maps. Please note that the pdf version of the guide that is found online is not updated in-season.

To sign up to have recreational fishery notices sent directly to your email, please go to:

http://www-ops2.pac.dfo-mpo.gc.ca/xnet/content/fns/index.cfm and click "sign up to receive fishery notices by email" at the bottom of the home page.

In addition, a section entitled "*Proposed Changes to Recreational Fisheries"* has been added to the Recreational Appendix (Appendix 6). Where changes to the management of recreational fisheries are known and being contemplated, details will be provided.

Salmonid Enhancement Program

Starting in 2013, tables outlining Post-Season Production and Proposed Targets for the upcoming brood year will no longer be included within the body of the IFMP and will be available online at: http://www.pac.dfo-mpo.gc.ca/sep-pmvs/index-eng.htm and click on IFMP SEP Data tables.

For more information on the Salmonid Enhancement Program, please see section 4.3.14 of the IFMP.

Bocaccio

Based on updated science information, the Department has set out a plan for stepped reductions of total Bocaccio harvest to a target level of 75 tonnes over 3 years (2013-14 to 2015-16). This plan accounts for First Nations' priority access for food, social, and ceremonial purposes. The Department has worked with fishing interests to develop measures that will reduce Bocaccio catch and enable stock rebuilding over the long term.

Taking into consideration advice provided by fishing interests, starting in 2013 the Department is establishing pilot management measures that are intended to reduce Bocaccio catch in the commercial and recreational fisheries that encounter them. As the salmon troll fishery can intercept Bocaccio, new management restrictions on the number of Bocaccio permitted to be retained will be implemented starting in 2013 within the salmon troll fleet. Please see your conditions of licence for further details.

The Department will review the efficacy of these pilot measures at the end of each fishing season and consider any additional measures necessary to meet the 75 tonne catch target.

Service Delivery Changes for Fish Harvesters

Fisheries and Oceans Canada has been changing its fisheries management programs and services to better respond to the current and future needs of Canada's fishing industry.

New online licensing system

Beginning in 2013, the Department's commercial licensing services will move from the counter to the internet to enable fishermen to go online to obtain and renew their commercial fishing licences – and to access other in-season services. Fishermen will be able to pay their licensing fees, vessel registrations, and reissuances online using their bank card (Interac) or credit card. They will also use the online licensing system to request and receive their licences, and to access approval of representatives and issuance of licence conditions. Fishermen who prefer to pay licence fees using cash or cheque may still do so at any national bank; however, these fishermen will still require an e-mail address and registration within the new system, so the Department can notify them when payments have been processed. Alternatively, fishermen may appoint a representative to handle their transactions via the online licensing system.

The DFO passcode allowing access to the online system is being mailed to fish harvesters over the upcoming months in a phased approach. DFO licensing personnel will continue to be available for your licensing requests at the existing DFO offices during this phase in period. Once harvesters receive a passcode, however; they should access the online licensing system immediately (passcodes have an expiry date) to complete their registration, view and update their information, complete licence renewals, make fee payments, and print documents. Client support will be available via e-mail (fishing-peche@dfo-mpo.gc.ca) or toll-free telephone (1-877-535-7307). In-person support will be available by appointment. Further information on these new changes can be found at: www.dfo-mpo.gc.ca/fm-gp/sdc-cps/index-eng.htm

National On-line Licensing System (NOLS)
Web: www.dfo-mpo.gc.ca/fm-gp/sdc-cps/index-eng.htm
E-mail: SDC-CPS@dfo-mpo.gc.ca
Telephone: 1-877-535-7307
Fax: 613-990-1866
TTY: 1-800-465-7735

Use of Fish for Financing Salmon Science and Management Activities

Since the 1980's, the Minister of Fisheries and Oceans regularly assisted industry to finance their part of collaborative science and management activities through use-of-fish arrangements. This ended in June 2006 when the Federal Court of Appeal ruled that the Minister of Fisheries and Oceans did not have this authority under the existing Fisheries Act. To avoid significant disruption of the most critical collaborative science activities (where allocation of fish had been a key component), $68.5 Million of relief funding over 6 years (2007-2013) was provided while a new legislative authority was established. In 2012, an amendment to the Fisheries Act granted the Minister the authority to allocate fish for financing science and management purposes.

DFO has adopted a two-track approach to the implementation of the new authority to address the immediate and long-term needs.

Track one includes a transition, where feasible for existing projects to the new use-of-fish authority for a period of one year (starting April 1, 2013 to March 31, 2014 pending completion of Track 2).

Track two includes the development of a national policy framework to provide a standardized, rigorous and transparent process for all existing and new project evaluations and approvals.

DFO will work in close collaboration with resource users to ensure that the fisheries data collections necessary to set TAC's and to ensure conservation will continue to be undertaken.
See Appendix 7, Section 7.5

1. OVERVIEW

1.1. Introduction

This 2013/2014 Southern B.C. Salmon Integrated Fisheries Management Plan (IFMP) covers the period June 1, 2013 to May 31, 2014.

This IFMP provides a broad context to the management of the Pacific salmon fishery and the interrelationships of all fishing sectors involved in this fishery. Section 2 considers stock assessment, while Sections 3 and 4 consider the social, cultural, and economic performance of the fishery and its' broader management issues. Section 5 describes the objectives to address the issues identified in Section 4. Sections 6 and 7 describe allocation and management procedures.

The Appendices in the IFMP provide information such as the post season review, and the fishing plans for First Nations and the recreational and commercial sectors.

1.2. History

For thousands of years, the history, economy and culture of Canada's West coast have been inextricably linked to Pacific salmon.

1.3. Type of Fishery and Participants

This plan describes the management of First Nations, recreational and commercial fisheries for Pacific salmon in southern B.C. and the factors that influence decision-making.

Salmon fisheries are coordinated regionally with many management decisions occurring in area and field offices. Key to salmon management is the development and implementation of integrated fisheries management plans that meet specified objectives focusing on conservation, allocation and obligations to First Nations and international treaties.

1.4. Location of Fishery

This IFMP covers fisheries in tidal and non-tidal waters from Cape Caution south to the B.C./Washington border, including the Fraser River watershed (Figure 1-1).

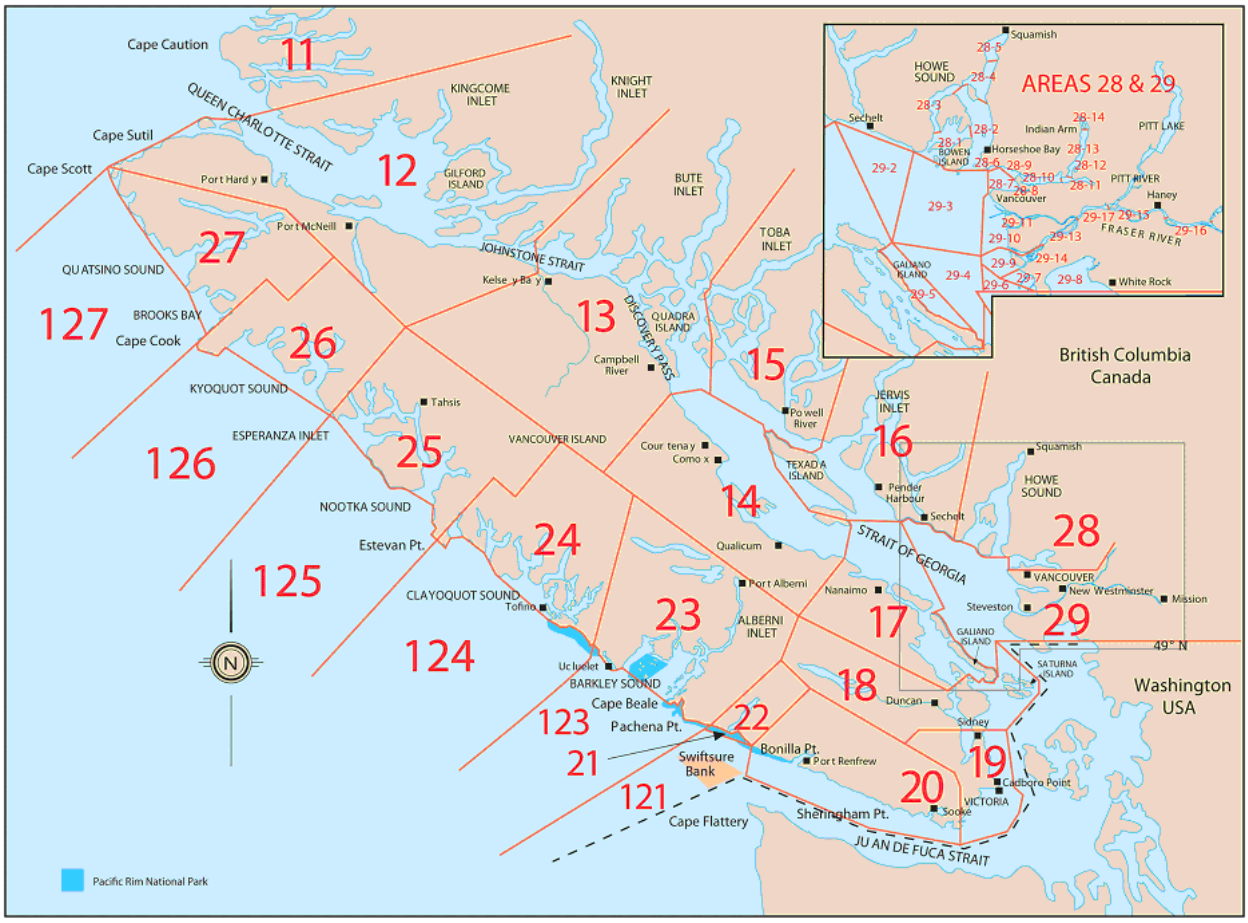


Figure 1-1: Management Areas for Southern B.C.

1.5. Fishery Characteristics

Pacific salmon species covered in the plan include sockeye, coho, pink, chum and chinook. Fisheries include those undertaken by First Nations as well as recreational and commercial fisheries.

Section 35(1) of the Constitution Act, recognizes and affirms the existing Aboriginal and treaty rights of the Aboriginal peoples in Canada, however it does not specify the nature or content of the rights that are protected. In 1990, the Supreme Court of Canada issued a landmark ruling in the Sparrow decision. This decision found that the Musqueam First Nation has an Aboriginal right to fish for food, social and ceremonial purposes. The Supreme Court found that where an Aboriginal group has a right to fish for food, social and ceremonial purposes, it takes priority, after conservation, over other uses of the resource. The Supreme Court also indicated the importance of consulting with Aboriginal groups when their fishing rights might be affected.

Pre-season, DFO engages in a variety of consultation and collaborative harvest planning processes with First Nations at the community level, or at broader tribal or watershed levels. Fisheries are then authorized via a Communal Licence issued by the Department under the Aboriginal Communal Fishing Licences Regulations (ACFLRs). These licences are typically issued to individual bands or tribal groupings, and describe the details of authorized fisheries

including dates, times, methods and locations of fishing. Licences and Aboriginal Fisheries Strategy (AFS) agreements (where applicable) include provisions that allow First Nations' designation of individuals to fish for the group and in some cases, vessels that will participate in fisheries.

Fishing techniques used in FSC fisheries are quite varied, ranging from traditional methods such as dip nets to modern commercial methods such as seine nets, fished from specialized vessels.

Separate from FSC fisheries, some First Nations have communal access to commercial opportunities as follows:

- Commercial fisheries access through communal commercial licences acquired through the Allocation Transfer Program (ATP). These licences are fished in a manner that is comparable to the general commercial fishery. First Nations with ATP licences typically contribute some proportion of funds towards off setting costs of local fisheries programs funded through AFS.
- Negotiated economic opportunity fisheries (lower Fraser and West Coast of Vancouver Island only) or demonstration fisheries (select locations in in-river areas, to date supported through licences relinquished from the commercial salmon fleet, primarily from the ATP and PICFI programs).
- At some enhancement facilities where surplus stocks not required for enhancement are made available to First Nations for food or for sale.

Fisheries and Oceans Canada regulates recreational fishing for Pacific salmon in both tidal and non-tidal waters. All recreational fishers must possess a valid sport fishing licence. Anglers wishing to retain salmon taken from either tidal or non-tidal waters must also have a valid salmon conservation stamp affixed to their licence. Part of the proceeds from the sale of stamps is used to fund salmon restoration projects supported by the non-profit Pacific Salmon Foundation.

Fishing techniques used in the recreational fishery include trolling, mooching and casting with bait, lures and artificial flies. Boats are most commonly used, but anglers also fish from piers, shores or beaches. Only barbless hooks may be used when fishing for salmon in British Columbia.

Commercial salmon licences are issued for three gear types: seine, gill net and troll. Trollers employ hooks and lines which are suspended from large poles extending from the fishing vessel. Altering the type and arrangement of lures used on lines allows various species to be targeted. Seine nets are set from fishing boats with the assistance of a small skiff. Nets are set in a circle around schools of fish. The bottom edges of the net are then drawn together into a "purse" to prevent escape of the fish. Salmon gill nets are rectangular nets that hang in the water and are set from either the stern or bow of the vessel. Fish swim headfirst into the net, entangling their gills in the mesh. Altering mesh size and the way in which nets are suspended in the water allows nets to target selectively on certain species and sizes of fish. Gill netters generally fish near coastal rivers and inlets.

Licence conditions and commercial fishing plans lay out allowable gear characteristics such as hook styles, mesh size, net dimensions and the methods by which gear may be used.

Some First Nations have access to commercial opportunities through communal commercial licences issued under the ACFLRs. These licences are fished in a manner that is comparable to the general commercial fishery.

1.6. Governance

Departmental policy development related to the management of fisheries is guided by a range of considerations that include legislated mandates, judicial guidance and international and domestic commitments that promote biodiversity and a precautionary, ecosystem-based approach to the management of marine resources. Policies were developed with considerable consultation from those with an interest in salmon management. While the policies themselves are not subject to annual changes, implementation details are continually refined where there is general support.

1.6.1. Sustainable Fisheries Framework

The Sustainable Fisheries Framework (SFF) is a toolbox of existing and new policies for DFO to sustainably manage Canadian fisheries by conserving fish stocks while supporting the industries that rely on healthy fish populations. The SFF provides planning and operational tools that allow these goals to be achieved in a clear, predictable, transparent, inclusive manner, and provides the foundation for new conservation policies to implement the ecosystem and precautionary approaches to fisheries management. These new policies include:

- Managing the Impacts of Fishing on Sensitive Benthic Areas;
- New Fisheries for Forage Species;
- A Fishery Decision-Making Framework Incorporating the Precautionary Approach;
- The By-catch Policy and By-catch Policy Implementation Guidelines;
- Guidelines on Developing Rebuilding Plans; and
- Ecological Risk Assessment Framework for Cold-water Corals and Sponge.

For more information on the Sustainable Fisheries Framework and its policies, please visit: http://www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/fish-ren-peche/sff-cpd/overview-cadre-eng.htm

Policy Framework for the Management of Pacific Salmon Fisheries

Salmon management programs continue to be guided by the following policies: *Canada's Policy for Conservation of Wild Pacific Salmon* (WSP), *An Allocation Policy for Pacific Salmon*, Pacific Fisheries Reform, *A Policy for Selective Fishing*, *A Framework for Improved Decision Making in the Pacific Salmon Fishery*, and the Pacific Region Fishery Monitoring and Reporting Framework.

Canada's Policy for Conservation of Wild Pacific Salmon (the Wild Salmon Policy) sets out the vision regarding the importance and role of Pacific wild salmon as well as a strategy for their protection. More information on this can be found in Section 4.1.1 of this plan or at: http://www.pac.dfo-mpo.gc.ca/publications/pdfs/wsp-eng.pdf

An Allocation Policy for Pacific Salmon, announced in 1999, contains principles to guide the management and allocation of the Pacific salmon resource between First Nations, commercial and recreational harvesters, and forms the basis for general decision guidelines outlined in Section 5.1 of this plan.

Pacific Fisheries Reform, announced by the Department in April of 2005, provides a vision of a sustainable fishery where the full potential of the resource is realized, Aboriginal rights and title are respected, there is certainty and stability for all, and fishery participants share in the responsibility of management. Future treaties with First Nations are contemplated, as is the need to be adaptive and responsive to change. This policy direction provides a framework for improving the economic viability of commercial fisheries, to addressing First Nations aspirations with respect to FSC and commercial access and involvement in management. The "Vision for Recreational Fisheries in B.C." was approved January 2010 by DFO, the Sport Fishing Advisory Board (SFAB) and the Province of B.C. Guided by this Vision, an action and implementation plan is being developed to build upon the collaborative process established by the Federal and Provincial Governments and the SFAB. The document can be found on the DFO Pacific Region website at: http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/docs/rec-vision-eng.pdf.

In May 1999, the Department released *A Policy for Selective Fishing in Canada's Pacific Fisheries*. Under the Department's selective fishing initiative, harvester groups have experimented with a variety of methods to reduce the impact of fisheries on non-target species, with a number of measures reaching implementation in fisheries.

1.6.2. First Nations and Canada's Fisheries

The Government of Canada's legal and policy frameworks identify a special obligation to provide First Nations the opportunity to harvest fish for food, social and ceremonial purposes. The Aboriginal Fisheries Strategy (AFS) was implemented in 1992 to address several objectives related to First Nations and their access to the resource. These included:

- Improving relations with First Nations;
- Providing a framework for the management of the First Nations fishery in a manner that was consistent with the Supreme Court of Canada's 1990 *Sparrow* decision;
- Greater involvement of First Nations in the management of fisheries; and
- Increased participation in commercial fisheries.

The AFS continues to be the principal mechanism that supports the development of relationships with First Nations including the consultation, planning and implementation of fisheries, and the development of capacity to undertake fisheries management, stock assessment, enhancement and habitat protection programs.

The Aboriginal Aquatic Resources and Oceans Management (AAROM) program has been implemented to fund aggregations of First Nation groups to build the capacity required to coordinate fishery planning and program initiatives. AAROM is focused on developing affiliations between First Nations to work together at a broad watershed or ecosystem level where there are common interests and where decisions and solutions can be based on integrated knowledge of several Aboriginal communities. In the conduct of their activities, AAROM

bodies are working to be accountable to the communities they serve, while working to advance collaborative relationships between member communities, DFO and other interests in aquatic resource and oceans management.

As part of the reform of Pacific fisheries, DFO is looking for opportunities to increase First Nations participation in economic fisheries through an interest-driven business planning process. New planning approaches and fishing techniques will be required to ensure an economically viable fishery. In recent years some First Nations inland "demonstration fisheries" have occurred in order to explore the potential for inland fisheries targeting terminal runs of salmon. The Department is also working with First Nations and others with an interest in the salmon fishery to improve collaboration in the planning of fisheries and to improve fisheries monitoring, catch reporting and other accountability measures for all fish harvesters.

1.6.3. Pacific Integrated Commercial Fisheries Initiative (PICFI)

The Pacific Integrated Commercial Fisheries Initiative (PICFI) was announced in 2007 and is aimed at achieving environmentally sustainable and economically viable commercial fisheries, where conservation is the first priority and First Nations' aspirations to be more involved are supported. In its first 5 years, the Government of Canada committed $175 million to implement the initiative. It was renewed for 2012-13 and again for the 2013-2014 fiscal year. PICFI builds on fisheries reform work begun in response to the 2004 reports of the First Nations Panel on Fisheries and the Joint Task Group on Post-Treaty Fisheries, as well as subsequent discussions in a wide variety of forums that have confirmed the need for PICFI.

1.6.4. Fishery Monitoring and Catch Reporting

A complete, accurate and verifiable fishery monitoring and catch reporting program is required to successfully balance conservation, ecosystem and socio-economic and other management objectives. Across all fisheries, strategies are being developed to improve catch monitoring programs by clearly identifying information requirements and their supporting rationale for each specific fishery and evaluating the current monitoring programs to identify gaps. Managers and harvesters will annually work together to address those gaps. The Department finalized the "Strategic Framework for Fisheries Monitoring and Catch Reporting in the Pacific Fisheries" (the Framework) in spring of 2012. The Framework outlines how consistent risk assessment criteria can be applied to each fishery to determine the level of monitoring required, while allowing for final monitoring and reporting programs to reflect the fishery's unique characteristics.

1.7. Consultation

This plan incorporates the results of consultations and input from the Integrated Harvest Planning Committee (IHPC).The IHPC allows for First Nations, recreational and commercial advisors, and the Marine Conservation Caucus (MCC), which represents a coalition of "environmental" organizations to come together to discuss issues and concerns related to the management of salmon. Where possible, potential significant changes to provisions in the IFMP will be identified to the Integrated Harvest Planning Committee (IHPC) prior to implementation. However there may be times when changes will be made without prior notification.

Fisheries and Oceans Canada will continue to consult with First Nations (through the First Nations Salmon Co-ordinating Committee and other regional and bilateral processes), recreational and commercial harvesters, and the MCC to further co-ordinate fishing activities as the season unfolds.

Consultative elements of an Improved Decision Making discussion paper have been implemented through establishment of the Consultation Secretariat, which works to improve the flow of information between stakeholders and the Department. Up-to-date information pertaining to on-going consultations can be found on the Secretariat's website at: http://www.pac.dfo-mpo.gc.ca/consultation/index-eng.htm.

Further information on salmon consultations, including terms of reference, membership, meeting dates and records of consultation can be found on the Salmon Consultation website at: http://www.pac.dfo-mpo.gc.ca/consultation/fisheries-peche/smon/ihpc-cpip/index-eng.htm

1.8. Approval Process

This plan is approved by the Minister of Fisheries and Oceans Canada.

2. STOCK ASSESSMENT, SCIENCE AND TRADITIONAL ECOLOGICAL KNOWLEDGE

2.1. Biological Synopsis

Pacific salmon include five species belonging to the genus Oncorhynchus family Salmonidae: pink (*O. gorbuscha*), chum (*O. keta*), sockeye (*O. nerka*), coho (*O. kisutch*) and chinook (*O. tshawytscha*). The native range of Pacific Salmon includes the North Pacific Ocean, Bering Strait, south-western Beaufort Sea and surrounding fresh waters. They occur in an estimated 1300-1500 rivers and streams in B.C. and Yukon; notably, the Skeena River and Nass River in the north and the Fraser River in the south that account for about 75% of the total salmon production.

Pacific salmon are anadromous; salmon breed and spend varying portions of their life in fresh water, then travel to the ocean to feed until maturity. Physical characteristics, life histories and spawning habits vary from species to species. Total life spans range from two years (for pink)

up to six or seven years (for some sockeye and chinook). Pacific salmon migrate into rivers and streams to spawn from spring to fall; after courtship, eggs are released, fertilized and then buried in gravel. Both adults die after spawning. In mid-winter the eggs hatch into alevins. In spring, the young emerge and stay in freshwater streams and lakes from one week to two years. Most then go to sea for one to five years, undertaking a large ocean-feeding migration, although sockeye have also developed a land-locked form (kokanee). In the ocean, sockeye, pink and chum feed primarily on plankton and crustaceans such as tiny shrimp. Chinook and coho also eat smaller fish, such as herring. At sea, the species attain the following average adult weights: 1 to 3 kg for pink; 5 to 7 kg for chum; 3.5 to 7 kg for coho; 2 to 4 kg for sockeye; and 6 to 18 kg for chinook (the largest recorded chinook was 57.27 kg).

Pacific salmon complete their life cycle by returning to their natal stream to spawn, in many cases to the particular gravel bed where they were hatched. Homing of Pacific salmon to their natal stream is an important biological characteristic of salmon stocks. Each stock is genetically adapted to the environment in which it resides, and exhibits unique characteristics such as life history, migration route, migration timing, and productivity. Sockeye and chinook travel the farthest upstream to spawn, as far as 1,500 kilometers. Chum, coho and pink usually spawn closer to the sea. However, some chum salmon travel more than 3,200 km up the Yukon River.

The numbers of Pacific salmon returning to B.C. waters varies greatly from year to year and decade to decade, often with pronounced population cycles. For example, many sockeye salmon populations are very abundant every third or fourth year. This is seen most dramatically in the Fraser River, where the abundance of some populations in abundant years is many times larger than that of other years. Longer term cycles are also apparent but less regular and seem to be associated with changes in ocean conditions that affect survival during the feeding migration.

Chinook are the largest of the species and live the longest. Chinook migrate upstream from the spring through the fall as far as 1,500 kilometers inland. Chinook fry may go to sea soon after hatching or, after one to two years in freshwater. Chinook mature at age three to seven years. Jacks, defined as two-year-old sexually mature adults that return to spawn are common among chinook, coho and sockeye.

Adult coho generally return from late summer and early fall. Most choose streams close to the ocean, although some journey as far as 1,500 kilometers inland. In contrast to other salmon, young coho fry remain in their spawning stream for a full year after emerging from the gravel. Their age at maturity is normally three years.

Sockeye spawn in streams with lakes in their watershed, young sockeye spend between one and three years in a lake before migrating to sea. They move rapidly out of the estuaries and thousands of miles into the Gulf of Alaska and the North Pacific where they feed. They return to their natal spawning stream at ages three to six years. Chum salmon generally spawn in early winter usually in the lower tributaries along the coast, rarely more than 150 kilometers inland. Fry emerge in the spring and go directly to sea. Chum generally matures in their third, fourth, or fifth year.

Pink salmon live only two years almost entirely in ocean feeding areas. Adults leave the ocean in the late summer and early fall and usually spawn in streams not fed by lakes, a short distance from the sea. Fry migrate to the sea as soon as they emerge from the gravel.

All five Pacific salmon species are harvested in First Nations fisheries in coastal and inland areas. Coho and chinook are the preferred species in the BC coastal mixed-stock recreational and commercial hook-and-line fisheries, and to a lesser extent, are caught by gill and seine nets. Sockeye, pink and chum are harvested primarily by First Nations and commercial net fishermen, but also in recreational fisheries.

2.2. Ecosystem Interactions

As a consequence of their anadromous life history, salmon are sensitive to changes in both the marine and freshwater ecosystems. Salmon are an ecologically important species supporting vast food webs in oceanic, estuarine, freshwater and terrestrial, ecosystems by providing nutrients every year during their migration to the rivers and lakes to spawn.

DFO is moving away from management on a single species and moving towards an integrated ecosystem approach to science. Strategy 3 of the Wild Salmon Policy (WSP), Inclusion of Ecosystem Values and Monitoring, states the Department's intent to progressively incorporate ecosystem values in salmon management. Strategy 3 further identifies the actions required to incorporate ecosystem values as:

- Identify indicators (biological, physical and chemical characteristics) to use in monitoring the status of freshwater ecosystems, and
- Monitor annual variation in climate and ocean conditions, integrate the monitoring with assessments of marine survival of Pacific salmon, and incorporate this knowledge into the annual forecasts of salmon abundance and management processes.

The greatest challenge in implementation of the WSP is balancing the goals of maintaining and restoring healthy and diverse salmon populations and their habitats, with social and economic objectives that reflect people's values and preferences. Standardized monitoring and assessment of wild salmon populations, habitat and eventually ecosystem status will facilitate the development of comprehensive integrated strategic plans (WSP Strategy 4) that will address the goals of the WSP while addressing the needs of people. Outcomes of these plans will include biological objectives for salmon production from Conservation Units and, where appropriate, anticipated timeframes for rebuilding, as well as management plans for fisheries and watersheds, which reflect open, transparent, and inclusive decision processes involving First Nations, communities, environmental organizations, fishers and governments.

For strategic planning and successful management of Pacific salmon, it will be essential to link variation in salmon production with changes in climate and their ecosystems. Salmon productivity in the Pacific is clearly sensitive to climate-related changes in stream, estuary and ocean conditions. Historically, warm periods in the coastal ocean have coincided with relatively low abundances of salmon, while cooler ocean periods have coincided with relatively high salmon numbers. In the past century, most Pacific salmon populations have fared best in periods having high precipitation, deep mountain snowpack, cool air and water temperatures, cool coastal ocean temperatures, and abundant north-to-south upwelling winds in spring and summer.

The Department conducts programs to monitor and study environmental conditions. These programs include:

- Georgia Strait Ecosystem Research Initiative: http://www.pac.dfo-mpo.gc.ca/science/oceans/detroit-Georgia-strait/index-eng.htm
- Fraser River Watershed Watch,
- Monitoring of physical and chemical ocean conditions,
- Chlorophyll and phytoplankton timing and abundance.

The annual State of the Oceans Report reports on changes in atmospheric and oceanic conditions which have the potential to affect Pacific salmon populations and informs science-based decision-making and DFO's management of fisheries and marine resources in the Pacific Region.

2.3. Aboriginal Traditional Knowledge (ATK)/Traditional Ecological Knowledge (TEK)

Both Aboriginal Traditional Knowledge (ATK) and Traditional Ecological Knowledge (TEK) are cumulative knowledge gathered over generations and encompass regional, local and spiritual connections to ecosystems and all forms of plant and animal life. ATK is knowledge held by Aboriginal peoples and communities, while TEK is local knowledge held by Non-Aboriginal communities, including industry, academia, and public sectors. While qualitatively different both are cumulative knowledge that may also be gathered over generations and are regionally and locally specific and can often be utilized to improve the management process. The growing awareness of the value of ATK and TEK is reflected in the increasing requirements for both to be included in environmental assessments, co-management arrangements, species at risk recovery plans, and all coastal management decision-making processes. ATK and TEK may inform and fill knowledge gaps related to the health of salmon stocks and to aid decision making related to development and resource use. Government and the scientific community acknowledge the need to access and consider ATK and TEK in meaningful and respectful ways. However, the challenge for resource managers is how to engage knowledge holders and how to ensure that the information can be accessed and considered in a mutually acceptable manner, by both knowledge holders, and the broader community of First Nations, stakeholders, managers, and policy makers involved in the fisheries.

The Wild Salmon Policy acknowledges the importance of integrating Aboriginal Traditional Knowledge and Traditional Ecological Knowledge into the strategic planning process. The Department is exploring best practices to develop an approach for incorporating ATK and TEK into WSP integrated planning. The Department will also consider identifying potential partnerships with First Nation organizations to develop an approach for integrating ATK into WSP, particularly in planning initiatives.

In 2008, the Department established the National Centre of Expertise—Traditional Ecological Knowledge (CETEK). Its mandate is to provide the Department with leadership and guidance on the use of ATK and TEK for integrated ocean and coastal management. CETEK defines Traditional Knowledge as the knowledge, practices and beliefs acquired through long term observations and experiences, and the wisdom to apply and adapt the observations and experiences to a dynamic environment. Objectives of CETEK include development of a National Strategy to guide the way the Department gathers and uses ATK and TEK and a guidebook on how to acquire both, integrate with scientific data, and make recommendations on

how best to engage Aboriginal and community knowledge holders in the planning and implementation of ocean and coastal management.

The Species at Risk Act makes a special reference to the inclusion of Traditional Knowledge in the recovery of species at risk. The Department has developed an operational guidance document for SARA practitioners (Guidance on Considering Traditional Knowledge in Species at Risk Implementation, 2011). Aboriginal groups have participated in the development and implementation of Interior Fraser River coho and Cultus Lake sockeye salmon species recovery strategies.

2.4. Stock Assessment

Salmon stock assessment is primarily concerned with providing scientific information for conservation and management of salmon resources. Stock assessment describes the past and present status of salmon stocks and forecasts future status of stocks under different scenarios. Stock assessment programs contribute information to the fisheries management process, from the initial setting of objectives (and policies) to providing expert advice in the implementation of management plans. Stock assessment information also supports First Nation and Treaty obligations, integrated ocean management planning, development of marine protected areas, protection and recovery of species at risk, and international Treaty obligations and negotiations.

Historically, stock assessment has primarily focused on population dynamics of individual exploited stocks, the biological and population processes such as growth, reproduction, recruitment and mortality. As DFO moves to implementation of an ecosystem approach, populations must be considered in a broader context and all activities impacting status, not just fishing, must be considered. Programs are required to monitor ecosystem status, species interactions, variations in conditions in marine environments and biodiversity.

In the Pacific Region, salmon stock assessment advice is provided through the Salmon Assessment Section of the Salmon and Freshwater Ecosystem Division. The Stock Assessment Coordinating Committee (SACC) serves as the principal forum in the Region for regional planning and coordination of salmon stock assessment programs across the Region's Organizational Areas, while the operational programs are delivered by the Area-based staff. Delivery of the region-wide salmon assessment program requires scientific and technical expertise to design and lead assessment projects, conduct related research and development, analyse data and report information, provide advice, and communicate internally and externally.

External partners and clients play an increasing role in delivery of the stock assessment activities. Some First Nations, recreational and commercial harvesters contribute directly through data collection and reporting. First Nations and community groups conduct field data collection projects. Universities and non-government organizations (NGOs) are active in the analytical and peer review elements. Stock assessment staff collaborates with other regional, national and international organizations and conduct numerous cooperative and/or joint programs.

The Salmon Stock Assessment Framework is shaped by the WSP Strategy 1 which specifies requirements for standardized monitoring, status & management predicated on benchmarks. Strategy 1 identifies three elements:

- WSP Strategy 1 provides a standardized process for organizing Pacific salmon into Conservation Units (CUs), groups of wild salmon living in an area that are sufficiently isolated from other wild salmon such that the area is unlikely to be recolonized naturally in an acceptable period of time if they are extirpated. Scientists have grouped the greater than 9,600 Pacific salmon stocks into just over 450 discreet Conservation Units.
- The DFO (Holt et al 2009) has developed criteria to assess CUs and identified a range of metrics for setting upper and lower CU benchmarks of status, dependent on data quality and availability. For each metric, lower and upper benchmarks will delimit three status zones of a CU. Management actions will determined based on a CU's biological status relative to these benchmarks. Management will be focused on conservation measures for CU's in the red zone (i.e. below the lower benchmark), shift to cautionary management in the amber zone (between the lower and upper benchmark), and emphasizes sustainable use in the green zone (i.e. above the upper benchmark).
- A key requirement of the WSP is ongoing monitoring and assessment of the status of wild salmon CUs. Monitoring wild salmon status in a cost-effective manner poses a challenge. It is not practical or cost effective to monitor all salmon demes. (A deme, as defined in the WSP, is a term for a local population of organisms of one species that actively interbreed with one another and share a distinct gene pool.) When groups of CUs are exposed to common threats, the approach will be to monitor a subset of these units. Annually, the assessment monitoring plans are updated by the SACC based on CU status determination and risks. The CU status will generally determine the frequency and intensity of the assessment effort. For example, when a CU falls within the Red Zone, ongoing annual assessment of its status including fishery and habitat impacts may be required. The SACC is developing a database that describes benchmarks, status, major risk factors, resource management objectives, and assessment requirements. Assessment procedures will build on existing programs and local partnerships.

The vast number of stocks and the complex life cycle of salmon present substantial assessment and management challenges. Stock assessment activities are largely project based and required on a continual basis because populations are dynamic and subject to shifts in productivity and abundance in response to environmental, biological, and human-induced factors. Responsible management requires continual updating of assessment information and advice. Scientists use a variety of techniques to generate estimates and forecasts of abundance (enumeration of juvenile "recruits", females or adults on the spawning grounds, tagging and mark recapture studies, etc.). For most species, several methods may be used to generate the estimates and forecasts of abundance.

The Centre for Scientific Advice Pacific (CSAP) Salmon Subcommittee serves as the primary regional forum for peer review and evaluation of scientific research and literature, including TEK, on wild Pacific salmon. CSAP fosters national standards of excellence and coordinates the peer review of scientific assessments and advice for the DFO in the Pacific region. This review body allows for participation by outside experts, First Nations, fisheries stakeholders and the

public. CSAP also coordinates communication of the results of the scientific review and advisory processes. Reports on the status of salmon, environmental and ecosystem overviews, and research documents are available from CSAP web site. (http://www.pac.dfo-mpo.gc.ca/sci/psarc/Default.htm)

Data Sources

Existing reports on the status of salmon and the environmental and ecosystem overviews are available from CSAP web site. (http://www.pac.dfo-mpo.gc.ca/sci/psarc/Default.htm)

Annually, DFO provides a preliminary qualitative outlook of status for salmon management units, the Salmon Outlook, for planning purposes prior to formal forecasts of abundance. The Outlook is available on the DFO website:
http://www.pac.dfo-mpo.gc.ca/fm-gp/species-especes/salmon-saumon/research-recherche/index-eng.htm.
Formal salmon abundance forecasts are generally completed by April.

DFO is continuing to implement WSP Strategy 1.2, determination of benchmarks. This work is labour and data intensive. In 2010, benchmarks for Fraser Sockeye were reviewed by the CSAP salmon subcommittee. DFO has scheduled review of benchmarks for Southern B.C. chinook in 2013 and Southern B.C. coho in 2013.

As a prelude to the establishment of WSP benchmarks, a methodology for a Synoptic Assessment of salmon status based on productivity trends was reviewed and approved by CSAP review in 2011.

2.5. Precautionary Approach

Generally, science advice to fisheries management considers data quality and incorporates uncertainty (i.e. stock status forecasts presented as a statistical distribution rather than point estimate). WSP benchmarks of biological status will inform the development of a precautionary approach to management of salmon resources. Decisions on recovery and fisheries objectives will be made as part of the Strategic Planning Process described under WSP Strategy 4. To date benchmarks have been reviewed for Fraser sockeye CUs and work is underway on WSP pilots in Barkley Sound and the Skeena watershed. Until benchmarks are determined for each CU, DFO must rely on indicators of status and existing species and stock-specific constraints established for escapement goals and harvest rates by domestic (e.g. Interior Fraser River coho Conservation Strategy, Cultus Lake Sockeye Conservation Strategy) and international (e.g. Pacific Salmon Treaty) processes.

2.6. Research

An overview of the science & research in the Pacific region is available on the regional website:
http://www.pac.dfo-mpo.gc.ca/science/index-eng.htm

Current research projects on salmon and environmental and human induced factors affecting their status include:

- Climate change impacts on Pacific salmon are being investigated by multiple sectors within DFO and in collaboration with external partners: university, other organizations and

agencies. In 2011, DFO implemented a science-based climate change program focused on adaptation in decisions and activities to consider the vulnerabilities, risks, impacts, and opportunities associated with a changing climate. http://www.pac.dfo-mpo.gc.ca/science/oceans-eng.htm. An example of this work is the Aquatic Climate Change Adaptation Services Program (ACCASP) which has an emphasis on the development of new science knowledge to support the development of adaptation tools and strategies that will enable the integration of climate change considerations into the delivery of the Department's programs and policies. More information on this program is available at: http://www.dfo-mpo.gc.ca/science/oceanography-oceanographie/accasp/index-eng.html.

- Salmon in Regional Ecosystems (SIRE) program investigates the mechanisms controlling recruitment variations and changes in productive capacity of salmon stocks within freshwater and/or marine ecosystems.
- On-going research related to improving forecasting ability for salmon stocks and CUs is being conducted by DFO Stock Assessment and the Fisheries & Oceanography Working Group. The annual State of the Pacific Ocean Report is published by the Canadian Science Advisory Secretariat (CSAS) and is available at:
- http://www.pac.dfo-mpo.gc.ca/science/oceans/reports-rapports/state-ocean-etat/index-eng.htm.
- The Fraser River Environmental Watch program provides scientific advice on the impact of different environmental factors on the migration success of Pacific salmon in fresh water. http://www.pac.dfo-mpo.gc.ca/science/habitat/frw-rfo/publications-eng.htm
- DFO scientists in collaboration with other organizations including the North Pacific Anadromous Fisheries Commission (NPAFC) and the Pacific Salmon Commission (PSC) are studying salmon production, distribution and survival in North Pacific.
- Annual juvenile salmon surveys monitor the distribution and survival of salmon in their early marine life history.
- The Coded-Wire Tag Improvement Team program is a 5-year program that began in 2009 to improve the quality and quantity of data used to monitor the survival, production, and fishing impacts on chinook salmon as part of the 2008 Pacific Salmon Treaty Agreement.
- In the Sentinel Stocks Program, spawning escapements for natural chinook salmon stocks in Northern B.C. (Skeena and Nass rivers), Fraser River, and West Coast of Vancouver Island are being closely monitored to provide critical information and assessment of the salmon resource as part of the 2008 Pacific Salmon Treaty Agreement.

3. SOCIAL, CULTURAL AND ECONOMIC IMPORTANCE

The intent of this section is to provide a socio-economic review of the salmon fishery in British Columbia. In future years, information on the social and cultural context of the various fisheries can be added, where available. This summary addresses salmon in the context of the Aboriginal food, social, and ceremonial fishery, the Aboriginal communal commercial fishery, the recreational and commercial fishing sectors, the processing sector and the export market. DFO recognizes the unique values of each of the fisheries described here. The overview provided in this profile is intended to help build a common understanding of the socio-economic dimensions of each fishery rather than compare the fisheries. Where possible this summary highlights information specific to the South Coast.

3.1. Aboriginal Participation

Generally, DFO manages aboriginal fisheries to provide access for both food, social, and ceremonial (FSC) and for commercial purposes. With respect to fishing for FSC purposes, DFO manages this fishery to ensure that after conservation needs are met, the FSC fishery has priority over other fisheries. DFO seeks to provide priority for the FSC fishery in order to ensure that its management is consistent with the Supreme Court of Canada (SCC) decision in R. v. Sparrow, and subsequent case law, which found that where there is an aboriginal right to fish for FSC purposes, this fishery must be given priority over other uses.

Fisheries chapters in modern First Nation treaties may articulate a treaty fishing right for FSC purposes that could be protected under Section 35 of the Constitution Act, 1982. Commercial access may be provided either through the general commercial fishery or a Harvest Agreement, which is negotiated at the same time as the treaty and is referenced in the treaty, but is not protected under the Constitution Act.

Three modern treaties (Nisga'a Final Agreement, Tsawwassen First Nation Final Agreement (TFA), and Maa-nulth First Nations Final Agreement (MNA)) have been ratified in British Columbia. These agreements articulate a treaty right to food, social and ceremonial harvest of fish and describe the role for First Nations in fisheries management.[1]

In addition to fishing opportunities for FSC purposes, there is a strong interest by most First Nations in B.C. to economic opportunities offered by fisheries. Also, five Nuu-chah-nulth First Nations have established the right to fish and sell that fish into the commercial marketplace.

Appendix 5 provides background and details with regard to the Southern BC/Fraser River First Nations Fishing Plan.

Fisheries and Oceans Canada consults with First Nations, stakeholders and Canadians on matters of interest and concern to them. Consulting is an important part of good governance, sound policy development and decision-making. In addition to good governance objectives, Canada has statutory, contractual and common law obligations to consult with Aboriginal groups.
Consultation and engagement with First Nations includes participation on a number of levels and in a variety of ways. These exchanges and involvement may include bilateral consultations, advisory processes, management boards, technical groups and other roundtable forums.

Through the AFS Program, the Department provides Food, Social and Ceremonial (FSC) fishery access to aggregate groups or individual First Nations through fisheries agreements and communal licences. Where requests are put forward by First Nations for changes in FSC access, these requests are evaluated in consideration of conservation requirements, fisheries management considerations (e.g., fisheries monitoring and catch reporting), First Nations community size, potential implications for other Aboriginal groups, historical information relevant to the request,

[1] Details of the Nisga'a Final Agreement can be found at http://www.ainc-inac.gc.ca/al/ldc/ccl/fagr/nsga/nis/nis-eng.asp. Details of the TFA and MNA agreements can be found on the B.C. Treaty Commission website at www.bctreaty.net.

current access provided (all species), the First Nations trends in harvest and other factors. FSC access should reflect some balance between the diversity and abundance of resources that are locally available, community needs and preferences, and operational management considerations.

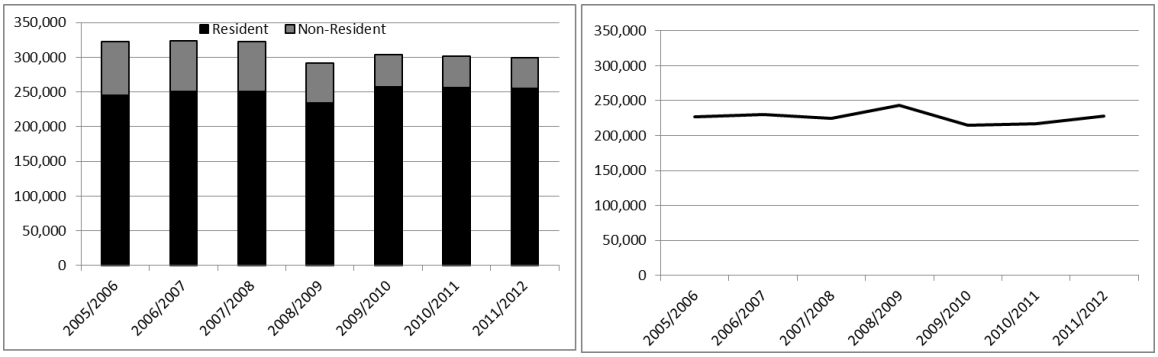
AFS agreements serve as a guide for DFO and First Nations on the collaborative management of First Nations fisheries, and support a range of fishery co-management arrangements. Currently the Pacific Region accounts for roughly two-thirds of these agreements Canada-wide. In the region, there are 87 AFS agreements, representing 169 First Nations that contain provisions relating to salmon management including, but not limited to, FSC fishery arrangements. Among the areas, B.C. Interior has 19 agreements, Lower Fraser has 14, North Coast has 19, South Coast has 30, and the Yukon has 5. In addition to AFS, the Aboriginal Aquatic Resources and Oceans Management Program (AAROM) provides funding to qualifying Aboriginal groups to form aquatic resource and oceans management organizations capable of hiring or contracting skilled personnel to allow them to participate effectively in decision-making and advisory processes. For 2012-2013, there are 19 AAROM agreements in the Pacific Region, 3 of which are in the South Coast, 1 in the Lower Fraser, and 5 in the B.C. Interior.

3.2. Recreational Sector

Recreational fishing for salmon may occur to provide food for personal use, as a leisure activity, or as a combination of the two. These activities provide a range of benefits to the participants as well as contribute directly and indirectly to the economy. Based on the 2010 Survey of Recreational Fishing in Canada, tidal water recreational fishing led to over $689 million dollars in expenditures and major purchases in British Columbia. Respondents reported that salmon accounted for roughly 63% of the fish caught and 65% of the fish kept.

In order to fish for salmon an angler needs either a tidal or a freshwater licence; however, in order to keep salmon the licence must also have a Pacific Salmon Conservation (PSF) Stamp. Since undertaking 2005 Survey of Recreational Fishing in Canada, there has been a decline in the total number of tidal water licences issued by DFO, largely driven by a substantial decline in non-resident licences between 2007/08 and 2008/09. In fact, licence data show that the number of non-resident licences sold annually has declined almost continuously since 1999, dropping by 50% over the past 3 years, though the number of licences sold has been relatively stable over the past three years (Figure 3-1, below). . The number of PSF Stamps also declined from 2008/09 to 2009/10, but has since made a partial recovery.

Figure 3-1: Tidal Water Recreational Fishing Licences (left) and Pacific Salmon Conservation Stamps (right) Sold, 2005/06 to 2011/12



Source: DFO. http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/licence-permis/stat-eng.htm

The Survey of Recreational Fishing in Canada provides an estimate of individual expenditures and investment for recreational fishing. Historically, the combined tidal and freshwater fisheries of BC were the second largest recreational fisheries in Canada in terms of direct and package expenditures, and third largest in terms of investments. While resident anglers have the largest expenditures, recreational fishing by non-residents adds money to the provincial economy. In 2010, non-resident direct expenditures (including fishing packages) and investments totalled $139,772,544. This number understates the contribution of non-resident tidal water anglers, however, as it only includes expenditures directly attributable to their fishing experience[2]. Fishing opportunities in BC's tidal waters draw Canadian and international tourists to the province: of 47,269 non-resident anglers surveyed in 2010, 40% reported that they would not have come to British Columbia at all if there had been no opportunities for tidal water angling[3]. A further 19% would have shortened their stay in the province.

[2] British Columbia's Fisheries and Aquaculture Sector (2007) reports that non-resident participants in recreational tidal water fishing also spend money on, for example, shopping, cultural events and attractions (such as museums and the theatre), and sightseeing at locations other than where they go fishing.

[3] This can be further broken down into Canadian non-residents and international non-residents. Opportunities for tidal water recreational fishing are more important to international visitors: 47% of them reported they would not have come to BC had there not been tidal water fishing opportunities, while 32% of Canadian visitors would not have come.

Figure 3-2: Recreational Fishing Direct and Package Expenditures and Investments,

	2000			
	Direct Expenses	Packages	Investments	Total
Resident	$ 129,513,617	$ 20,829,900	$233,407,011	$ 383,750,528
Canadian non-resident	$ 28,293,594	$ 24,237,348	$ 28,830,187	$ 81,361,130
Other non-resident	$ 61,154,508	$ 50,223,031	$ 14,438,282	$ 125,815,820
Total	$ 218,961,718	$ 95,290,279	$276,675,480	$ 590,927,478
	2005			
	Direct Expenses	Packages	Investments	Total
Resident	$ 153,780,700	$ 43,304,153	$267,848,852	$ 464,933,705
Canadian non-resident	$ 34,623,490	$ 40,512,949	$ 12,728,288	$ 87,864,726
Other non-resident	$ 49,623,447	$ 66,637,576	$ 8,315,313	$ 124,576,335
Total	$ 238,027,636	$ 150,454,678	$288,892,453	$ 677,374,766
	2010			
	Direct Expenses	Packages	Investments	Total
Resident	$ 193,406,654	$ 48,990,029	$307,528,573	$ 549,925,257
Canadian non-resident	$ 32,092,869	$ 24,373,167	$ 18,113,242	$ 74,579,277
Other non-resident	$ 32,249,672	$ 28,065,161	$ 4,878,434	$ 65,193,267
Total	$ 257,749,195	$ 101,428,357	$330,520,249	$ 689,697,801

Source: Survey of Recreational Fishing in Canada, multiple years

Figure 3-2 (above) shows the expenditures by resident and non-resident anglers from 2000 to 2010, adjusted to reflect constant 2009 dollars. Though recreational fishing continues to be important to the B.C. economy, the rate of growth is slowing: total expenditures and investments grew by nearly 15% from 2000 to 2005, but by only 1.82% from 2005 to 2010. This slowdown is due mainly to a drop in visits (and therefore expenditures) to B.C. by non-resident anglers, particularly other (i.e. international) non-resident anglers whose total expenditures in B.C. dropped by 47% between 2005 and 2010. Expenditure on fishing packages by resident anglers has increased considerably over the past decade; in real terms, it increased by over 135% between 2000 and 2010 and B.C. residents are now the primary consumers of fishing trip packages in the province.

Additional information on the history and vision for recreational fisheries can be found in the document "Vision for Recreational Fisheries in B.C.": http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/docs/rec-vision-eng.pdf

3.3. Commercial Sector

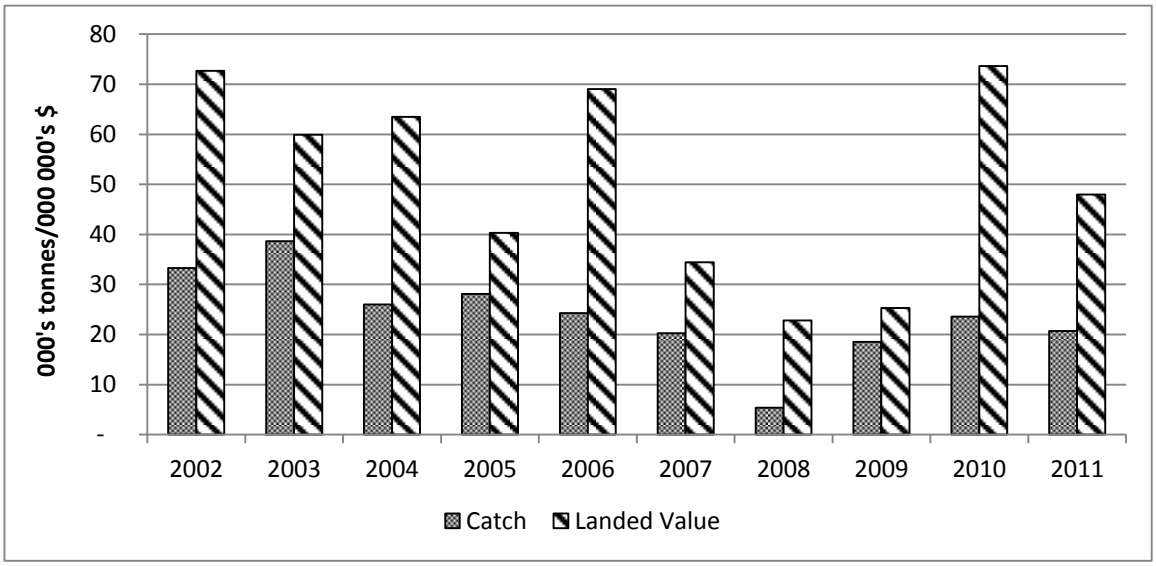
In B.C., the salmon fishery is a limited access, competitive fishery[4]; however, several parts of the fishery have operated under individual quotas during the past five years. Since 2005, five areas using seine, troll or gill net gear have participated in demonstration fisheries with alternative implementations of individual quotas or pooling arrangements. In addition, there have been several commercial First Nations economic opportunity and demonstration fisheries in inland

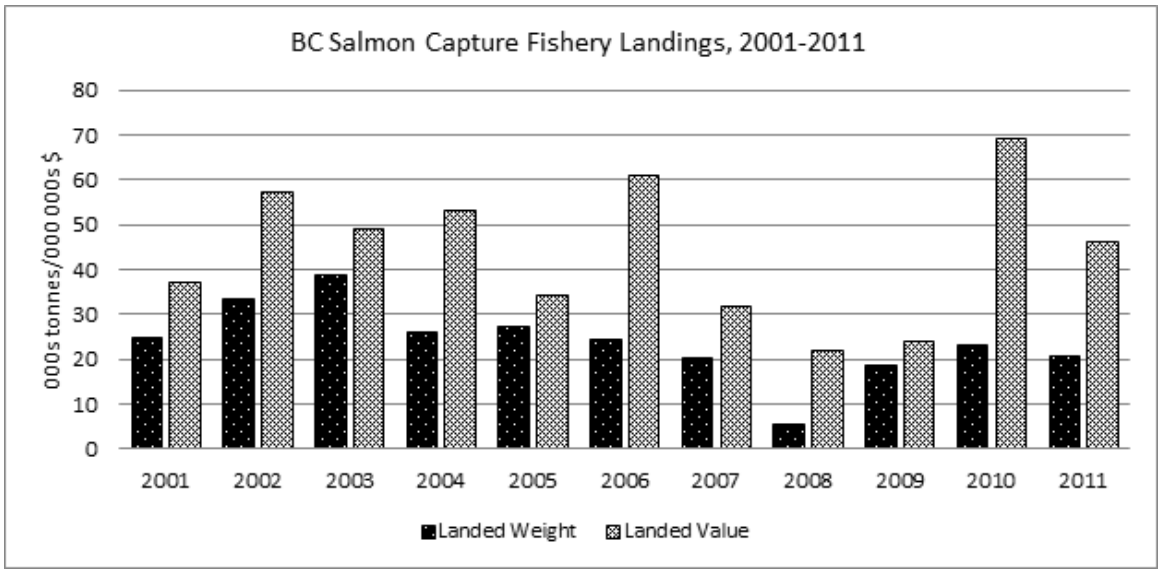
[4] Other names for this style of fishery include derby and Olympic style fishery.

areas. Commercially-harvested salmon supports B.C.'s seafood processing sector, much of which is ultimately exported, bringing new money into the province.

During the last decade, salmon contributed an average of 12.7% of the landed value and 11.7% of the volume of B.C. wild caught seafood. In 2011 dollars, the value ranged from a high of $73.6 million in 2010 to a low of $22million in 2008 (Figure 3-3, below). On average, sockeye was the most important species in terms of landed value, followed by chum and then chinook.

Figure 3-3: Pacific Region salmon harvest and landed value (2011 dollars)



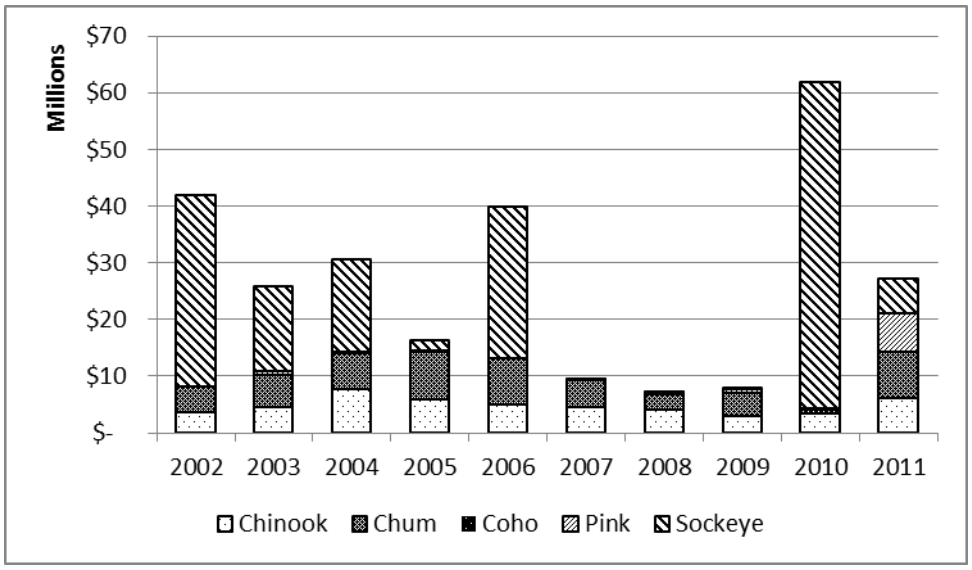


Source: B.C. Seafood Year in Review.
Note: "Salmon" here refers to salmon harvested by commercial fisheries and does not include aquaculture production.

In the decade preceding 2010, the South Coast fishery was responsible for an average of 35% of the volume of salmon landings and 40% of the landed value. However, the record Fraser River

sockeye run in 2010 meant that the South Coast accounted for 84% of the landed value in that year[5]. Like landings, the landed value of the South Coast salmon harvest has been variable and does not have an overall trend up or down (Figure 4, below). The most significant impact is due to the collapse of the Fraser sockeye harvest in 2007 to 2009.

Figure 3-4: South Coast salmon value by species, 2002-2011 (2011 dollars)



Source: DFO Pacific, Regional Data Unit.

Salmon licence values declined steadily from 2005 to 2010, reflecting poor returns to the fleet.[6] Licence values increased in 2011 due to improved outlook for the sockeye fishery (including the record run in 2010) and higher prices for pink and chum salmon[7]. A 2007 snap shot of the financial performance of the fleet indicated negative overall returns for gill net and seine fleets in the absence of diversification into other fisheries;[8] this was reiterated in the 2009 financial snapshot[9]. The results also suggested a positive financial performance for the troll fleet, which was enhanced further by participation in other fisheries. Breaking down the analysis by licence area, however, it is apparent that the South Coast troll is smaller and less productive than the B.C. average and does not generate positive earnings from its salmon harvest[10]. It should be noted that these analyses of the Pacific's commercial fisheries occurred in years of particularly low harvest of high-value species for the salmon fisheries and are not representative of the

[5] Consequently, the new 10-year average (2001-2010) has the South Coast accounting for 40% and 49% of landed volume and value, respectively.

[6] Nelson, Stuart. 2010. West Coast Fishing Fleet: Analysis of Commercial Fishing Licence, Quota, and Vessel Values as of March 31, 2010. http://www.dfo-mpo.gc.ca/Library/342459.pdf

[7] Nelson, Stuart. 2011. West Coast Fishing Fleet: Analysis of Commercial Fishing Licence, Quota, and Vessel Values as of March 31, 2011.

[8] Nelson, Stuart. 2009. Pacific Commercial Fishing Fleet: Financial Profiles for 2007. http://www.dfo-mpo.gc.ca/Library/343814.pdf

[9] Nelson, Stuart. 2011. Pacific Commercial Fishing Fleet: Financial Profiles for 2009. http://www.dfo-mpo.gc.ca/Library/343762.pdf

[10] Gislason, Gordon. 2011. British Columbia's salmon fleet financial profile 2009. http://www.dfo-mpo.gc.ca/Library/343812.pdf.

salmon fleet's performance over the past decade. Detailed tables for each fleet (gill net, seine and troll) are available within both documents (Nelson, 2009 & 2011), and are available by licence area in Gislason, 2011.

Aboriginal commercial harvest opportunities are managed on the same priority as the commercial fishery. The landings and value attributable to Aboriginal commercial harvest are included in the values reported for the commercial sector above. Participation in the commercial salmon fishery provides economic benefits to Aboriginal communities and individuals from fishery revenues and employment-generated income.

Aboriginal participation within the commercial salmon fishery occurs under four licence categories (A, A-I, N, and F). Licence categories (N and F) provide similar fishing privileges as A licence eligibilities, but are non-transferable and are intended to be held permanently for the benefit of the recipient First Nations communities. Both licence categories allow Aboriginal communities to designate vessels and individual fish harvesters to carry out the fishing. The Northern Native Fishing Corporation holds 254 gillnet licences (Category N), of which 61 were in the South Coast in 2012. Of the 477 F salmon licence allocated in 2012, 287 are for the South Coast.

In addition, an Aboriginal vessel owner may elect to pay a reduced fee for a category A licence; thereafter only an Aboriginal may own the vessel. Since 2005, an average of 7% of commercial licences in the South Coast, were reduced fee licences.

Since 1994, DFO has acquired a total of 504 commercial salmon fishing licence eligibilities through a voluntary relinquishment process. Once acquired by DFO, licence eligibilities are converted to communal commercial (category F) licence eligibilities and used to support various Aboriginal programs and initiatives including the Aboriginal Fisheries Strategy (AFS), the Allocation Transfer Program (ATP), the Pacific Integrated Commercial Fisheries Initiative (PICFI), First Nations Inland Demonstration Fisheries projects, Economic Opportunity Fishery arrangements and treaties. In the 2012 season, 155 communal commercial salmon licence eligibilities were issued to First Nations under the AFS and ATP, 45 were issued under PICFI, 256 were used to offset First Nations Inland Demonstration Fisheries projects and Economic Opportunity Fishery arrangements with First Nations in the lower Fraser and Somass Rivers, and 21 were used for treaties or other contingencies. The Demonstration Fisheries proposed for 2013 are described in Appendix 5 (section 5.5).

The Tsawwassen First Nations and Maa-nulth First Nations also have commercial fisheries covered by Harvest Agreements outside of their Treaties. The Tsawwassen agreement came into effect in April 2009, and the Maa-nulth agreement came into effect in April 2011.

3.4. Processing Sector

Since 2000, salmon accounted for an average of 25% of the total wholesale value from seafood processing in BC[11]. Processing wild caught salmon provided about 1,394 positions in 2011 or about 30% of the B.C. total[12]. A 2008 report estimates that approximately 80% of employment is to process domestic landings, with processing occurring primarily in the Greater Vancouver (47%) and the Skeena-Queen Charlotte (38%) regional districts.[13] Most salmon harvested in the South Coast areas went to processing facilities in the Greater Vancouver Regional District; however, substantial amounts of chum, coho, pink and sockeye caught along the central coast were processed in the Skeena-Queen Charlotte Regional District. Nanaimo and Comox-Strathcona regional districts were important processing locations for some parts of south coast harvest.

3.5. Export Market

British Columbia benefits from a strong seafood exports sector, valued at $957M[14] in 2010, which is supplied by the domestic wild harvest, aquaculture and raw imports. Abundant sockeye in 2010 led to over $100M in exports, more than 10% of the value of all B.C. seafood exports, and the highest-value wild-harvested species exported from the province. Over the five-year period from 2007 to 2011, B.C. exported wild salmon to some 58 countries. On average over this period, the United States accounted for 36% of the export value ($41 million in 2011 dollars), followed by Japan (19% and $22 million) and the United Kingdom (17% and $19 million). (See Figure 3-5, below)

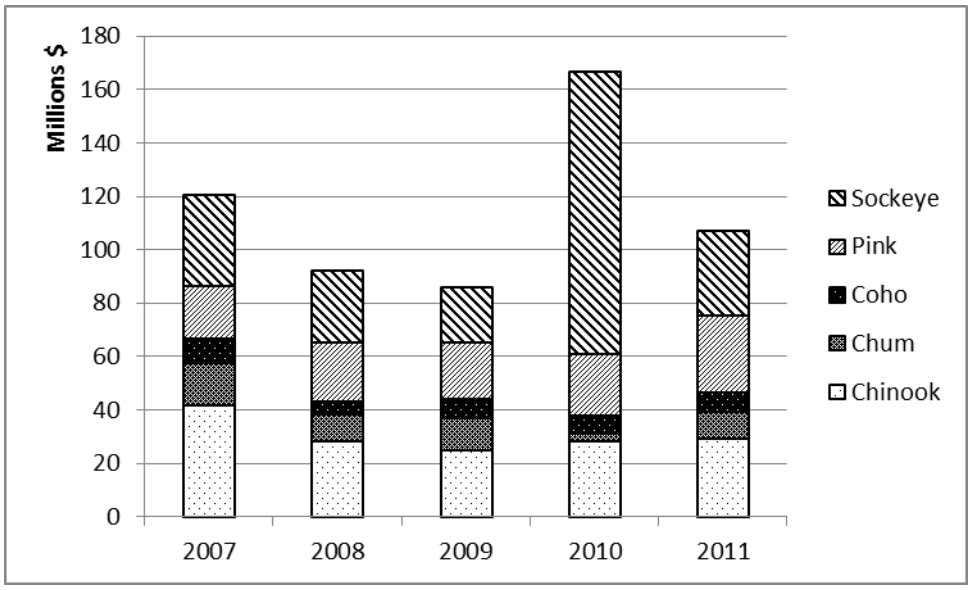
[11] British Columbia Seafood Industry Year in Review. Various years. BC Ministry of Environment. http://www.env.gov.bc.ca/omfd/index.html

[12] BC Ministry of Environment. 2012. 2011 British Columbia Seafood Processing Employment Survey Results. http://www.env.gov.bc.ca/omfd/fishstats/proc/employ-05.html

[13] Fraser and Associates. 2008. Linkages Between the Primary Fish Production and Fish Processing Sectors in British Columbia. The actual % of wild salmon processing employment supported by domestic landings varies greatly year-to-year.

[14] British Columbia Seafood Industry Year in Review. (2010).

Figure 3-5: Salmon Export Value by Species, 2007-11 (2011 dollars)



Source: Statistics Canada. January 2012.

Salmon export value declined by approximately 49% between 2005 and 2009, followed by a lucrative year fuelled by abundant sockeye. While all other species experienced an overall decline between 2005 and 2010, it was not uniform. The values for coho and pink salmon were the least affected, with declines of 14% and 16% respectively. In contrast, the export values for chinook and chum have declined by 54% and 91%, respectively. Exports to Japan are closely correlated to sockeye landings. From 2005 to 2009 average salmon exports to Japan were $9.3 million, but in 2010 were valued at $58 million during a time of record sockeye landings.

4. MANAGEMENT ISSUES

4.1. Conservation

Given the importance of Pacific salmon to the culture and socio-economic fabric of Canada, conservation of these stocks is of utmost importance. In order to achieve this, specific actions are taken to not only ensure protection of fish stocks, but also freshwater and marine habitats. Protecting a broad range of stocks is the most prudent way of maintaining biodiversity and genetic integrity.

Management of a natural resource like salmon has a number of inherent risks. Uncertain forecasting, environmental and biological variability as well as changes in harvester behaviour all add risks that can threaten conservation. Accordingly, management actions will be precautionary and risks will be specifically evaluated where possible.

4.1.1. Wild Salmon Policy

The WSP, which was approved in 2005, sets out a process for the protection, preservation and rebuilding of wild salmon and their marine and freshwater ecosystems for the benefit of all Canadians. The goal of Canada's Wild Salmon Policy (WSP) is to restore and maintain healthy and diverse salmon populations and their habitats for the benefit and enjoyment of the people of Canada in perpetuity. Key elements of the policy include:

- Conservation is the highest priority for resource management;
- Ecosystem considerations will be incorporated in decision making;
- An inclusive planning process will be established to ensure objectives of the WSP are met and choices about salmon conservation reflect societal values; and
- Conservation goals will be clearly defined and progress in achieving them will be publicly evaluated.

A number of steps have been taken towards implementation of the WSP in recent years, including the identification of conservation units for British Columbia and Yukon, the development of science-based methodologies and indicators to assess the status of conservation units and their habitat, the development of habitat status reports in key watersheds, and the application of ecosystem objectives and indicators in strategic planning initiatives such as the Barkley-Alberni Planning Initiative.

Additional details regarding WSP and its implementation can be found at: http://www.pac.dfo-mpo.gc.ca/fm-gp/species-especes/salmon-saumon/wsp-pss/index-eng.htm

4.2. International Commitments

4.2.1. 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.

The Pacific Salmon Commission, established under the Pacific Salmon Treaty, provides regulatory and policy advice as well as recommendations to Canada and the United States (US) with respect to interception salmon fisheries. Under the terms of the Treaty, the responsibility for in-season management of all species rests with the Parties to the agreement. One exception is the in-season management of Fraser River sockeye and pink salmon which is specifically delegated to the Fraser River Panel with assistance from the Pacific Salmon Commission.

To properly account for the full impact of fishing on chinook and coho stocks, the Pacific Salmon Treaty specifies that all parties develop programs to monitor all sources of fishing related mortality on chinook and coho. Catch monitoring programs are being modified to include estimates of encounters of all legal and sub-legal chinook and coho, as well as other salmon species, in all fisheries.

Coded-wire tag data are essential to the management of chinook and coho salmon stocks under the Pacific Salmon Treaty. In 1985, the United States and Canada entered into an August 13,

1985 Memorandum of Understanding in which "the Parties agree to maintain a coded-wire tagging and recapture program designed to provide statistically reliable data for stock assessments and fishery evaluations". Both countries recognize the importance of the coded-wire tag program to provide the data required to evaluate the effectiveness of bilateral conservation and fishing agreements. An expert panel review concluded the coded-wire tag system is the only technology currently capable of providing the data required for Pacific Salmon Treaty management regimes for chinook and coho salmon, thus confirming the approach being employed. The expert panel's full report may be found at http://www.psc.org/pubs/psctr18.pdf .

> The chapters in Annex IV outline the joint conservation and harvest sharing arrangements between Canada and the US for key stocks and fisheries subject to the Treaty. On December 23, 2008, Canada and the US ratified new provisions for five chapters under Annex IV of the Pacific Salmon Treaty. These new chapters came into effect on January 1, 2009. Chapter 4, which covers Fraser River Sockeye and Pink salmon, was set to expire on December 31, 2010, however an Order in Council, and the corresponding exchange of diplomatic notes, allowed for the extension of the chapter until December 31, 2013.

All management regimes under Annex IV continue to be implemented by Fisheries and Oceans Canada and US agencies for the 2013 season. Key details from the chapters under Annex IV relevant to the South Coast are identified, below:

Chapter 3 (Chinook salmon): Building on improvements made in 1999, the current chapter maintains an abundance-based management regime for chinook, including the existing aggregate abundance based management fisheries and individual stock based management fisheries.

To address conservation concerns in both countries, harvest reductions of 15% below the 1999 catch ceiling in the Southeast Alaskan aggregate abundance based management fishery and 30% below the 1999 catch ceiling in the Canadian West Coast Vancouver Island fishery were agreed to by the parties and are detailed in Table 1 of the chinook chapter. The chapter also includes provisions to protect weak stocks, including the potential for further harvest reductions in the Southeast Alaska and Northern British Columbia aggregate abundance based management fisheries, as well as the individual stock-based management fisheries in both countries, should certain stocks fail to meet escapement objectives outlined in the agreement.

The agreement also includes provisions for a bilateral funding framework to support implementation of the chinook chapter. Key elements include: (i) $30M for Canada to help mitigate the impacts of commercial harvest reductions in Canada; (ii) $15M ($7.5M from each country) over five years to support the coast-wide coded-wire tag program; (iii) $10M from the Northern and Southern Endowment Funds for a "Sentinel Stocks Program"; (iv) $1M from the US to improve the analytical models to implement the chinook agreement.

Chapter 4 (Fraser River Sockeye and Pink Salmon): The chapter remains the same as the 1999 agreement and will remain in place for this coming fishing season. Commissioner Guidance accompanies Chapter 4 and includes supplementary direction to inform the sections of the chapter that deal with Canada's Aboriginal Fisheries Exemption, the number of stock groups

used for the purpose of computing aggregate total allowable catch, concentration of the US fishing effort on the most abundant management groups and acknowledgment that a small rate of incidental harvest may occur when there is little or no total allowable catch. It should be noted that the small rate of incidental harvest is not new, but affords more transparency by including it in the written guidance.

Draft language for a revised Chapter 4, which is based on the existing Commissioner Guidance, has been negotiated by the two Parties and is supported by the Pacific Salmon Commission. Following additional domestic consultations in both Canada and the United States, the chapter is expected to be finalized and approved by the Commission in late May. Each Party will then complete its respective approvals process in time for the new chapter to come into force on January 1, 2014.

Chapter 5 (Coho Salmon, Southern B.C. and Washington State): The current coho chapter incorporates the joint Southern Coho Management Plan developed in 2002 with the abundance-based management framework established in 1999.

Chapter 6 (Chum Salmon, Southern B.C. and Washington State): The current chum chapter includes a 20% fixed harvest rate in Johnstone Strait, linking the US catch ceiling to the abundance of Fraser River chum (i.e. in the case of a terminal run size below 900,000 chum salmon, the US would restrict its fisheries in Area 7 and 7A to 20,000 chum), and the establishment of a "critical level" for southern-bound chum salmon of one million. There is also a defined annual start date of October 10, for US fisheries in Areas 7 and 7A.

4.3. Oceans and Habitat Considerations

4.3.1. Oceans Act

In 1997, the Government of Canada enacted the *Oceans Act*. This legislation provides a foundation for an integrated and balanced national oceans policy framework supported by regional management and implementation strategies. In 2002, Canada's Oceans Strategy was released to provide the policy framework and strategic approach for modern oceans management in estuarine, coastal, and marine ecosystems. As set out in the *Oceans Act*, the strategy is based on three principles: sustainable development, integrated management, and the precautionary approach.

For more information on the *Oceans Act*, please visit:
http://www.dfo-mpo.gc.ca/oceans/oceans-eng.htm

4.3.2. Pacific North Coast Integrated Management Area

As part of Canada's Oceans Strategy, DFO has initiated an integrated management planning process for the Pacific North Coast Integrated Management Area (PNCIMA). The PNCIMA is bounded by the B.C.-Alaska border, the base of the shelf slope and the mainland, stretching south as far as Campbell River and the Brooks Peninsula. The PNCIMA planning process marks a shift toward a broader ecosystem approach to ocean management. This is consistent with the Government of Canada's overall direction and with the Wild Salmon Policy. The PNCIMA

planning process is bringing the area's regulators, First Nations, and stakeholders together to develop an integrated management plan for the region that will identify goals and objectives for achieving conservation, sustainable resource use, and economic development for oceans and coastal areas. These goals and objectives will provide guidance to the management of oceans activities. The integrated management plan will also identify valued ecological, socio-economic and cultural components of PNCIMA and outline a risk-based approach to identifying potential management priorities for these valued components. The plan will also help coordinate various ocean management processes, complementing and linking existing processes and tools, including IFMPs.

4.3.3. Marine Protected Area Networks

The *Oceans Act* mandates the Minister of Fisheries and Oceans with leading and coordinating the development and implementation of a national system (or network) of marine protected areas. The *National Framework for Canada's Network of Marine Protected Areas* (*National Framework*) provides strategic direction for the design of a national network of marine protected areas (MPAs) that will be composed of a number of bioregional networks. This is an important step towards meeting Canada's domestic and international commitments to establish a national network of marine protected areas. Regionally, the draft *Canada-British Columbia Marine Protected Area Network Strategy* has been developed jointly by federal and provincial agencies and reflects the need for governments to work together to achieve common marine protection and conservation goals. Bioregional marine protected area network planning will identify new areas of interest for protection by DFO, Parks Canada, Environment Canada, the Province of B.C., and any other agencies with a mandate for protecting marine spaces.

More information on MPA Network Planning can be found at:
http://www.dfo-mpo.gc.ca/oceans/management-gestion/marineprotectionprotectionmarine/index-eng.htm#network

4.3.4. Marine Protected Areas

DFO is also responsible for designating Marine Protected Areas (MPAs) under Canada's *Oceans Act*. Under this authority, DFO has designated two MPAs in the Pacific Region. The Endeavour Hydrothermal Vents, designated in 2003, lie in waters 2,250m deep 250 km southeast of Vancouver Island. The SGaan Kinghlas-Bowie Seamount Marine Protected Area (SK-B MPA), designated in 2008, is 180 km west of Haida Gwaii (formerly known as the Queen Charlotte Islands). MPA regulations and management plans articulate any restrictions on activities taking place within the MPA, where applicable. At this time, all fisheries are restricted within the Endeavour and SK-B MPAs, except for a limited Sablefish trap fishery within the SK-B MPA.

The SK-B MPA has been established to conserve and protect the unique biodiversity and biological productivity of the area's marine ecosystem. The Government of Canada and the Council of the Haida Nation signed a MOU in April 2007 which established the SK-B Management Board to facilitate the cooperative management and planning of the proposed MPA. As a result, DFO and the Council of the Haida Nation are collaboratively developing a management plan for the SK-B MPA which will consider advice from an advisory committee, stakeholders through existing processes, and

the public. This management plan will elaborate on the regulations to implement the conservation and management objectives for the MPA and will address matters such as monitoring, enforcement and compliance.

Commercial fishing activities within the SK-B MPA are managed through the Integrated Fisheries Management process. Three zones are identified, some of which are fisheries closures which are used to manage the sablefish fishery (see Groundfish IFMP for details). All other commercial fisheries are not permitted to occur in any zones of the MPA.

Work is ongoing to consider MPA designations for other areas along the Pacific Coast, including the Race Rocks area off Rocky Point south of Victoria (currently designated as a Provincial Ecological Reserve) and the Hecate Strait / Queen Charlotte Sound Glass Sponge Reefs. Changes to existing IFMPs with respect to fishing activities may be required upon designation of these MPAs. In addition, alignment of IFMPs and MPA Management Plans will be necessary.

More information on integrated management planning, Pacific Region MPAs and Pacific MPA planning under Canada's *Oceans Act* can be found at: www.pac.dfo-mpo.gc.ca/oceans/index-eng.htm.

4.3.5. National Marine Conservation Areas

The Canada *National Marine Conservation Areas Act* provides for the establishment of National Marine Conservation Areas (NMCAs). The Gwaii Haanas National Marine Conservation Area Reserve and Haida Heritage Site (Gwaii Haanas Marine Area) was established in June 2010. Implementation of the Interim Management plan for the Gwaii Haanas Marine Area, developed jointly by Parks Canada, the Council of the Haida Nation and the Department of Fisheries and Oceans was initiated in 2011. The Interim Management Plan includes an Interim Zoning Plan which identifies six protected areas where commercial and recreational fishing is not permitted.

The long term management plan for Gwaii Haanas Marine Area will be developed in consultation with the commercial and recreational fishing sectors through the Department's established integrated fishery planning and advisory processes. Development of the management plan will be completed within five years of establishment of the National Marine Conservation Area Reserve, as required by the *National Marine Conservation Areas Act*.

The Governments of Canada and British Columbia announced a proposed boundary for the proposed National Marine Conservation Area Reserve in the Southern Strait of Georgia in October, 2011. The two governments will now begin in-depth consultations with First Nations and local governments and a final boundary will be determined only after consultations are complete and the feasibility assessment is concluded. If the results of the feasibility assessment indicate that establishment of a national marine conservation area reserve is practical and feasible, an establishment agreement between the Governments of Canada and British Columbia will be negotiated and an interim management plan developed. First Nations, commercial and recreational fishing sectors, stakeholders, communities and the public will have opportunities to provide input to the development of the interim management plan. More information on the proposed National Marine Conservation Area Reserve in the Southern Strait of Georgia is available on the internet at: www.pc.gc.ca/eng/progs/amnc-nmca/dgs-ssg/index.aspx

DFO is also working with other federal and provincial agencies to coordinate efforts towards establishing a national system of Marine Protected Areas to fulfil Canada's commitments to the UN Convention on Biological Diversity.

More information on integrated management planning and Pacific MPAs under Canada's *Oceans Act* can be found at: http://www.pac.dfo-mpo.gc.ca/oceans/index-eng.htm

4.3.6. Marine National Wildlife Areas

Under the *Canada Wildlife Act*, Environment Canada may establish marine National Wildlife Areas (NWAs). The Scott Islands marine National Wildlife Area, located on off the northern tip of Vancouver Island, has been proposed for designation through amendment to the *Wildlife Area Regulations*. Fisheries and Oceans Canada would continue to regulate and administer fisheries within the proposed area. Environment Canada and Fisheries and Oceans will develop a collaborative approach and agreement regarding management of fisheries in the area.

4.3.7. Committee on the Status of Endangered Wildlife Species Assessments

COSEWIC was formed in 1977 to provide Canadians with a single, scientifically sound classification of wildlife species at risk of extinction. COSEWIC began its assessments in 1978 and has met each year since then to assess wildlife species.

With the implementation of SARA, COSEWIC has been established as an independent body of experts responsible for identifying and assessing wildlife species considered to be at risk. This is the first step towards protecting wildlife species at risk. Subsequent steps include COSEWIC reporting its results to the Canadian government and the public, and the Minister of the Environment's official response to the assessment results. Wildlife species that have been designated by COSEWIC may then qualify for legal protection and recovery under SARA.

For a full list of species identified and assessed by COSEWIC, please visit:
http://www.cosewic.gc.ca/rpts/Detailed_Species_Assessments_e.html

4.3.8. Species at Risk Act

The *Species at Risk Act* (SARA) came into force in 2003. The purposes of the *Act* are "to prevent wildlife species from being extirpated or becoming extinct, and to provide for the recovery of a wildlife species that are extirpated, endangered or threatened as a result of human activity and to manage species of special concern to prevent them from becoming endangered or threatened". More information on SARA can be found at: ww.sararegistry.gc.ca/default_e.cfm.

In addition to the existing prohibitions under the *Fisheries Act*, under SARA it is illegal to kill, harm, harass, capture, take, possess, collect, buy, sell or trade any listed endangered or threatened animal or any part or derivative of an individual. These prohibitions apply unless a person is authorized, by a permit, licence or other similar document issued in accordance with SARA, to engage in an activity affecting the listed species or the residences of its individuals. Species listed as special concern are not included in these prohibitions.

Endangered, threatened, and special concern marine species in Pacific region currently listed under SARA can be found at: http://www.dfo-mpo.gc.ca/species-especes/listing-eng.htm.

In the Pacific Region, the following SARA-listed species may be encountered:

- Ancient Murrelet – Special Concern
- Basking Shark - Endangered
- Blue whale – Endangered
- Fin whale – Threatened
- Green sturgeon – Special Concern
- Grey whale – Special Concern
- Harbour porpoise – Special Concern
- Humpback whale – Threatened
- Killer whale northern resident population – Threatened
- Killer whale southern resident population – Endangered
- Killer whale offshore population – Threatened
- Killer whale transient population – Threatened
- Leatherback turtle – Endangered
- Longspine Thornyhead – Special Concern
- Marbled Murrelet - Threatened
- North Pacific right whale – Endangered
- Northern Abalone – Endangered
- Olympia oyster – Special Concern
- Rougheye Rockfishes Types I & II – Special Concern
- Sea otter – Special Concern
- Sei whale – Endangered
- Sixgill Shark – Special Concern
- Soupfin Shark (Tope) – Special Concern
- Steller sea lion – Special Concern

Some marine or anadromous species of fish designated by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) that are currently under consideration for listing under SARA include:

- Bocaccio Rockfish – Threatened
- Canary Rockfish – Threatened
- Yelloweye Rockfish – Special Concern
- Darkblotched Rockfish – Special Concern
- Quillback Rockfish – Threatened
- Yellowmouth Rockfish – Threatened
- Eulachon – Fraser River population – Endangered; Central Pacific Coast population – Endangered. The Nass/Skeena Rivers population, assessed by COSEWIC as Threatened in May 2011, is currently being reassessed by COSEWIC.
- North Pacific Spiny Dogfish – Special Concern
- Northern Fur Seal – Threatened

White Sturgeon

In August of 2006, four populations of white sturgeon (Upper Fraser, Upper Columbia, Nechako, and Kootenay River) were listed as Endangered under SARA, while two populations (Lower

Fraser and Mid Fraser) were not. Only those populations listed under SARA are subject to the general prohibitions.

A SARA recovery strategy is currently being developed for the four listed populations, which will set a recovery goal and supporting objectives, and will also incorporate management activities for the two non-listed populations.

Humpback Whales
In 2003, the North Pacific Humpback Whale population was assessed by COSEWIC, and was subsequently listed as Threatened under SARA in January 2005. Threats identified in the Recovery Strategy prepared for the species include entanglement, vessel strike, acoustic disturbance and prey reduction.

Salmon
Three populations of salmon have been designated as Endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) (Cultus Lake sockeye (2003), Sakinaw Lake sockeye (2003), and Interior Fraser River coho (2002)) and one has been designated as Threatened (Okanagan chinook (2006)). Following extensive public and stakeholder consultation processes for each population, the Minister of Environment, in consultation with the Minister of Fisheries and Oceans did not include these populations on Schedule I of SARA (Cultus Lake sockeye (2005), Sakinaw Lake sockeye (2005), Interior Fraser River coho (2006) and Okanagan chinook (2010)). However, recovery efforts are continuing for each population.

DFO, in cooperation with the Interior Fraser River coho Recovery Team, have developed the *Conservation Strategy for Coho Salmon, Interior Fraser River Populations*. This strategy is an integral tool in effecting recovery of these unique coho populations. It is a science-based document that describes the species' biology, habitats and threats. The strategy also identifies a recovery goal, with accompanying principles and objectives designed to guide activities to achieve recovery. To view the conservation strategy, please visit: www.dfo-mpo.gc.ca/Library/329140.pdf.

Conservation Strategies for Cultus and Sakinaw Lake sockeye have also been finalized, and can be viewed at:
http://www.dfo-mpo.gc.ca/Library/337479.pdf and www.pac.dfo-mpo.gc.ca/fm-gp/species-especes/salmon-saumon/sakinaw_sockeye_cs/docs/Sakinaw_conservation_jan08-eng.pdf

Specific conservation objectives for these and other stocks are found in Section 5.

4.3.9. Whale, Turtle and Basking Shark Sightings

The Department welcomes assistance in the reporting of any whale, turtle, or Basking Shark sightings or entanglement. Sightings for Basking Shark, Leatherback and other turtle species, as well as many whale species are infrequent in Pacific Canadian waters, and the collection of sightings data is very useful to scientists in determining population size and distribution. Establishing this information can in turn help in the recovery planning under SARA.

To report a whale sighting, contact the B.C. Cetacean Sighting Network:

Toll free: 1-866-I-SAW-ONE (1-866-472-9663)
Fax: (604) 659-3599
Email: sightings@vanaqua.org
Internet: http://wildwhales.org/sightings/

To report a turtle sighting, contact the Sea turtle Sighting Network:
Toll free: 1-866-I-SAW-ONE (1-866-472-9663)
Fax (604) 659-3599
Email: turtles@vanaqua.org

http://www.B.C.reptiles.ca/reportsightings.htm#1

To report sick, injured, distressed or dead marine mammals and sea turtles contact the Marine Mammal Incident Reporting Hotline:
Toll free: 1-800-465-4336

To report a Basking Shark contact the Basking Shark Sightings Network:
Toll free: 1-877-50-SHARK
Email: BaskingShark@dfo-mpo.gc.ca
http://www.pac.dfo-mpo.gc.ca/science/species-especes/elasmobranch/sightings-signalez-eng.htm

4.3.10. Northern and Southern Resident Killer Whales

Two distinct populations of killer whales, known as the northern and southern residents, occupy the waters off the west coast of British Columbia. Northern resident killer whales are listed as Threatened and southern resident killer whales are listed as Endangered in Schedule 1 of the *Species at Risk Act*. A Recovery Strategy for Northern and Southern Resident Killer Whales in Canada was finalized in March 2008 and amended in 2011. It can be viewed at:

http://www.sararegistry.gc.ca/document/default_e.cfm?documentID=1341.

Critical habitat and its associated features have been identified for both populations in the recovery strategy, and are protected from destruction under SARA Section 58 through the issuance of an order. The recovery strategy also identifies current threats as environmental contaminants, reduced prey availability, disturbance, noise pollution and mortality in fishing gear.

Prey:
Northern and southern resident killer whales are dietary specialists and feed primarily on salmon. DFO and other researchers continue to advance new scientific information and analyses regarding the ecology of resident killer whales. Much of this new information focuses on their feeding habits and preference for chinook salmon. Fisheries that occur within the range of the

resident killer whales as well as fisheries outside their range that affect chinook abundance within their range are both potentially implicated.

Because Southern Residents also are listed as endangered pursuant to the United States Endangered Species Act, DFO has joined with the National Oceanic and Atmospheric Administration (NOAA) to collaboratively evaluate the status of the relevant science and analyses. The two agencies designed a series of three scientific workshops to undertake a transparent, collaborative and scientifically rigorous review of the available information about resident killer whales, their feeding habits, and the potential effects of salmon fisheries on the whales through prey reduction. A panel of independent scientists was selected to oversee and participate in the process and produce a report documenting its findings. The first of the three workshops occurred September 21-23, 2011 in Seattle; the second occurred March 13-15, 2012 in Vancouver, Canada, and the third occurred in Seattle on September 18-20, 2012. A diverse and multidisciplinary group of approximately a hundred actively participated in the workshop process. These experts were drawn from Canadian and US Federal, Provincial and State management and research agencies, First Nations, Treaty Indian Tribes, academia, non-governmental environmental organizations and industry (e.g., fishing and whale-watch industries). The final report of the *Independent Science Panel of the Bilateral Scientific Workshop Process to evaluate the effects of salmon fisheries on Southern Resident Killer Whales* is available here: http://www.nwr.noaa.gov/Marine-Mammals/Whales-Dolphins-Porpoise/Killer-Whales/ESA-Status/upload/KW-Chnk-final-rpt.pdf.

Contaminants:
There are numerous chemical and biological pollutants that may directly or indirectly impact resident killer whales, ranging from persistent organic pollutants to antibiotic resistant bacteria and exotic species. Recent studies indicate resident killer whales have high levels of some contaminants with males having the highest levels.

Disturbance:
All cetaceans, including resident killer whales, are subjected to increasing levels of disturbance from vessels, aircraft and other sources of anthropogenic noise. Industrial activities such as: dredging, pile driving, construction, seismic testing, military sonar and other vessel use of low and mid-frequency sonars may result in acoustic disturbance. The means by which physical and/or acoustic disturbance can affect resident killer whales at both the individual and population level is not well understood, but may depend on whether the disturbance is chronic or acute.

The Marine Mammals Regulations under the *Fisheries Act* and prohibitions under SARA specifically prohibit the disturbance and harm of killer whales. Guidelines for marine mammal viewing have also been developed. To avoid disturbing killer whales and other marine mammals, fish harvesters are advised to follow the *Be Whale Wise (BWW); Marine Wildlife Guidelines for Boaters, Paddlers and Viewers*, which are available from local Fishery Offices or on-line at: http://www.pac.dfo-mpo.gc.ca/fm-gp/species-especes/mammals-mammiferes/index-eng.htm

Non-compliance with the *Be Whale Wise* Guidelines may lead to charges under the *Marine Mammal Regulations* and/or SARA.

Critical Habitat:
In the March 2008 Recovery Strategy for the northern and southern resident killer whales, their critical habitat was defined. On February 23, 2009 a Species at Risk Act Section 58(4) Order by the Ministers of Fisheries and Oceans, and Environment was posted to protect that critical habitat from destruction. The Recovery Strategy identifies specific actions intended to protect killer whale critical habitat and its features. These actions include enforcement, protection, management, research, stewardship and public education. These actions are undertaken by multiple DFO sectors and the outcomes will inform further actions.

Marine Mammal Management Plans:
DFO has developed SARA Management Plans for four marine mammals listed as Special Concern: offshore killer whale (SARA listed as Threatened, June 2011), harbour porpoise, grey whale, and Steller sea lion. These plans are posted on the SARA Registry and describe species biology, distribution, and threats, as well as recommending potential actions to protect these species, and mitigate impacts from key threats. Several key threats to these species include oil spills, chemical pollution, acute noise stress, reduced prey availability, habitat degradation and fishing gear entanglement. These plans can be viewed on the SARA registry at: http://www.sararegistry.gc.ca/default_e.cfm

Fisheries Depredation:
Depredation (the removal of fish from fishing gear) by killer whales has been reported by groundfish longline, salmon troll and recreational harvesters in B.C.

Depredation is a learned behaviour that can spread throughout whale social groups and once established is impossible to eliminate. It is critical that B.C. harvesters do not encourage this learning by allowing whales to associate obtaining fish with fishing activity; encouraging this behaviour will quickly lead to significant losses for harvesters.

The most important approach to prevent this from spreading is by NOT feeding whales directly or indirectly and not hauling gear in the vicinity of killer whales and sperm whales. Typically killer whales pass quickly through an area allowing fishing to resume. It is also recommended that you advise other fish harvesters in the area if you encounter depredation. Additional tips on avoiding depredation events can be found in the DFO Marine Mammal Bulletin #2.

If you experience depredation by whales, please report the incident by email MarineMammals@dfo-mpo.gc.ca or by calling (250) 756-7253. Reporting all incidents will assist DFO and fish harvesters in understanding this problem and help in developing strategies to avoid it.

Marine Mammal Incident Response Program and Marine Mammal Sightings Network:
Marine mammals incidents comprise a range of occurrences which may include; live strandings, dead, sick or injured animals, entanglements or potential violations (disturbance, harm or harassment).

To report a marine mammal incident, including violations, call DFO's Observe Record, Report (ORR) line at 1-800-465-4336. All entanglement or by-catch of marine mammals must be reported by current log book/reporting requirements.

Observations of orphaned seal pups may be reported to the Vancouver Aquarium Marine Mammal Rescue and Rehabilitation (604) 258-SEAL (7325). In many cases seal pups are not truly orphaned, and staff at these facilities will assess the circumstances.

To report a sightings of a cetacean (whale, dolphin, or porpoise) or sea turtles contact the B.C. Cetacean Sightings Network as soon as possible by phone at 1-866-I SAW ONE (472-9663) or http://www.vanaqua.org. You may also participate in a formalized logbook program by calling or contacting the Network.

More information on COSEWIC, SARA, and the listing process can be found at:

http://www.cosewic.gc.ca/eng/sct5/index_e.cfm

http://www.dfo-mpo.gc.ca/species-especes/home_e.asp

http://www.sararegistry.gc.ca/

Contacts for marine mammal inquiries:

Fisheries and Oceans Canada Contacts:
MarineMammals@dfo-mpo.gc.ca
Paul Cottrell (604) 666-9965
Graeme Ellis (250) 756-7245

4.3.11. Environment Canada Assessing the Impact of Salmon Gill Net Fishing on local Seabird Populations

Environment Canada is looking for your help to measure salmon gill net fishing's impact on local seabird populations.

A number of seabird species around the world have declined in recent years; seabird by-catch is a part of the reason.

Seabird by-catch has been reported in all types of fisheries in B.C. and in fisheries in Alaska and Washington State. However, the number of local seabirds getting entangled in gill nets as a result of the B.C. salmon gill net fishery is not well known.

Environment Canada wants to know how, when and where gill net fishing may impact local seabirds and to find ways to reduce impacts. Environment Canada, with the Department of Fisheries and Oceans, fishermen, First Nations, non-government organizations, and other coastal communities, has started a program to answer these questions. Without this information, it will be difficult to determine if there is a significant impact. Should impacts be determined this information helps support solutions that benefit both the fishery and healthy bird populations.

To help us, we would like to be informed about any dead birds found or reported in gill nets and/or found floating dead on fishing grounds. Please report all incidents to our 24-hour reporting line: 1-866-431-BIRD (2473).

For additional information, please contact:
Laurie Wilson
Wildlife Toxicologist, Environment Canada
Canadian Wildlife Service, Delta, B.C.
Tel: (604) 940-4679
Email: laurie.wilson@ec.gc.ca.

4.3.12. Aquaculture Management

Regulatory Regime:
DFO assumed legal responsibility for aquaculture in BC in December 2010, including marine finfish, shellfish, freshwater and enhancement. The *Pacific Aquaculture Regulations* (2010) were brought into effect and DFO Pacific Region took over responsibilities for the management and licensing of the aquaculture industry. New licensing requirements and additional public reporting have increased the transparency and accountability of the management of aquaculture in BC. Additional information relating to the management of aquaculture and associated reporting can be found on the DFO web pages:
http://www.pac.dfo-mpo.gc.ca/aquaculture/index-eng.htm

Integrated Management of Aquaculture Plans:
Within aquaculture, Integrated Management of Aquaculture Plans (IMAPs) will be developed, consistent with the Integrated Fisheries Management Plans used for management of wild fisheries. IMAPs will be developed for marine finfish, shellfish, and freshwater during 2013/2014. The IMAPs will link to associated advisory processes, which will provide advice to DFO from industry, First Nations and stakeholders with respect to the management of the aquaculture industry. IMAPs are expected to complement IFMPs and both IMAPs and IFMPs will be reviewed to ensure consistency of management approaches.

Opportunities will be provided for commercial and recreational fishing interests, along with First Nations, to become engaged in the IMAP development process. More details related to IMAP consultations are available on the DFO consultation web pages:
http://www.pac.dfo-mpo.gc.ca/consultation/aquaculture/index-eng.htm

Management Issues:
Aquaculture Management shares the objective of conservation and protection of wild salmon in British Columbia with the rest of DFO. Activities in the BC Aquaculture Regulatory Program are managed in order to ensure minimal impacts on wild fisheries. Some of the specific areas where active management is taking place with respect to potential issues include: incidental catch, habitat protection, disease and parasite monitoring and treatment, and overall compliance monitoring of the aquaculture industry.

DFO is committed to working toward an ecosystem approach to aquaculture, which will incorporate an area-based component. Planning processes will work to minimize any spatial or impact-related conflicts between fishing interests and aquaculture operations.

Aquaculture Requirements for Access to Wild Resources:
On May 1, 2004, Fisheries and Oceans (DFO) introduced a national policy entitled, *Access to Wild Aquatic Resources as it Applies to Aquaculture*. For the purposes of this policy, wild aquatic resources include both wild salmon, as defined in 'Canada's Policy for Conservation of Wild Pacific Salmon' (the "Wild Salmon Policy") and hatchery stocks managed by DFO.

Aquaculturalists may require access to fisheries resources from time to time to conduct their aquaculture operations (for example, for broodstock collection). This is consistent with the *Access Policy*, and the commitment taken by DFO in its "Aquaculture Policy Framework" introduced in 2002 to provide aquaculturists with predictable, equitable, and timely access to the aquatic resource base.

This policy provides the aquaculture industry with access to stocks in a manner that is consistent with the Department's sustainable management of those stocks. Access requests for aquatic resources will be considered by the regional aquaculture offices in collaboration with the on-going fisheries management planning process. Requests for access to fish from Salmonid Enhancement Program (SEP) facilities will not be considered by the Department, as this approach is not consistent with the *Access Policy*. Only requests for access from the wild stocks will be considered, as stock status allows.

The policy on the *Access to Wild Aquatic Resources as it Applies to Aquaculture* may be found at: http://www.dfo-mpo.gc.ca/Aquaculture/ref/AWAR_e.pdf

Capacity:
DFO Pacific Region has developed dedicated capacity to proactively monitor aquaculture licences. Within the BC Aquaculture Regulatory Program, there is a Compliance and Enforcement Unit dedicated to aquaculture compliance, as well as an Aquaculture Environmental Operations Unit, which monitors the activities of industry on an on-going basis. The Aquaculture Resource Management Unit provides oversight and works to ensure the orderly management of the industry, including planning and licensing, and the Aquaculture Programs Unit provides a linkage with national and regional policy, as well as consultation and communications requirements. Contact information for staff with responsibilities related to aquaculture management within DFO can be found in the Departmental Contacts section of this plan.

4.3.13. Salmonid Enhancement Program

The Salmonid Enhancement Program (SEP) in British Columbia, Canada is comprised of nearly 300 projects across the province and the Yukon and includes hatcheries, fishways, spawning and rearing channels, and small classroom incubators. Projects range in size from spawning channels producing nearly 100 million juvenile salmon annually to school classroom incubators releasing fewer than one hundred juveniles (per aquarium).

SEP enhances chinook, chum, coho, pink, and sockeye salmon at the population level throughout the Pacific Region, supporting sustainable fisheries through fish production that provides harvest opportunities. Fish production from the program also supports stock assessment and conservation, both of which enable harvest management as well as community involvement and public education.

The program is delivered through three components:

- Major Operations (OPS) SEP facilities that rebuild stocks and provide harvest opportunities through hatcheries and spawning channels;
- The Community Involvement Program (CIP), which includes the Community Economic Development Program (CEDP) that operates contracted SEP facility operations with local community groups and First Nations, and Public Involvement Program (PIP) projects that are divided into designated (DPI) and non-designated categories. The latter are smaller projects that focus on outreach, stewardship and educational activities, which do not produce large numbers of fish.
- The Resource Restoration Unit supports habitat improvements, stock assessment, effectiveness monitoring, watershed planning, and partnerships related to habitat initiatives.

Steelhead and cutthroat trout are produced at some SEP facilities in partnership with the province of British Columbia; however, targets and release numbers are not included in SEP production planning as the province is responsible for management of these species.

SEP facilities are subject to the Pacific Aquaculture Regulations (PAR) under the *Fisheries Act.* PAR licences for all SEP facilities include a production plan, which is developed within a formal integrated planning process. This production planning process operates within the consultative framework of an integrated harvest planning process that is used to develop the IFMP.

Production planning meetings involve most DFO sectors (SEP, Science, and Fisheries Management), and external consultation and involvement is achieved through the IFMP process. Based on these production planning meetings, a draft production plan is assembled, taking into account production priorities and the results of post-season fishing and production reviews. This process operates through an annual planning cycle, while at the same time planning for the longer-term. Priorities are established annually based on the national and regional priorities using a consistent approach across the program.

The production planning cycle establishes maximum numbers of eggs to be collected and juveniles to be released, using strategies that will produce the number of adults desired to meet specific objectives while considering species interactions, effects on existing stocks, harvest, habitat capacity, project capacity and overall conservation unit (CU) objectives. Operationally, SEP production targets for a given facility are set for individual populations or stocks. Each individual stock or population together with its run timing, release site, life-history stage and the associated release numbers, is known as a production group and has a specific production objective. A single regional production plan is produced, that comprises donor stocks, release sites, egg-take and juvenile salmon release targets, and stages at release for each SEP facility.

Production targets are considered upper limits and will be documented as such in each Facility PAR licence.

DFO is aware of potential interaction of enhanced fish with wild stocks. This can take the form of greater than target exploitation rates on wild stocks due to abundant hatchery stocks; predation or competition for available food sources; or negative genetic effects. Hatchery programs are designed to avoid or minimize the risk of negative interactions with wild stocks.

The information available at the link below addresses production only from SEP facilities that undertake fish cultivation, and does not include production from smaller PIP projects, or production of cutthroat or steelhead, which are provincially managed.

There are two datasets available: Post-Season Production and Proposed Targets for the upcoming brood year. The Proposed Targets dataset is preliminary, and the final version will be available by May 1, 2013 at: http://www.pac.dfo-mpo.gc.ca/sep-pmvs/index-eng.htm

4.3.14. Fishing Vessel Safety

Commercial fishing is recognized as a very dangerous activity. Concerns over fishing related injuries and deaths have prompted DFO to proactively work with Transport Canada and Worksafe B.C. to ensure coordinated approaches to improving fishermen's safety. See Appendix 2 for more information.

5. OBJECTIVES

5.1. Fishery Management Objectives for Stocks of Concern

5.1.1 Lower Strait of Georgia Chinook

The objective for Lower Strait of Georgia (LGS) chinook is to reduce fishery exploitation in known areas of significant impact.

Chinook escapements to Lower Strait of Georgia (LGS) systems generally continue to be at low levels, due in large part to poor marine survival. The Cowichan River is the primary indicator of marine survival and exploitation for the LGS fall chinook. Natural spawning chinook have been well below the goal of 6,500 spawners for the Cowichan River since 1998 and well below the goal since 2002. However, in 2010, 2011 and 2012 there has been improvement in the chinook escapement to the Cowichan River. In 2010 there were 2,419 natural adult spawners, 1,786 jack spawners and 376 adults and jacks were collected for broodstock. In 2011, the escapement was 2,786 natural adult spawners and 1,688 jack spawners with 728 adults and jacks collected for broodstock. In 2012, the preliminary escapement estimate is 2,668 natural adult spawners, 1,062 jack spawners with 693 adults and jacks collected for broodstock.

LGS chinook are harvested in terminal First Nations fisheries, mixed stock commercial troll fisheries off the west coast of Vancouver Island and recreational fisheries off the west coast of Vancouver Island, in the Strait of Juan de Fuca and in the Strait of Georgia. Restrictions introduced in recent years (including PST reductions to the WCVI allowable harvest) are

reducing the WCVI commercial troll TAC. Restrictions and closures in the terminal and approach areas for recreational harvesters and First Nations will continue.

Over the next year, the Department will also be consulting on a longer term, comprehensive management framework for all southern B.C. chinook populations that considers the effects of fishery related impacts, enhancement activities, and habitat and ecosystem status on these populations. Revisions to management actions may be considered based on development of the southern B.C. chinook management framework.

5.1.2 West Coast of Vancouver Island (WCVI) Chinook

The objective for West Coast of Vancouver Island (WCVI) chinook is to manage Canadian ocean fisheries (specified below) to an exploitation rate of 10%. The objective for North Coast chinook is to manage in accordance with the allocation policy, and to manage the northern troll fishery to a WCVI chinook exploitation rate of 3.2%.

For the past several years WCVI wild chinook have experienced poor marine survival rates and low spawner levels and are a stock of concern.

Management actions will continue to be required in 2013 consistent with the exploitation rate objective. For purposes of calculating the WCVI allowance for north coast chinook fisheries, all WCVI chinook caught and kept in Canadian fisheries are assumed to be returning in the present year. Fisheries that this limit applies to are the northern troll, Haida Gwaii recreational, WCVI troll and WCVI recreational. The exploitation rate is measured by Coded Wire Tag (CWT) data gathered from these fisheries. The exploitation rate limit includes chinook caught and kept, as well as an estimate of fishing related mortalities.

DFO will continue to manage commercial troll fisheries in the North Coast to a WCVI catch ceiling. The allowance for mortalities of WCVI chinook in the Area F troll fishery is calculated based on 3.2% of the total WCVI return to Canada as an in-season proxy for exploitation rate. DNA analysis and fishery impact models will be used in-season to assess this objective.

5.1.3 Fraser Spring 4_2 Chinook

The objective for Fraser Spring 4_2 chinook is to conserve these populations by continuing to minimize incidental harvests in Canadian ocean fisheries. For directed fisheries in the Fraser River, the objective is to minimize directed harvests of Spring 4_2 chinook until July 15th. Fisheries beginning July 15th will be managed consistent with the management zone identified for Spring 5_2 and Summer 5_2 Fraser chinook (see section 5.1.4) given timing overlaps between these populations for much of the adult migration period.

In the 2013 Salmon Outlook, Spring 4_2 chinook has been classified as *stock of concern* given poor survival rates and very poor spawning escapements in recent years.

Fraser Spring 4_2 chinook is one of five management units for Fraser chinook used in the Pacific Salmon Treaty process. This group contains two conservation units spawning in the interior Fraser areas including three populations previously referred to as Early-timed chinook (see Table

7-5). Spring 4_2 chinook return to spawn from early March through late July and migration peaks in June in the lower Fraser River. These populations primarily mature as adults at age-4 (90%) with lower numbers maturing at age-5 (7%) and occasionally at age-3 (3%).

Coded wire tagged (CWT) Nicola River chinook released from the Spius Creek hatchery are the PST exploitation rate indicator stock used to assess survival and exploitation rates of Spring 4_2 chinook in Canadian and US fisheries. Based on CWT recoveries from fisheries, Fraser Spring 4_2 chinook have historically been encountered in Fraser River First Nation net fisheries, Fraser River and tributary recreational fisheries, marine troll fisheries (e.g. WCVI and North Coast), and recreational fisheries in the Strait of Juan de Fuca and Strait of Georgia, with lower rates in other marine recreational fisheries.

There is a high potential for very low abundances of Spring 4_2 chinook in 2013 and subsequent years if poor survival rates persist, given very low spawner abundances in the parental generations. Returns of Spring 4_2 chinook in 2013 will come primarily from a parent generation of approximately 844 spawners in 2009. Additional consultations will occur beginning in the Fall of 2013 if changes are contemplated on fishery plans for First Nations, recreational and commercial harvesters for the Spring of 2014.

5.1.4 Fraser Spring 5_2 and Summer 5_2 Chinook

The objective for Fraser Spring and Summer (age 5_2) chinook is to conserve these populations consistent with the management zones outlined below.

Note: For 2013, the breakpoints between the management zones outlined below have been changed from 2012. The new breakpoints are at 45,000 and 85,000 chinook returning to the Fraser River. In 2012, these breakpoints were at 30,000 and 60,000. The management actions proposed within each zone have not been changed. The rationale for the breakpoints and the changes to the breakpoints are provided below.

Table 5-1. Spring 5_2 and Summer 5_2 Fraser Chinook Management Zone Approach

Zone	Predicted Return to the Fraser River	Actions
3	Greater than 85,000 **Rationale**: Manage to meet expected spawner abundance of at least 60,000. Populations rebuilding towards maximum sustained yield (MSY) levels.	First Nations directed fisheries. Directed recreational and commercial fisheries consistent with Allocation policy. Specific objectives can be found on page 172.

2	45,000 to 85,000 **Rationale:** Manage to meet expected spawner abundance of at least 30,000. Caution required to avoid population declines. Populations well below MSY levels.	Limited directed fisheries. First Nations directed fisheries subject to abundance. By-catch retention/ limited directed Fraser recreational fisheries may be initiated. Management actions to reduce by-catch or incidental harvest in commercial fisheries.
1	Below or equal to 45,000 **Rationale:** Expected spawner abundance will likely be 30,000 or less. Significant conservation concerns. Very high risk of extremely low spawning populations.	Directed fisheries minimized. By-catch retention /limited directed First Nations fisheries. Non-retention/closed recreational and commercial chinook fisheries in the Fraser River and tributaries Management actions to reduce by-catch or incidental harvest in other recreational and commercial fisheries.

See Section 6.4 for description of directed fisheries, incidental harvest and by-catch.

A post-season review of the 2012 Fraser River Spring and Summer 5_2 chinook management zone breakpoints of 30K and 60K highlighted a need to make changes in 2013 for the following reasons:

- The previous breakpoints did not align with the expected number of spawners identified for each of the zones and did not account for in-river harvest. The average in-river harvest rate from 2000 to 2006 was 22% based on the Fraser River Run reconstruction model.
- The Albion catch data from 2012 indicated the lower run size reference point (30,000) was below the historical range of data used in Albion CPUE vs. terminal return to the Fraser regression leading to uncertainty in the predictability of the model.
- There is a 17% uncertainty in the regression equation used to generate the run size. For 2013, this has been incorporated into the breakpoints so the Albion estimate can be compared directly to the reference points.

In the 2013 Salmon Outlook, Spring 5_2 and Summer 5_2 chinook stocks have been classified as *stocks of concern* given poor survival rates and declines in spawning escapements compared to the parental generation in recent years. The parental brood year (2008) escapement for these stocks was approximately 32,000 spawners.

Given the poor pre-season outlook, the Department is planning to begin the season with management actions based on returns being less than 45,000 (zone 1). The Department will use the relationship between the cumulative Catch per Unit Effort (CPUE) of chinook caught in the Albion test fishery from May 5th through June 15th to provide an in-season estimate of returns of Spring 5_2 and Summer 5_2 chinook to the mouth of the Fraser River. Updates of the predicted return for informational purposes are tentatively planned for May 21st and June 3rd, with a final

in-season update by June 17th. The management zone may be updated based on this in-season assessment.

Management actions for zone 1 have been identified in five primary areas: Northern (Area F) and West Coast of Vancouver Island (Area G) commercial troll fisheries; Juan de Fuca (Victoria area) and Fraser River recreational fisheries; and Fraser River First Nation FSC fisheries. Specific management actions are identified separately for First Nations (Appendix 5, Section 5.2.9), recreational (Appendix 6, Section 6.2.3) and commercial fisheries (Appendix 7, Section 7.16.5).

Rationale for Escapement Objectives for Fraser Spring and Summer 5_2 Chinook

While PST escapement targets and exploitation rate targets have not been formally identified for Fraser Spring and Summer 5_2 chinook, biological factors were nonetheless a principal consideration in establishing the breakpoints between the management zones:

- **Zone 3: Populations rebuilding towards maximum sustained yield (MSY) levels. (>85,000 terminal return; expected spawner abundance of at least 60,000)**

  Preliminary analysis of the number of spawners required to utilize the productive capacity of the habitat to produce maximum sustained harvests (S_{MSY}) for these populations is approximately 138,000 spawners (including ~80,000 Spring 5_2 and ~57,000 Summer 5_2). The number of spawners at 40% of S_{MSY}, a metric suggested as a lower abundance benchmark, is 55,000 spawners. The original PST base period doubling goal is approximately 60,000 spawners. In 15 of the past 35 years spawner abundances greater than 60,000 were observed; the highest spawner abundance recorded for these populations was 92,000 in 2003.

- **Zone 2: Caution required to avoid population declines. Populations well below MSY levels. (45,001 to 85,000 terminal return; expected spawner abundance of at least 30,000)**

  The average escapement of Fraser Spring and Summer 5_2 chinook during the 1979-1982 base period was about 30,000 spawners; a level at which substantial management actions were taken to rebuild populations. This number of spawners is half of the value of 40% S_{MSY} increasing the likelihood of extremely low spawner abundance in CUs; only 6 of the past 35 years had spawner abundances less than 30,000

- **Zone 1: Significant conservation concerns. Very high risk of extremely low spawning populations. (<45,000 terminal returns; Expected spawner abundance will likely be 30,000 or less)**

  The average escapement of Spring and Summer (age 5_2) Fraser chinook during the 1979-1982 base period was about 30,000 spawners; a level at which substantial management actions were taken to rebuild populations. This number of spawners is half of the value of 40% S_{MSY} increasing the likelihood of extremely low spawner abundance in CUs; only 6 of the past 35 years had spawner abundances less than 30,000.

The Southern BC chinook strategic planning initiative will likely inform future management approaches for Fraser river Spring and Summer 5_2 chinook.

5.1.5 Interior Fraser River Coho, Lower Fraser Coho and Strait of Georgia Coho

The objective for Interior Fraser River coho (including Thompson River coho) is to limit the Canadian exploitation rate to 3% (not including terminal harvest on systems experiencing strong escapements).

Conservation measures with the objective of reducing harvest related impacts to Interior Fraser River coho were first implemented in 1998. Since then, the conservation objective has been clarified to limit the exploitation rate in Canada to 3% or less. Additional information will be communicated once it becomes available.

Returns in 2013 will be from the 2010 brood year escapement of 36,000 fish and the forecast total return to the Interior Fraser watershed is 42,729 coho with a 50% confidence interval of 27,091 to 67,393 based on a 3 year average model. However, considerable interannual variation and uncertainty remains about the trend in productivity with 4 of the last 10 years below replacement levels.

For the first time since 1998, there have been 3 consecutive years with annual estimates of spawner abundance at levels higher than the recovery objective 1 including approximately: 2010 - 36,000 coho; 2011 - 26,000 coho; 2012 - 55,000 coho. The *Conservation Strategy for Coho Salmon (Oncorhynchus kisutch), Interior Fraser River Populations* (October 2006) contains the following recovery objectives:

> ***Objective 1:*** *The 3-year average escapement in at least half of the sub-populations within each of the five populations is to exceed 1,000 wild-origin spawning coho salmon, excluding hatchery fish spawning in the wild. This represents a total Interior Fraser Coho spawning escapement of 20,000 to 25,000 wild-origin coho. This objective is designed to provide the abundance and diversity required to satisfy the recovery goal.*
>
> ***Objective 2:*** *Maintain the productivity of Interior Fraser Coho so that recovery can be sustained. This objective is designed to ensure that the threats to recovery are addressed. This objective may be met by addressing the causes for the decline that were identified by COSEWIC:*
>
> - *Development of a harvest management plan to ensure that exploitation rates are appropriate to changes in productivity caused, for example, by fluctuations in ocean conditions.*
> - *Identification, protection, and, if necessary, rehabilitation of important habitats.*
> - *Ensure that the use of fish culture methods is consistent with the recovery goal.*

The Department will continue to monitor returns and will be reviewing the management objective for 2014 pending completion of a more detailed analysis of the status of Interior Fraser River coho.

During May through September, when Interior Fraser River coho, Lower Fraser coho and Strait of Georgia coho are encountered in southern B.C. waters, management actions will range from non-retention to time and area closures. The following areas and fisheries are affected:

- West Coast Vancouver Island (WCVI) troll and recreational fisheries in offshore areas from late May until early September;
- Commercial net and recreational fisheries in the Straits of Juan de Fuca from June until early October;
- Commercial, recreational and First Nations fisheries in Johnstone and Queen Charlotte Straits from early June until late August;
- Commercial, recreational and First Nations fisheries in the Strait of Georgia from June until early October, and
- Commercial, recreational and First Nations fisheries both off the mouth of and in the Fraser River from early September until mid-October.

5.1.6 Cultus Lake and Late Run Sockeye

Cultus Lake Sockeye will be managed within the constraints of the exploitation rate identified for the Late Run aggregate. The maximum allowable exploitation rate for Cultus Lake Sockeye will be the greater of a) the low abundance exploitation rate identified for Late Run Sockeye, or b) the exploitation rate that is consistent with continued rebuilding of the population based on in-season information on returns and potential numbers of effective spawners. The exploitation rate on Cultus Lake Sockeye is intended to allow for fisheries on more abundant co-migrating stocks. For Late Run sockeye, management will be based on an abundance-based Total Allowable Mortality as outlined in the Fraser sockeye escapement plan (see Section 7.5.2.1).

Cultus Lake sockeye is a component of the Late Run Fraser River sockeye aggregate which is typically harvested in southern B.C. waters in August and September.

The returns of sockeye salmon to Cultus Lake have been particularly low relative to historic averages. To work toward rebuilding this population, Late Run sockeye fishery management actions have been implemented to reduce fishery exploitation levels on this stock. Enhancement measures have included fry and smolt releases as well as a captive brood program. Freshwater measures in the past have included: predator control (removal of adult northern pikeminnow in Cultus Lake), removal of Eurasian watermilfoil and contaminant studies. An overview on the recovery activities and the current status of Cultus Lake sockeye can be found in the *Status of Cultus Lake Sockeye Salmon* (Bradford et al., 2010), available on-line at: http://www.dfo-mpo.gc.ca/CSAS/Csas/publications/resdocs-docrech/2010/2010_123_e.pdf

The recovery objectives as outlined in the *National Conservation Strategy for Cultus Lake* Sockeye Salmon (*Oncorhynchus nerka*) (Cultus Lake sockeye Recovery Team, 2009) can be found online at: http://www.dfo-mpo.gc.ca/Library/337479.pdf

All Canadian fisheries that could harvest Cultus Lake sockeye will be impacted by the need to limit exploitation on this stock. This includes:

- Closures in all fisheries with the possibility of impacting Cultus or Late Run fish when harvest limits for this stock group have been reached.
- Restrictions to First Nations fisheries in Queen Charlotte and Johnstone Straits, Strait of Georgia, Strait of Juan de Fuca, West Coast of Vancouver Island and the lower Fraser River downstream of the Vedder River. However, where surpluses are identified, first priority will be accorded to First Nations for opportunities to harvest fish for FSC purposes.
- Restrictions to recreational salmon fisheries in southern B.C. This will include sockeye non-retention in specific locations when Cultus Lake sockeye are present and allowable harvest limits have been reached.
- Closures to commercial salmon fisheries in southern B.C. when Late Run sockeye are present, or expected to be present in the area as it will not likely be possible to identify Cultus Lake sockeye in-season due to relative low abundances of Cultus Lake sockeye compared to other co-migrating sockeye stocks. These closures will come into effect when allowable harvest limits for this stock group have been reached. Fisheries directed at other stocks or species of salmon will be subject to Late Run/Cultus constraints.

Work is underway to promote rebuilding of the Cultus Lake population. Predator control measures will be continued and studies to increase the understanding of threats to freshwater habitats will be done. The Department is no longer collecting eggs for the captive brood program (where a small segment of the population is held until maturity); however, progeny from previously collected captive brood stock will continue to be released (the last release from captive brood stock will occur in 2014). In addition, enhancement activities to supplement juvenile production will continue. Release targets for the enhancement program are approximately 550,000 fed fry (summer) into the Lake, 150,000 fed fry (fall) into the Lake, and 50,000 smolts (spring) into Sweltzer Creek.

Within the Fraser River upstream of the Fraser/Vedder confluence, recreational and First Nations fisheries for Fraser Sockeye during Cultus migration timing will be managed based on Late Run constraints as Cultus Lake sockeye have exited the Fraser River.

For harvest constraints on the Late Run sockeye stock group aggregate refer to Section 7.5.3.4 Fraser River sockeye decision guidelines.

5.1.7 Sakinaw Lake Sockeye

The objective for Sakinaw Lake sockeye is to stop their decline and re-establish a self-sustaining, naturally spawning population.

This objective will not be achieved until spawner abundance relative to previous brood years increases for at least 3 out of 4 consecutive years and there are no fewer than 500 natural spawners annually.

To achieve this objective quickly, a captive brood stock program designed to maintain genetic integrity and minimize inbreeding was initiated in 2001. Achieving this objective also meant that mortality, including fishing mortality, needed to be minimized, as much as practicable.

Sakinaw Lake is located in the Strait of Georgia near Sechelt, B.C. Migration timing data on Sakinaw Lake sockeye is limited. Current data suggests Sakinaw Lake sockeye have a prolonged migration period commencing in Johnstone Strait in late May to July and arriving at the entrance to Sakinaw Lake in upper Strait of Georgia in July and August. Given this timing pattern, Sakinaw Lake sockeye are most vulnerable to harvest directed at Fraser River sockeye stocks in July extending into mid-August.

As with Cultus Lake sockeye harvest related measures to ensure protection for this stock are to continue.

Most fisheries that have potential to intercept Sakinaw Lake sockeye will continue to be delayed prior to the last week of July to ensure a significant portion of the return has passed through major fisheries in Johnstone Strait. The plan will provide for:

- Restrictions in First Nations FSC fisheries prior to the last week of July.
- Recreational fisheries in Queen Charlotte Strait, Johnstone Strait, and upper Strait of Georgia will be closed to sockeye retention prior to the last week of July. The waters near the mouth of Sakinaw Creek in Area 16 will be closed to fishing all season. In addition, there will be sockeye non-retention restrictions in Area 16 until early to mid-August at which time sockeye retention opportunities are expected to be available in Sabine Channel.
- Commercial fisheries in Queen Charlotte Strait and Johnstone Strait will be closed prior to the last week of July and upper Strait of Georgia (including Sabine Channel) until early to mid-August.

Recovery planning efforts to ensure rebuilding of this stock will continue to be supported. In addition to harvest related measures, there will be continued efforts made to improve the habitat (debris removal from spawning areas), investigations into the impacts of predation (seals, otters and lamprey) and enhancement work. Eggs are incubated in nearby hatchery facilities and the resulting fry are returned to the lake. The captive brood program will continue as a form of insurance to reduce the possibility of extirpation. After several years of zero or one sockeye returning to Sakinaw, the recovery efforts resulted with 550 sockeye observed in 2011 and 244 in 2012. These fish were able to find the historic spawning beaches which had been cleaned and cleared of small debris in preparation for their arrival. These fish were second generation from the captive brood program at Rosewall Hatchery and came from a fry release of 420,000 in 2008 and 726,000 in 2009, respectively.

5.1.8 Nimpkish Sockeye

The objective is to minimize the impact of Canadian fisheries.

Nimpkish sockeye are encountered in Queen Charlotte Strait and Queen Charlotte Sound typically during June and July. In order to protect this stock, time and area closures are implemented until late July in marine areas above Lewis Point.

5.1.9 Interior Fraser River Steelhead

The objective for Interior Fraser River steelhead is to minimize the impact of Canadian fisheries and to increase spawner abundance.

Based on the management framework developed by the province and endorsed by DFO, the limit reference point (LRP) for minimum spawning escapements identified for the Thompson and Chilcotin River steelhead groups is 1250 fish. Monitoring of stock abundance will continue.

There are ongoing discussions between DFO and the Province about potential fisheries for harvesting Fraser River chum consistent with the Interior Fraser River steelhead management objective. Selective commercial fisheries will be considered consistent with *Policy for Selective Fishing in Canada's Pacific Fisheries*. In addition, other commercial south coast fisheries are to release to the water with the least possible harm all steelhead caught incidentally in fisheries targeting other species.

For Fraser River commercial gill net fisheries, the strategy is to protect 80% of the Interior Fraser River steelhead run with a 90% certainty. The Department is currently reviewing this strategy with the Province.

5.1.10 Inshore Rockfish

The management objective for inshore rockfish species (which include yelloweye, quillback, copper, china and tiger) is to continue conservation strategies that will ensure stock rebuilding over time. A fishing mortality rate of less than 2.0 percent (all Pacific Region fisheries) will be required to achieve this objective.

Rockfish Conservation Areas (RCAs) are no fishing zones for fishing gear that impact on rockfish. Consultations with First Nations will continue so that management of their fisheries will be consistent with conservation objectives and Departmental obligations with respect to priority access for food, social, and ceremonial purposes. First Nations are encouraged to employ fishing methods or fish in locations to avoid the harvest of inshore rockfish.

There are currently 164 RCAs along the coast of British Columbia. The RCAs have been implemented within the Strait of Georgia and in all outside waters including the Queen Charlotte Islands. The conservation strategy for inshore rockfish along the coast of British Columbia is long term. Rockfish are a long-lived species with a low level of productivity and therefore rebuilding will take several decades. The strategy addresses four areas under the fisheries management and stock assessment regime:

a) Protect a part of inshore rockfish populations from harvest through the use of Rockfish Conservation Areas;
b) Collect information on total fishery mortalities through improved catch monitoring programs;
c) Reduce harvests to levels that are less than the estimates of natural mortality; estimated at 2%; and
d) Improve the ability to assess the status of inshore rockfish populations and to monitor changes in abundance.

Fish harvesters are reminded prior to fishing to check with the local DFO office to verify RCA and other closures currently in effect. A description of all RCAs and permitted fishing can be found at: www.pac.dfo-mpo.gc.ca/fm-gp/maps-cartes/rca-acs/index-eng.htm

6. ACCESS AND ALLOCATION

The Minister can, for reasons of conservation or for any other valid reasons, modify access, allocations, and sharing arrangements as outlined in this IFMP in accordance with the powers granted pursuant to the *Fisheries Act*.

6.1 International Objectives

The objective is to manage Canadian treaty fisheries to ensure that obligations within the Pacific Salmon Treaty (PST) are achieved.

Details can be found at the Pacific Salmon Commission (PSC) website at: http://www.psc.org/Index.htm.

Review of the performance of the PST provisions occurs annually at two bilateral meetings of the Southern and Fraser Panels of the PSC and those results are published post-season.

6.2 Domestic Allocation Objectives

The objective is to manage fisheries in a manner that is consistent with the *Allocation Policy for Pacific Salmon* and the 2013 Pacific Salmon Commercial Allocation Implementation Plan (See Appendix 7, Section 4).

An Allocation Policy for Pacific Salmon can be found on-line at:

http://www.dfo-mpo.gc.ca/Library/240366.pdf

The Allocation Policy for Pacific Salmon sets out principals for allocation between the recreational and commercial sectors and also identifies sharing arrangements for each of the three commercial fishing gear groups. The target coast-wide commercial gear shares are 40% seine, 38% gill net and 22% troll. An explanation of some of the features of Allocation planning is set out in Section 6.5.

6.3 First Nations Objectives

The objective is to manage fisheries to ensure that, after conservation needs are met, First Nations' food, social and ceremonial requirements and treaty obligations to First Nations have first priority in salmon allocation in accordance with the *Allocation Policy for Pacific Salmon*.

Feedback from consultation sessions is relied on to measure the performance of providing first priority to First Nations for opportunities to catch fish for FSC purposes and any treaty obligations.

Based on feedback received, the Department is working with the First Nations Salmon Coordinating Committee to develop draft information summaries which may help inform specific performance measures for incorporation in the future.

6.4 Recreational and Commercial Objectives

The objective is to manage fisheries for sustainable benefits consistent with established policies.

A primary objective in the recreational fishery is maintaining a predictable opportunity to fish with the expectation of catch. In the commercial fishery, the objective is to improve the economic performance of fisheries, to provide certainty to participants, and to optimize harvest opportunities. However, stocks of concern will continue to constrain opportunities in many fisheries resulting in less than optimal opportunities. Both fisheries will be managed to achieve maximum benefits where possible in accordance with conservation and allocation policies.

6.5 Allocation Guidelines

Allocation decisions are made in accordance with the *Allocation Policy for Pacific Salmon.*

Table 6-1 describes a generalized framework by which fishing opportunities are allocated to different fishing sectors at different abundance levels.

Table 6-1: Allocation guidelines

	Low Abundance		**High Abundance**		
First Nations FSC	Non-retention / closed	By-catch Retention	Directed	Directed	Directed
Recreational	Non-retention / closed	Non-retention	By-catch Retention	Directed	Directed
Commercial	Non-retention / closed	Non-retention	By-catch Retention	By-catch Retention	Directed

NOTE: This table describes conceptually 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.

The allocation guidelines above refer to directed fisheries. The application of the *Allocation Policy for Pacific Salmon* on non-target species or stocks is case specific. The inadvertent harvest of different species of concern is referred to as *by-catch*. The inadvertent harvest of stocks of concern within the same species (i.e. Cultus Lake sockeye when harvesting Summer Run sockeye) is referred to as *incidental harvest*. Both *by-catch* and *incidental harvest* are factored into the calculation of exploitation rates on various stocks, and therefore, 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 fishery management objectives.

All harvest groups have recommended that the Department consult on by-catch/incidental harvest allocations. However, the Department does not generally allocate by-catch or portions of the acceptable exploitation rate on stocks of concern. The Department considers a number of fishing plan options and attempts to address a range of objectives including minimizing by-catch and incidental catch. Please see website: http://www.dfo-mpo.gc.ca/Library/240366.pdf for more details.

6.6 First Nations - Food, Social and Ceremonial (FSC)

The *Allocation Policy for Pacific Salmon* provides that after requirements for conservation, the first priority in salmon allocation is to FSC for harvest opportunities under communal FSC licences issued to First Nations, and to treaty rights for harvest opportunities for domestic purposes (consistent with Treaty Final Agreements).

While these opportunities will be provided on a priority basis, it does not necessarily mean that fishery targets for First Nations will be fully achieved before other fisheries can proceed. For example, many First Nations conduct their FSC fisheries in terminal areas while other fisheries are undertaken in marine areas or approach areas. The general guideline is that fishing plans must adequately provide for the First Nations' FSC and/or domestic Treaty harvests that will occur further along the migration route over a reasonable range of potential run sizes.

6.7 First Nations Economic Opportunity and Inland Demonstration Fisheries

For a more detailed description of Aboriginal commercial fishing opportunities please refer to Appendix 5, Section 5.4.

6.8 Recreational Fisheries

Under the Department's *Allocation Policy for Pacific Salmon*, after FSC fisheries, the recreational sector has priority to directed fisheries for chinook and coho salmon. For sockeye, pink and chum salmon, the policy states that recreational harvesters be provided predictable and stable fishing opportunities. Recreational harvest of sockeye, pink, and chum will be limited to a maximum average of 5% of the combined recreational and commercial harvest of each species on a coast-wide basis over time.

If stock abundance information suggests that conservation objectives cannot be attained, closures or non-retention regulations will generally be applied. In some cases, recreational fisheries with a non-retention restriction in place may remain open provided the recreational fishery is not directed on any stocks of concern, nor is the impact on any stocks of concern significant in accordance with the *Selective Fishing Policy.*

Prior to a directed commercial fishery on specific chinook and coho stocks, the fishing plan will provide for full daily and possession limits for the recreational sector on those stocks. Decision guidelines may also identify considerations for changing the area of the fishery, modifying dates or changing daily limits.

6.9 Commercial Fisheries

The *Allocation Policy for Pacific Salmon* provides for a commercial harvest of sockeye, pink, and chum of at least 95% of the combined recreational and commercial harvest of each species on a coast-wide basis over time. Commercial harvest of chinook and coho salmon will occur when abundance permits and First Nations and recreational priorities are considered to have been addressed.

Specific sector target allocations are: seine 40%, gill net 38%, and troll 22% expressed on a sockeye equivalent basis. The ability to achieve these targets is often limited by conservation constraints and other factors.

Low impact fisheries (limited number of vessels) generally occur prior to those having a higher impact (full fleet), particularly at low run sizes, at the start of the run when run sizes are uncertain or when stocks of concern have peaked but continue to migrate through an area.

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.

Allocation targets are not catch targets for each sector. While the Department will usually plan and implement fisheries to harvest fish in accordance with allocation targets, opportunities may be provided that are inconsistent with the allocation targets. For example, in the case of Late Run Fraser River sockeye, the Department may choose to close marine fisheries (seine, gill net and troll) and open river fisheries (gill net) to take advantage of a low abundance of Cultus or Late Run sockeye and a significantly larger run size of Summer Run sockeye.

Commercial allocation targets by area and by species are included in Appendix 7.

6.10 Excess Salmon to Spawning Requirements Fisheries

Salmon fisheries are managed with the objective of reaching escapement targets or harvesting a certain proportion of the run. Uncertain forecasts, unanticipated differences in in-season run size estimates and mixed-stock concerns can result in escapement to terminal areas that are in excess of their required habitat or hatchery spawning capacity. In these cases, Excess Salmon to Spawning Requirements (ESSR) fisheries may occur.

The Department will attempt, wherever practical, to eliminate or minimize ESSRs by harvesting in the FSC, recreational, and commercial fisheries. It is not the intention of the Department to establish new ESSR fisheries to displace existing fisheries.

First priority will be to use identified surpluses to meet outstanding FSC requirements which cannot be met through approved FSC fisheries. This may be done under a communal licence. As a second priority, the local band or Tribal Council may be offered the opportunity to harvest all or part of the surplus under an ESSR licence which authorizes the sale of the surplus.

7. DECISION GUIDELINES AND SPECIFIC MANAGEMENT MEASURES

The following comprehensive decision guidelines outline management responses that will be invoked under a range of in-season circumstances, and the general rationale to be applied in making management decisions.

Decision guidelines are meant to capture general management approaches with the intention of working towards multi-year management plans.

Specific fishing plans are described in Appendices 5 to 7.

7.1 General Decision Guidelines

7.1.1 Pre-season Planning

Development of decision guidelines is part of the pre-season planning process. Development is guided by relevant departmental policies, scientific advice, consultation with First Nations, commercial and recreational harvesters and Marine Conservation Caucus, and the experience of fishery managers.

Pre-season decisions include the development of escapement targets, exploitation rate limits, sector allocations and enforcement objectives.

7.1.2 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. Decisions include opening and closure of fisheries, level of effort deemed acceptable, gear type restrictions, deployment of special projects, etc.

Where possible, in-season decisions will be consistent with pre-season plans; however, the implementation and applicability of decision guidelines and pre-season plans can be influenced in-season by a number of factors. These include unanticipated differences between pre-season forecasts and in-season run size estimates, unexpected differences in the strength and timing of co-migrating stocks, unusual migratory conditions and the availability and timeliness of in-season information.

7.1.3 Selective Fisheries

Selective fishing is defined as the ability to avoid non-target fish, invertebrates, seabirds, and marine mammals or, if encountered, to release them alive and unharmed (see *Policy for Selective Fishing in Canada's Pacific Fisheries*). Selective fishing technology and practices will be adopted where appropriate in all fisheries in the Pacific Region, and there will be attempts to continually improve harvesting gear and related practices.

All sectors have responded positively to the growing conservation consciousness. First Nations have embraced the principles of selective fishing by adopting more selective fishing gear, as

often these types of gear reflect a traditional way of fishing. The commercial fishing sector has developed its own Canadian Code of Conduct for Responsible Fishing Operations. Over 80% of Canada's fishing organizations have signed on and ratified the Code that is overseen by a Responsible Fishing Board. Similarly, the recreational fishery in the Pacific Region developed a Code of Conduct. In addition, DFO has worked with the Sport Fishing Institute (SFI) on a Tidal Angling Guide certification program. The Sport Fishing Institute of B.C. (SFI) and go2, the resource for people in tourism, have developed an Industry Training Authority approved Tidal Angling Guide (TAG) certification program. First of its kind in North America, this program encompasses Transport Canada requirements including the Small Vessel Operator Proficiency certification (SVOP). The SVOP and other certificates are federal requirements for non-pleasure, passenger carrying vessels operating on the B.C. coast**.**

7.1.4 Post-Release Mortality Rates

The salmon conservation and fisheries management measures in this IFMP are based on many considerations, including estimates of the mortality rates of salmon that are released from the various types of fishing gear that are used in commercial, recreational and First Nations fisheries. Post-release mortality rates can vary substantially and depend on many factors, including the location of the fishery, the unique characteristics of each type of fishing gear and method, and the species of salmon that is captured and released. In April 2001 DFO announced revisions to the post-release mortality rates that had been used by DFO in previous years. The mortality rates applied by DFO to each gear type and fishery prior to 2001, and the revised rates announced by DFO in 2001 with some more recent revisions are summarized in Table 7-1. The revised rates reflected the results of additional research on post-release mortality rates that were available at that time. DFO has generally continued to use these post-release mortality rates each year in the development of annual fishing plans including this salmon IFMP.

DFO will review the post-release mortality rates currently used for salmon fisheries in Canadian waters and update Table 7-1 as new information becomes available. Since 2001 additional research has been conducted on post-release mortality rates of salmon, and additional fishing methods and gear types have been implemented (e.g. beach seining, recreational catch and release study for Fraser sockeye salmon) in some salmon fisheries. The pre 2001 post-release mortality rates are included for historical comparison indicating which fisheries rates have changed. The 2001 post-release mortality rates currently applied by DFO for salmon fisheries, in some cases, are not the same as the rates that are currently applied by the bi-lateral Chinook Technical Committee under the Pacific Salmon Treaty. The results from the DFO review of mortality rates will be used to inform any additional revisions to the post-release mortality rates that are required to address these issues in the development of salmon IFMPs in future years.

Table 7-1: Post-Release Mortality Rates

Fishery	Pre 2001 Post-Release Rates (for historical comparison)	2001 Post-Release Rates
First Nations Fisheries	Various – Depending on gear used and fishery. Note: When using the same gear	Various – Depending on gear used and fishery.

Fishery	Pre 2001 Post-Release Rates (for historical comparison)	2001 Post-Release Rates
	and methods noted below the same mortality rates were applied.	Beach seine – 5% for sockeye and coho in-river Fraser
Recreational troll gear – sockeye, coho, pink and chum	10%	10% except 3% for sockeye in-river Fraser
Recreational Troll gear – chinook	15%	15%
Recreational mooching gear – coho and chinook	10% for coho; 15% for chinook	20% for coho in Areas 1 & 2; 16% for coho in Areas 3 to 10; 10% for coho in other areas; 15% for chinook in all areas.
Commercial gill net (South Coast)	60% to 70%	60% with provision for rates as low as 40% where selective techniques warrant.
Commercial seine – North Coast (Areas 1 to 10)	10% to 25%; 5% in Area 4 special seine fishery	15% all areas, except 10% in the Area 4 special seine fishery.
Commercial seine – South Coast (Areas 11 to 29)	15% to 25%	25% Johnstone Strait; 70% Area 20 – coho, 25% all areas for sockeye
Commercial troll – All Areas	26%	10% sockeye, 15% coho and chinook.
Commercial tooth tangle net 3.5" mesh	n/a	10% sockeye, 15% coho

7.2. AABM Chinook Decision Guidelines

7.2.1. Background

Chinook fisheries in B.C. are managed under the umbrella of the PST, with domestic considerations for stocks of concern, allocation between sectors of the fishery and application of selective fishing practices.

The basis for managing fisheries impacting chinook from Alaska to Oregon is the chinook abundance based management system in Chapter 3 of the PST. This management system was adopted in 1999 and defined harvests of chinook through 2008. Chapter 3, revised for

implementation in 2009, maintains the abundance based management framework established under the 1999 Agreement.

Further explanation and the text of the chinook agreement can be found on the PSC website at: http://www.psc.org/Index.htm.

Two types of fisheries are identified in this agreement; that is, Aggregate Abundance Based Management (AABM) and Individual Stock Based Management (ISBM). In southern B.C., the AABM applies to the following waters on the WCVI:

- Offshore waters including Areas 121 to 127; and
- Inside waters including Areas 21, 23, and 24 from Oct 16 to July 31; and Areas 25, 26, and 27 from Oct 16 to June 30.

7.2.1 Constraints

The mixed-stock aggregate fisheries of Southeast Alaska, northern BC, and WCVI are managed on the forecast abundance of the AABM stocks. Fisheries are managed based on a chinook fishery year which extends from October 1 in one calendar year to September 30 in the next calendar year.

7.2.2 Decision Guidelines

Within the PST chinook management framework, Canadian domestic policy further defines fishing opportunities. The domestic objectives or policies which will most affect fishing opportunities include: conservation, the WSP, the *Allocation Policy for Pacific Salmon*, and the *Policy for Selective Fishing in Canada's Pacific Fisheries*. Domestic conservation concerns may reduce the TAC to levels less than identified under the PST Chinook AABM fisheries.

When there is a TAC identified for the AABM management area, targeted chinook fisheries are planned for First Nations, recreational, and commercial sectors. Table 7-2 describes management measures that will be taken to minimize impacts on stocks of concern in AABM chinook fisheries.

Table 7-2: Stock management actions anticipated in AABM chinook fisheries to limit impacts on stocks of concern.

Stock of Concern (constraint)	First Nation (FN) Fishery	Recreational Fishery	Commercial Fishery
WCVI Chinook	Harvest levels outlined in communal licences	On-going terminal area restrictions for wild stocks of concern.	Area G -Time and area closures on WCVI (i.e. avoid inshore fisheries during the time period July to September).
		Maximum size limit inside the management corridor.	Area F - measures in the North Coast troll fishery to limit ER to 3.2%
South Coast Coho (including Interior Fraser River)	Harvest levels outlined in communal licences	Coho retention limited to selective hatchery mark fishery (SHMF).	Non retention of wild coho.
			Potential for limited hatchery marked coho retention in September
Fraser River Spring 4_2 Chinook	No impacts on WCVI First Nations fisheries anticipated.	No impacts on WCVI recreational fisheries anticipated.	Time and area closures and effort limits.
Fraser River Spring 5_2 and Summer 5_2 Chinook	No impacts on WCVI First Nations fisheries anticipated.	No impacts on WCVI recreational fisheries anticipated.	Time and area closures and effort limits
			Proposed June and July closure if returns are in management zone 1
Lower Strait of Georgia Chinook	Harvest levels outlined in communal licences.	Time and area closures Catch limits and minimum size limits. Measures will vary by area.	AABM harvest rate reduction should reduce impact on LGS chinook Time and area closures (Areas south of Estevan Pt. closed in March and April) Reduced harvest levels in period March to June.

7.2.3 Issues

Table 7-3: Assessment of risk of impact on stocks of concern during chinook fisheries in the AABM management area of the WCVI.

Fishery Period	Risk of impact on stocks of concern
Oct. – Feb.	**Low risk.** Fisheries in October are outside the migration period and area for several stocks of concern, including Interior Fraser River coho, WCVI chinook, Fraser River Spring 4_2, Spring 5_2 and Summer 5_2 chinook. Catch will be comprised of fish returning in subsequent calendar year or later. The majority of the chinook catch will be of stocks of U.S. and lower Fraser River origin.
Mar. – May	**Moderate - High risk.** Specific concerns for Fraser River Spring 4_2 chinook. Increased incidence of lower Strait of Georgia chinook especially in May.
June - mid-Sept.	**Moderate - High risk.** Potential concern for impacts on Fraser River Spring 5_2 and Summer 5_2 chinook in June and July. Monitoring of coho encounters in early to mid-June is required. Risk increases as coho recruit to fishery. Stocks of concern, including Interior Fraser River coho are prevalent. Selective fishing methods may reduce risk by avoiding coho. Concerns for impacts on returning local WCVI stocks. Offshore fishing may reduce risk by avoiding WCVI chinook. Concerns for impacts on lower Strait of Georgia chinook.
Mid Sept.	**Low risk.** Coho impacts reduced because nearing end of migration out of WCVI area. WCVI chinook may be avoided by area restrictions. Concerns for impacts on lower Strait of Georgia chinook.

7.2.4 Prospects

The Chinook Technical Committee (CTC) has completed a final calibration of the Chinook Model for the upcoming 2013 fishing season. The completed calibration provides the Abundance Indices (AI) that are required for determining the preseason estimated allowable catches for the three Aggregate Abundance Based Management (AABM) fisheries: Southeast Alaska all gear (SEAK), Northern British Columbia troll and Queen Charlotte Island sport (NB.C.), and West Coast Vancouver Island troll and outside sport (WCVI). The AIs and the associated allowable catches are shown in Table 7-4. Effective January 1, 2009 the renegotiated Pacific Salmon Treaty terms were put into effect including, the implementation of a 15% reduction in Southeast Alaska (SEAK) and a 30% reduction in the Total Allowable Catch (TAC) for the WCVI AABM. The allowable catches in Table 7-4 reflect this change.

Table 7-4: Abundance indices and associated allowable catches for the 2013 AABM Fisheries.

	SEAK	NB.C.	WCVI
Abundance Index	1.20	1.10	0.77
Allowable Catch	176,000	143,000	115,300

Table 7-5: Stock outlook anticipated in AABM chinook fisheries.

Stock of Concern (constraint)	**Stock Outlook for 2013**
WCVI Chinook	The return of Somass chinook is likely low given that smolt survival rates for the three sea entry years (2009, 2010 and 2011) were either low or very low.
	Concerns persist for wild stocks, particularly in Area 24.
South Coast Coho (including Interior Fraser River)	Status is low.
	Low returns expected because of continued poor marine survivals.
Fraser River Spring 4_2 Chinook	Returns for 2013 are expected to continue to be below long term average and target levels.
Fraser River Spring 5_2 and Summer 5_2 Chinook	Returns for 2013 are expected to continue to be below long term average and target levels.
	Pre-season expectation is for returns to the Fraser of less than 45,000 (zone 1)
	Abundance estimated in-season based on Albion test fishery CPUE.
Lower Strait of Georgia Chinook	Lower Strait of Georgia chinook abundance remains low. Continued improvements for Cowichan and Nanaimo chinook. Hatchery chinook returns continue to improve from recent lows.

7.3 ISBM Chinook Decision Guidelines

7.3.1 Background

Chinook fisheries in B.C. are managed under the umbrella of the Pacific Salmon Treaty, with domestic considerations for stocks of concern, allocation between sectors of the fishery, and application of selective fishing practices.

Under the Pacific Salmon Treaty, an ISBM fishery is an abundance-based regime that constrains to a numerical limit the total catch or the total adult equivalent mortality rate within the fisheries

of a jurisdiction for a naturally spawning chinook salmon stock or stock group. ISBM management regimes apply to all chinook salmon fisheries subject to the PST that are not AABM fisheries and include marine and freshwater salmon fisheries from northern British Columbia to northern Oregon coast. ISBM fisheries in Southern B.C. are mostly represented by Strait of Georgia troll, Strait of Georgia recreational, WCVI net, Juan de Fuca net, Johnstone Strait net, and Fraser net.

For management purposes in 2013, Fraser chinook stocks will be managed using the Spring 4_2, Spring 5_2, Summer 5_2, Summer 4_1 and Fraser Fall 4_1 (Harrison) management units employed under the Pacific Salmon Treaty (PST) process to align fisheries management objectives with indicator stocks, escapement, catch, and exploitation rate data used in the PST process. The relationship between current PST management units, Wild Salmon Policy conservation units (CUs) and spawning locations is shown in Table 7-6.

Management objectives have been identified for Spring 4_2 chinook (Section 5.1.3) and for the combined management units of Spring 5_2 and Summer 5_2 chinook (Section 5.1.4). Fishery guidelines for the Summer 4_1 and Fraser Fall management units are outlined below.

Table 7-6: Relationship between current Pacific Salmon Treaty escapement reporting units, Wild Salmon Policy (WSP) conservation units (CUs) and spawning locations.

PST Unit	CU #	CU Name	Spawning Locations
Spring 4_2 Chinook	16	STh Bessette Creek	Bessette Creek;
	17	LTHOM spring	Bonaparte River; *Coldwater River*; Deadman River; *Louis Creek*; Nicola River; *Spius Creek*
Spring 5_2 Chinook	4	LFR springs	*Birkenhead River*
	5	LFR Upper Pitt	Pitt River-upper
	8	FR Canyon-Nahatlatch	Nahatlatch River
	10	MFR springs	Cariboo River-upper; *Chilako River*; *Chilcotin River upper*; Chilcotin River-lower; *Cottonwood River*; Horsefly River; Narcosli Creek; Naver Creek; West Road River
	12	UFR springs	Bowron River; Dome Creek; East Twin Creek; Fraser River-above Tete Jaune; Forgetmenot Creek; Goat River; Holliday Creek; Holmes River; Horsey Creek; Humbug Creek; Kenneth Creek; McGregor River; McKale River; Morkill River; Nevin Creek; Ptarmigan Creek; Slim Creek; Small Creek; Snowshoe Creek; Swift Creek; Torpy

PST Unit	CU #	CU Name	Spawning Locations
			River; Walker Creek; Wansa Creek; West Twin Creek; Willow River
Spring 5_2 Chinook	18	NTHOM spring	Blue River; Finn Creek; Raft River
Summer 5_2 Chinook	6	LFR summers	Big Silver Creek; Chilliwack/Vedder River; Cogburn Creek; Douglas Creek; Green River; Lillooet River; Lillooet River-lower; Lillooet River-upper; Sloquet Creek; Weaver Creek
	9	MFR Portage	Portage Creek
	11	MFR summers	Bridge River; Cariboo River lower; Chilko River; Endako River; Kazchek Creek; Kuzkwa River; Nechako River; Quesnel River; Seton River; Stellako River; Stuart River;
	14	STh summer age	Eagle River; Salmon River;
	19	NTHOM summer age	Barriere River; Clearwater River; Mahood River; North Thompson River
Summer 4_1 Chinook	7	Maria Slough	Maria Slough
	13	STh summer age	Adams River; Little River; South Thompson River; Lower Thompson River;
	15	Shuswap River summer age	Shuswap River-lower; Shuswap River-middle
Fraser Late	3	LFR fall white	Harrison River

Table 7-6 Notes:
1) Seven early-timed chinook stocks shown in italics.
2) Chilcotin River upper not part of PST spring 5_2 aggregate due to short time series.
3) Salmon River (Salmon Arm), Eagle, Bridge River and Endako River currently included with PST spring 5_2 aggregate. STh summer age CU could be changed to STh spring age CU. Bridge and Endako suggest for MFR Spring CU.
4) Raft River may belong with North Thompson Summers based on timing. Currently included with PST summer 5_2 aggregate.

7.3.2 Constraints

In the ISBM management area inside of Vancouver Island, fisheries are constrained in order to meet PST obligations to reduce chinook harvest rates and adult equivalent mortality levels. To meet this requirement in mixed-stock fisheries, there are periods and areas with non-retention of chinook in commercial fisheries (though by-catch retention may be allowed in some troll and gill

net fisheries), recreational chinook fisheries have daily and annual limits, and First Nations are provided opportunities for FSC purposes only. In particular, management action will continue to minimize impacts on Strait of Georgia origin chinook in 2013. Further fishery opportunities may be provided in-season in terminal locations with an identified surplus. Table 7-7 summarizes management actions taken in ISBM management areas to reduce impacts on stocks of concern.

Table 7-7: Management actions anticipated in ISBM chinook fisheries to limit impacts on stocks of concern.

Stock of Concern (constraint)	First Nation (FN) Fishery	Recreational Fishery	Commercial Fishery
WCVI Chinook	- Conservation measures under discussion. - FN self-imposed harvest constraints	- Time and area closures - Size limit inside the WCVI management corridor and other areas shoreward of the management corridor -Some areas will be 2 chinook but only 1 >77cm or 2 < 77cm - Catch limits - Measures will vary by area.	- Time and area closures during the July to September period.
South Coast Coho (including Interior Fraser River)	- Time and area restrictions -Gear restrictions -Measures will vary by area	- Time and area closures - Mark selective retention for coho - Catch limits - bait bans - Measures will vary by area.	- Generally non-retention of coho except for by-catch retention in terminal fisheries in Nootka and Barkley.
Fraser Chinook - Spring 4_2, Spring 5_2 and Summer 5_2	- Time and area restrictions - Gear restrictions - Measures will vary by area	- Time and area closures - Size limits -Mark selective retention in Areas 19 and 20 - Catch limits - Measures will vary by area. - Additional measures for portions of Areas 18, 19, 20, 29 and in the Fraser River	- No directed commercial chinook salmon fisheries anticipated in ISBM waters on the east side of Vancouver Island.

Strait of Georgia Chinook	- Time and area restrictions - Gear restrictions . -Measures will vary by area	- Time and area closures - Catch limits - Measures will vary by area.	- No directed commercial chinook salmon fisheries anticipated in ISBM waters on the east side of Vancouver Island.
North Vancouver Island / Johnstone Strait Chinook	- No impacts on FN directed chinook fisheries anticipated.	- Time and area chinook non-retention - Catch limits - Gear restriction (i.e. barbless hooks)	- No directed commercial chinook salmon fisheries anticipated in ISBM waters on the east side of Vancouver Island.

7.3.3 Decision Guidelines

For these fisheries, the Agreement imposes a limit on the adult equivalent mortality rate for individual stock groups. In Canada, the adult equivalent mortality rate in all ISBM fisheries was limited to 63.5% of the historic base period (1979-1982) adult equivalent mortality rate on each stock group.

WCVI Chinook

The 2013 forecast of chinook to the Stamp River and the Conuma hatchery is 16K and 17K, respectively. The forecast return to the Somass is very low and terminal management measures are required to protect spawning chinook. In-season abundance estimates will be reviewed by DFO and First Nations staff in a timely manner to allow additional terminal fishing opportunities that may arise in-season for WCVI chinook and other terminal returns of unexpected salmon abundances. (i.e. Area 25).

The Area 23 Harvest Committee focus group is developing a Somass chinook local integrated fishery management plan that will define the escapement targets and harvest rates under various run sizes. It is anticipated that the fishing plan will be incorporated into this year's fishing season.

Fraser Spring 4_2 Chinook

Fishery restrictions for this management unit are planned consistent with the management objective (Section 5.1.3). For fisheries in the Fraser River, Spring 4_2 management actions will be the driver for management actions until July 15th when greater than 70% of this run is expected to have passed by Albion in the lower Fraser River. After July 15th and until the end of July management actions will be guided by the management zones identified for Spring 5_2 and Summer 5_2 chinook outlined in Section 5.1.4.

Fraser Spring 5_2 and Summer 5_2 Chinook

The Fraser Spring 5_2 and Summer 5_2 chinook are two of five PST management units for Fraser chinook. This group contains 11 conservation units and includes four populations previously referred to as Early-timed chinook. Spring 5_2 chinook return to the Fraser River to spawn from early March through late July and migration peaks in late June in the lower Fraser. Summer 5_2 chinook has later timing and return to the Fraser River to spawn from late June to August with a peak in late July. These populations primarily mature as adults at age-5 (approx. 70%) and age-4 (approx. 20%) with lower numbers at age-3 and age-6.

Given the poor pre-season outlook, the Department is planning to begin the season with management actions based on returns being less than 45,000 (zone 1). The management zone may be updated in mid-June based on an in-season analysis of the abundance of chinook at the Albion test fishery as outlined in Section 5.1.4.

Currently, there is not a PST indicator stock for these management units, however, information from past CWT recoveries (e.g. Dome Creek, a Spring 5_2 indicator) from these populations indicates that Spring 5_2 chinook have been encountered in many of the same areas as Spring 4_2 chinook. Summer 5_2 chinook are also encountered in the same areas, but relative impacts between fisheries may differ given the approximately 1 month later migration timing of these Summer 5_2 stocks.

For fisheries in the Fraser River, management actions will be in place after July 15th until the end of July in the lower Fraser River when greater than 70% of this run is expected to have passed Albion.

Fraser Summer 4_1 Chinook

The management objective for the Fraser Summer 4_1 has not been established. However, the Department is working on developing a management objective for the PST process which requires an escapement objective to be developed consistent with maximum sustained yield (MSY) or other agreed biologically-based escapement goals.

The Lower Shuswap River is the CWT indicator stock for this group, however to date, the time series of data is too short to undertake stock-recruit analyses to estimate the number of spawners required to produce maximum sustained yield (S_{MSY}). Based on preliminary analysis from habitat models, S_{MSY} for the Lower Shuswap indicator population is estimated at approximately 14,000 spawners. Mark-recapture escapement estimates of escapements to the Lower Shuswap indicator were close to or slightly above the estimated S_{MSY} in 2007 and 2008, and exceeded the S_{MSY} value in 2009 (~24,000), 2010 (~71,000) and 2011 (~19,000). The preliminary escapement estimate for 2012 is ~4,000.

The Fraser Summer 4_1 chinook stock group consists of several populations which spawn almost exclusively within the Thompson River watershed, and migrate through the Lower Fraser River from mid-July to mid-September. Within this stock group, the Lower Shuswap River is the CWT indicator stock used to monitor survival and exploitation. Other systems of the aggregate

are assessed visually, and work is underway to calibrate their escapement estimates. There are no pre-season or in-season abundance forecasts developed for this aggregate.

Directed fishing opportunities may occur on this stock group, provided that fisheries can be designed to limit impacts on co-migrating possible stocks of concern including: Spring 4_2 chinook, Spring/Summer 5_2 chinook, Fraser Fall chinook, Fraser River sockeye, and Interior Fraser River coho. Recent reductions to SE Alaska fisheries as a result of changes to the PST chinook Annex may provide some limited additional flexibility in planning fisheries directed on Summer 4_1 chinook. While formal projections of terminal abundance for this aggregate are not produced, the number of additional chinook returning to the Fraser River as a result of SE Alaska reductions may be between 3,000 and 10,000 chinook based on fishing patterns observed from 2004 to 2008.

Fraser Fall 4_1 (Harrison) Chinook

The PST approved escapement goal for the Fraser Fall 4_1 (Harrison) chinook is a range of 75,100 to 98,500 spawners.

Fraser Fall chinook spawn mostly in the Harrison and Chilliwack watersheds and return to the Lower Fraser between mid-August and mid-November, with the majority of the run migrating through this area from mid-September to mid-October. This is the only Fraser River chinook population for which a formal forecast is produced. The 2013 estimate of the terminal spawner abundance (i.e. after all ocean fisheries removals) for Harrison chinook will not be available until mid-April.

While overall exploitation rates on these chinook are low, averaging approximately 20%, additional fishery management actions including chinook non-retention in commercial fisheries in the Fraser River may be considered given the Outlook.

7.3.4 Issues

Issues regarding ISBM chinook stocks are covered in the previous subsections.

7.3.5 Prospects

In the 2013 Salmon Outlook, Fraser River Spring 4_2, Spring 5_2, Summer 5_2 chinook have been classified as *stocks of concern.* For Summer 4_1 chinook, the outlook for most of the component populations is *low/near target*. For Fraser Fall 4_1 (Harrison) chinook the outlook is *low.* A formal forecast will be ready in late winter.

Table 7-8: Stock outlook anticipated in ISBM chinook fisheries.

Stock of Concern (constraint)	Stock Outlook for 2013
WCVI Chinook	- Forecast will be available in March 2013. - Concerns persist for wild stocks.

Fraser Chinook - Spring 4_2, Spring 5_2 and Summer 5_2	- Returns are expected to continue to be well below long term average and target levels.
Strait of Georgia Chinook	- Lower Strait of Georgia chinook is low. - Continued low returns anticipated.
North Vancouver Island / Johnstone Strait Chinook	- Returns expected to be well below average.

7.4. ABM Coho Decision Guidelines

7.4.1 Background

Coho fisheries in southern B.C. are managed under the umbrella of the PST, with domestic considerations for stocks of concern, allocation between sectors of the fishery, and application of selective fishing practices. Note that the coho provisions negotiated in 2002 have been incorporated in the new PST.

PST Coho Abundance Based Management Framework

The basis for managing fisheries impacting wild coho originating from southern B.C., Washington State, and Oregon is set out in the PST. This abundance based management system was adopted in 2002 and will define harvests of Southern coho through 2018. The ABM plan constrains total fishery exploitation of key stock management units, including Strait of Georgia mainland, Strait of Georgia Vancouver Island, lower Fraser, and Interior Fraser. Other Canadian management units of domestic importance include the WCVI, Johnstone Strait - Mainland Inlets and the Central Coast. In the United States, the management units relevant to the agreement include the Skagit River, the Stilliguamish, the Snohomish, Hood Canal, tributaries to the Strait of Juan de Fuca, the Quillayute, the Hoh, Queets, and Grays Harbour. For each of these management units, annual limits of fishing mortality will be established based on the level of abundance and the health of the wild stocks. The text of the agreement and formulae for sharing between the two countries can be found on the PSC website at: http://www.psc.org/Index.htm.

Under the principles of coho ABM management, as stocks become less abundant, more stringent fishery management actions will be implemented. As stocks become more abundant, increased fishing opportunities will be considered.

7.4.2. Constraints

Within the PST coho management framework, Canadian domestic policy will further define fishing opportunities. Domestic conservation concerns may limit total fishing mortality to a level less than stipulated in the PST coho ABM. For example, if abundance is "critically" low, such as the case with Interior Fraser River coho in recent years, domestic fisheries may be limited below the lowest allowable exploitation identified by the coho ABM agreement. Allowable catch is determined according to the priorities set out in the *Allocation Policy for Pacific Salmon*. Selective fishing practices are also taken into account when developing fishing opportunities.

7.4.3. Decision Guidelines

Management of salmon fisheries in southern B.C. will be shaped to accommodate the status level of coho within management units defined by the PST. Table 7-9 summarizes the general fishery management approaches by fishery sector associated with each status level (critically low, low, moderate and abundant).

Table 7-9: Southern BC coho mixed-stock fishery guidelines

Coho Abundance / Status Level (3 levels within PSC Coho ABM and 4 levels in domestic Canadian management)				
PSC STATUS	**LOW**		**MODERATE**	**ABUNDANT**
DOMESTIC	**Critically Low**	**Low**	**Moderate**	**Abundant**
	Objective: No directed fisheries and avoidance.	Objective: Fisheries uncertain and likely small.	Objective: Normal fisheries are probable.	Objective: Extensive fisheries are likely.
First Nations FSC Fisheries	**NON-DIRECTED FISHERIES AND AVOIDANCE, VERY LIMITED BY-CATCHES PERMITTED.**	Opportunities will range from limited directed fisheries to regular FSC fisheries in terminal areas with strong escapements.	Regular FSC fisheries.	Regular FSC fisheries.
Recreational Fisheries	Severe restrictions in approach areas, non-retention and avoidance through time and area closures. SHMF may be considered.	A combination of SHMF and limited retention fisheries are possible, depending upon time and area under consideration.	Up to normal limits, marked and un-marked.	Normal limits.
Commercial - Net Fisheries	Severe restrictions including time and area closures, non-retention and avoidance. Selective fishing practices are required.	Generally non-retention and selective fishing practices. Potential for limited by-catch retention for gill nets.	Generally non-retention and selective fishing practices. Potential for limited by-catch retention for gill nets.	Some non-retention and increased potential for by-catch retention for gill nets and seines.

Coho Abundance / Status Level (3 levels within PSC Coho ABM and 4 levels in domestic Canadian management)				
PSC STATUS	**LOW**		**MODERATE**	**ABUNDANT**
DOMESTIC	**Critically Low**	**Low**	**Moderate**	**Abundant**
Commercial - Troll Fisheries	Severe restrictions including time and area closures, non-retention and avoidance. Selective fishing practices are required.	Generally non-retention and selective fishing practices. Potential for limited by-catch retention.	Limited by-catch retention possible. Potential for small target catch fisheries.	Targeted fisheries are likely.

Under "low" status, the United States is limited to 10% exploitation on coho originating from the Interior Fraser management unit. Canadian fisheries will be managed to limit total fishing mortality to a maximum of 3% for the Interior Fraser management unit, a level which recognizes the continued low status of this stock aggregate. The 3% limit on exploitation will result in management actions that limit encounters of wild coho in southern B.C. fisheries where Interior Fraser River coho are prevalent, that is, in waters south of Cape Caution. Non-retention of wild coho will generally be in effect except First Nations FSC fisheries, where retention as a by-catch during fisheries for other species may be permitted, depending on the time and area of the fishery. First Nations FSC fishing opportunities will also be considered in specific terminal systems where escapement levels as determined by counting fences are an accurate reflection of total abundance. Selective fishing practices will be required in all commercial and recreational fisheries. There may be wild coho retention in terminal locations with identified surpluses. The level of compliance to selective fishing standards will be monitored. Poor selective fishing practices during periods of high prevalence of Interior Fraser River coho stocks may result in reduced fishing opportunities. In addition, avoidance of coho will be required during periods of high prevalence of Interior Fraser River coho.

Coho fishing mortality will be determined pre-season from estimated encounters, fishing effort levels, best estimate of the proportion of Interior Fraser River stocks within the total encounters, and an average release mortality rate. A post-season review will be conducted to confirm the estimated Interior Fraser impact.

The Department is planning to review the status of Interior Fraser River coho; this work will need to be completed before the Department considers requests for additional access to wild coho and/or hatchery marked coho when levels of abundance are high. See section 5.1.5 for more details.

7.4.4. Issues

Directed coho fisheries will be constrained when there is evidence of co-migrating stocks of concern. Table 7-10 summarizes management actions that will be taken to limit impacts on salmon stocks of concern encountered in coho fisheries.

Table 7-10: Management actions in coho fisheries to limit impacts on stocks of concern

Stock of Concern (constraint)	Stock Outlook for 2013	First Nation (FN) Fishery	Recreational Fishery	Commercial Fishery
Strait of Georgia Coho (including lower Fraser)	- 2013 Outlook is low - Returns are expected to be similar to last year well below desired levels.	- Time and area closures - Opportunities will range from limited directed fisheries to regular FSC fisheries in terminal areas with strong escapements. - Measures will vary by area and associated impacts on individual stocks.	- Time and area closures - Gear restrictions (i.e. barbless hooks) - Catch limits - Measures will vary by area and associated impacts on individual stocks. See Appendix 6 section 6.3.	- No directed commercial coho fisheries (or coho retention) in areas where Strait of Georgia coho are found. - Significant restrictions on commercial fisheries directed at other salmon stocks in areas where Georgia St coho are found.
Interior Fraser River coho	- Low - 2013 Outlook is Stock of concern. -Returns are expected to be well below desired levels.	- Time and area closures - Opportunities will range from limited directed fisheries to regular FSC fisheries in terminal areas with strong escapements.	- Time and area closures - Gear restrictions (i.e. barbless hooks) - Constraints on coho by-catch - Measures will vary by area and associated impacts on	- No directed commercial coho fisheries (or coho retention) in areas where Interior Fraser River coho are found. - Significant restrictions on commercial fisheries directed at other salmon stocks in areas where

Stock of Concern (constraint)	Stock Outlook for 2013	First Nation (FN) Fishery	Recreational Fishery	Commercial Fishery
		- Measures will vary by area and associated impacts on individual stocks.	individual stocks. See Appendix 6 section 6.3.	Interior Fraser River coho are found.

The ABM approach will be to substantially reduce coho exploitation below historic levels, and may result in some terminal surpluses. Terminal selective fishery opportunities and by-catch retention may be considered in-season in locations in which coho surpluses are identified.

7.4.5. Prospects

For 2013, the status of southern B.C. stocks ranges from stock of concern to near target. Most adults returning in 2013 are from the 2010 brood year that smolted in 2012. There were abundant spawners in 2010 and the marine indicators for the 2012 sea entry year are very positive; therefore, the outlook for 2013 is for an abundant return. For WCVI stocks the 2012 returns into the Stamp River were about average. WCVI coho have generally been at moderate status in recent years.

Stocks in Johnstone Strait and Interior Fraser are stocks of concern to near target status. Expectations are for returns similar to the last 3 years but are highly uncertain. Lower Fraser stocks remain at low status and the outlook for 2013 is for continued low abundance, a result of low escapement in 2010 and persistent unfavourable conditions affecting coho survival

In Strait of Georgia marine survival rates for 2012 returns are not available. The early indication for the 2012 escapement is that the runs are higher than the near term average, indicating a continuing increase in marine survival. The 2013 expectation is for improving returns, similar to last year.

7.5 Fraser River Sockeye Decision Guidelines

7.5.1 Background

Fraser River sockeye are managed on the basis of the four management groups (Early Stuart Run, Early Summer Run, Summer Run, and Late Run) however, as in past years, stock management at a finer scale may be considered. Spawning escapement targets and harvest rules are developed annually for each management group.

The Fraser River Sockeye Spawning Initiative/Wild Salmon Policy process was initiated in 2006 and is used to inform escapement strategy options (refer to DFO's consultation website for details).

7.5.2 Constraints

Though total allowable catch (TAC) is identified on various management groupings in most years, conservation and management constraints on co-migrating stocks, management groups, or species can affect harvest opportunities. These constraints are described below.

7.5.3 Decision Guidelines

7.5.3.1 Pre-season Planning

Prior to each fishing season, decisions are made about spawning escapement targets, harvest rates, management priorities and identification of conservation constraints. These decisions are made based on pre-season forecasts of run size, timing, stock composition, other technical information and input from various consultative processes. Potential fishing opportunities are identified based on these pre-season guidelines and in-season information.

Run Size Forecast:
Pre-season forecasts of run size at various probability levels are developed for major sockeye stocks within the four management groups. Fraser sockeye forecasts for 2013 remain highly uncertain due to many factors including the wide variability in annual survival rates. This has been demonstrated in recent years with some of the lowest productivities observed in the 2009 return and a return to average productivities in 2010, 2011 and 2012.

The 2013 run size forecast approach uses a suite of models which were selected on a stock-specific basis based on their ability to predict true returns over the full stock-recruitment time series. The forecast is highly uncertain as represented by the cumulative probabilities. There is a one in ten chance that the return of Fraser River Sockeye Salmon will be at or below 1.55 million (i.e. lower 10% forecast range) and a nine in ten chance that it will be at or below 15.61 million (i.e. upper 90% of forecast range). The mid-point of the forecast is 4.77 million (there is a one in two chance the return will be below this specified run size). Forecast returns are dominated by Summer Run stocks in 2013 (Table 7-11).

For further details refer to the Canadian Science Advisory Secretariat Research Document: Pre-season run size forecasts for Fraser River Sockeye and Pink salmon in 2013 (Grant and MacDonald):
http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2012/2012_145-eng.html

Table 7-11: Pre-season sockeye return forecasts by stock and timing group (CSAS SAR, 2012/124).

A	B	C	D	E	F	G	H	I	J	K	L
Run timing group		**BY (09)**	**BY (08)**	**Ret**	**Mean Run Size**		**Probability that Return will be at/or Below Specified Run Size [a]**				
Stocks	**Forecast Model [b]**	**(EFS)**	**(EFS)**	**2013**	**all cycles[c]**	**2013 cycle[d]**	**10%**	**25%**	**50%**	**75%**	**90%**
Early Stuart	*Ricker (Ei)*	21,900	14,400		**311,000**	**792,000**	**92,000**	**137,000**	**211,000**	**331,000**	**507,000**
Early Summer					**478,000**	**274,000**	**73,000**	**130,000**	**253,000**	**468,000**	**844,000**
(total excluding miscellaneous)					***478,000***	***274,000***	**55,000**	**94,000**	**180,000**	**342,000**	**621,000**
Bowron	*MRS*	1,000	300		39,000	24,000	2,000	3,000	7,000	14,000	26,000
Fennell	*Power*	700	200		25,000	12,000	3,000	5,000	9,000	15,000	25,000
Gates	*Larkin*	5,300	1,800		53,000	40,000	24,000	37,000	67,000	115,000	191,000
Nadina	*MRJ*	3,700	10,200		80,000	72,000	10,000	20,000	44,000	95,000	189,000
Pitt	*Larkin*	18,100	5,400		72,000	74,000	5,000	9,000	15,000	28,000	50,000
Scotch	*Ricker*	2,700	100		78,000	25,000	4,000	8,000	17,000	39,000	82,000
Seymour	*Ricker-cyc*	3,100	300		131,000	27,000	7,000	12,000	21,000	36,000	58,000
Misc (EShu & Taseko) [e]	*RS (Sc/Se)+RS(Chilko)*	1,500	500		NA	NA	2,000	4,000	13,000	18,000	20,000
Misc (Chilliwack) [f]	*RS (Esum)*	2,400	19,700		NA	NA	15,000	31,000	57,000	103,000	194,000
Misc (Nahatlatch) [f]	*RS (Esum)*	400	150		NA	NA	1,000	1,000	3,000	5,000	9,000
Summer					**3,822,000**	**6,791,000**	**1,222,000**	**2,095,000**	**3,718,000**	**6,663,000**	**12,131,000**
(total excluding miscellaneous)					***3,822,000***	***6,791,000***	**1,218,000**	**2,088,000**	**3,705,000**	**6,637,000**	**12,079,000**
Chilko [g]	*Power (juv) (Pi)*	35 M	11.8 M		1,350,000	824,000	736,000	1,147,000	1,829,000	2,929,000	4,482,000
Late Stuart	*Power*	43,300	57,900		560,000	1,654,000	80,000	151,000	333,000	686,000	1,393,000
Quesnel	*Ricker-cyc*	82,800	2,500		1,358,000	3,956,000	277,000	596,000	1,218,000	2,445,000	5,188,000
Stellako	*Larkin*	15,800	73,800		462,000	245,000	91,000	131,000	192,000	291,000	423,000
Raft [h]	*Ricker (PDO)*	6,000	3,600		32,000	28,000	22,000	32,000	51,000	81,000	124,000
Harrison [h & i]	*Ricker (Ei)*	100,600	399,661		60,000	84,000	**12,000	**31,000	**82,000	**205,000	**469,000
Misc (N. Thomp. Tribs) [h & j]	*R/S (Ra/Fe)*	70	200		NA	NA	100	300	1,000	1,000	2,000
Misc (N. Thomp River) [h & j]	*R/S (Ra/Fe)*	1,700	1,000		NA	NA	4,000	7,000	12,000	25,000	50,000
Late					**2,960,000**	**834,000**	**167,000**	**293,000**	**583,000**	**1,133,000**	**2,126,000**
(total exlcuding miscellaneous)					***2,960,000***	***834,000***	***160,000***	***280,000***	***559,000***	***1,091,000***	***2,053,000***
Cultus [g]	*MRJ*	174,000	145,300		39,000	14,000	2,000	3,000	7,000	16,000	33,000
Late Shuswap	*Ricker-cyc*	20,200	80		2,152,000	182,000	14,000	36,000	111,000	274,000	574,000
Portage	*Larkin*	800	60		40,000	47,000	2,000	5,000	12,000	28,000	61,000
Weaver	*MRS*	12,900	600		363,000	281,000	42,000	76,000	147,000	281,000	506,000
Birkenhead	*Ricker (Ei)*	34,500	6,800		366,000	310,000	100,000	160,000	282,000	492,000	879,000
Misc. non-Shuswap [k]	*R/S (Lillooet-Harrison)*	3,700	900		NA	NA	7,000	13,000	24,000	42,000	73,000
TOTAL SOCKEYE SALMON					-	-	**1,554,000**	**2,655,000**	**4,765,000**	**8,595,000**	**15,608,000**
(TOTAL excluding miscellaneous)					***(7,571,000)***	***(8,579,000)***	***(1,529,000)***	***(2,606,000)***	***(4,668,000)***	***(8,427,000)***	***(15,312,000)***

a. Probability that return will be at, or below, specified projection.
b. See Table 5 for model descriptions
c. Sockeye: 1953-2009 (depending on start of time series)
d. Sockeye: 1953-2009 (depending on start of time series)
e. Misc. Early Shuswap stocks use Scotch and Seymour R/EFS in forecast; Misc. Taseko uses Chilko R/EFS in forecast
f. Misc. Chilliwack & Nahatlach use Early Summer Run stocks R/EFS in forecast
g. Brood year smolts in columns C & D (not effective females)
h. Raft, Harrison, Miscellaneous North Thompson stocks moved in current forecast to Summer Run timing group due to changes in run timing of these stocks
i. Harrison are age-4 (column C) and age-3 (column D).
j. Misc. North Thompson stocks use Raft & Fennel R/EFS in forecast
k. Misc. Late Run stocks (Harrison Lake down stream migrants including Big Silver, Cogburn, etc.) use Birkenhead R/EFS in forecast

** Harrison forecasts are extremely uncertain due to age-proportion variations and brood year escapements (2009/2010) that are out of the historical data range

Definitions: BY: Brood year; BY09: brood year 2009; BY08: brood year 2008; EFS: effective female spawners; Prod. (8yr), Prod. (4yr): Productivity in age-4 recruits-per-effective female spawners in the last 8 yrs (1998-2005) or last 4 yrs (2001-2005); Ei (Entrance Island sea-surface-temperature); PDO (Pacific Decadal Oscillation), Pi (Pine Island sea-surface temperature).

2013 Escapement Strategy and Harvest Rate Calculations: The Fraser River Sockeye Spawning Initiative (FRSSI) was undertaken to develop escapement strategies for Fraser River sockeye.

The Lower and Upper Fishery Reference Points describe the shape of the Total Allowable Mortality (TAM) rule for each management aggregate. The Upper Fishery Reference Point describes the run size above which the TAM plateaus at the TAM cap of 60% and the escapement target is set at 40% of the run size. The Lower Fishery Reference point is 40% of the Upper Fishery Reference Point and describes the numerical escapement target when the run size is between the Upper and Lower Fishery Reference Points. In addition, when the run size is below the Lower Fishery Reference Point, the escapement target is the run size, but it is recognized that there will be some low incidental harvest in the form of low abundance exploitation rates (or LAER, previously called "ER floors") from fisheries directed on co-migrating stocks and species (see "incidental harvest" section, below).

As in recent years, the LAER for Early Stuart, Early Summer, and Summer Run timing groups is 10% and 20% for Late Run and Cultus Lake sockeye. If the return of Late-run sockeye is at or above the p75 forecast, consideration will be given to increasing the Late-run exploitation rate up to 30%.

The preliminary pre-season proportional management adjustments (pMAs) are estimates based on methods implemented in 2012. For Early Stuart the pre-season pMA is the median of the long term data set. For Early Summer sockeye the pre-season pMA is based on the median of the long term data series weighted against a fixed pMA for Chilliwack sockeye (2008-2012; excluding 2009) at the p50 forecast. For Summer Run sockeye the pre-season pMA is based on the median of the long term data series weighted against a fixed pMA for Harrison sockeye (2004-2012; excluding 2010) at the p50 forecast. The pMAs for Early Stuart, Early Summer and Summer Run sockeye will change in-season with updated information on environmental conditions and migration timing. The Late Run pMA in 2012 was comprised of two components: Birkenhead and the remaining Late Run stocks. The pre-season pMA for Late Run in 2013 has yet to be determined. The pMA of 1.0 shown in the escapement options tables is an intermediate number based on two methods but is still under review. The pre-season pMA values for all management groups will continue to be reviewed and updated by the Fraser Panel prior to the start of the 2013 fishing season.

Tables 7-12 shows the escapement plan for 2013 for all four management groups. The fishery reference points shown in this table are evaluated for the stocks that have a long term stock-recruit relationship. For the Early Summers, Summers, and Lates, the fishery reference points are scaled up annually to account for the expected contribution of the unforecasted, or "miscellaneous", stocks to the run timing group (see Table 7-11).

Tables 7-13 shows the expected outcomes (e.g., exploitation rates and expected numbers of spawners to the grounds) of the escapement plan for the range of the abundance forecast, fisheries reference points and pMAs shown in Tables 7-12. The "projected S after MA" is the number of spawners to the grounds that would occur, given a total adult return shown in the "forecast" row, an exploitation rate as shown in the line "allowable ER", and en-route loss as

represented by the pMA in the "pre-season pMA" section of Tables 7-12. The "projected S after MA" values can be compared directly to the number of spawners that returned in the brood year for four year olds shown in the line "BY spawners", as well as to the cycle average spawners in line "cycle avg S". The lines "Proj. S as % BY S" and "Proj. S as % cycle S" show the "projected S after MA" values as a percentage of the brood year escapement and the cycle average escapement, respectively. Note that these values do not take into account the pre-spawn mortality which can occur after spawners reach the grounds. We currently do not have any methods to forecast pre-spawn mortality rates.

Table 7-12. 2013 Lower & Upper Fishery Reference Points for Early Stuart, Early Summer, Summer and Late Run sockeye.

	Harvest Rule Parameters				
Management Unit	**Low Abundance ER**	**TAM Cap**	**Lower Fishery Reference Point**	**Upper Fishery Reference Point**	**Pre-season pMA**
Early Stuart	10%	60%	108,000	270,000	0.67
Early Summer (w/o misc)	10%	60%	100,000	250,000	0.51
Summer	10%	60%	1,250,000	3,125,000	0.10
Late (w/o misc)	20-30%	60%	300,000	750,000	0.67

Table Abbreviations
MA Management Adjustment
ER Exploitation Rate
TAM Total Allowable Mortality
pMA Proportional Management Adjustment
BY Brood Year
S Spawners

Table 7-13. Escapement Plan for the Fraser River Sockeye timing groups over a range of preseason forecasts.

Management		Pre-season Forecast Return				
Unit		p10	p25	**p50**	p75	p90
Early Stuart	forecast	92,000	137,000	**211,000**	331,000	507,000
	TAM Rule (%)	0%	21%	**49%**	60%	60%
	Escapement Target	92,000	108,000	**108,000**	132,400	202,800
	MA	61,600	72,400	**72,400**	88,700	135,900
	Esc. Target + MA	153,600	180,400	**180,400**	221,100	338,700
	LAER	10%	10%	**10%**	10%	10%
	ER at Return	0%	0%	**15%**	33%	33%
	Allowable ER	10%	10%	**15%**	33%	33%
	available for harvest	9,200	13,700	**30,600**	109,900	168,300
	2013 Performance					
	Projected S (after MA)	50,000	74,000	**108,000**	132,000	203,000
	BY Spawners	45,300	45,300	**45,300**	45,300	45,300
	Proj. S as % BY S	110%	163%	**238%**	291%	448%
	cycle avg S	210,300	210,300	**210,300**	210,300	210,300
	Proj. S as % cycle S	24%	35%	**51%**	63%	97%
Management		**Pre-season Forecast Return**				
Unit		p10	p25	**p50**	p75	p90
Early Summer	*lower ref. pt. (w misc)*	141,000	141,000	141,000	141,000	141,000
(w/o RNT)	*upper ref. pt. (w misc)*	351,000	351,000	351,000	351,000	351,000
	forecast (incl. misc)	73,000	130,000	253,000	468,000	844,000
	TAM Rule (%)	0%	0%	**44%**	60%	60%
	Escapement Target	73,000	130,000	**141,000**	187,200	337,600
	MA	37,200	66,300	**71,900**	95,500	172,200
	Esc. Target + MA	110,200	196,300	**212,900**	282,700	509,800
	LAER	10%	10%	**10%**	10%	10%
	ER at Return	0%	0%	**16%**	40%	40%
	Allowable ER	10%	10%	**16%**	40%	40%
	available for harvest	7,300	13,000	**40,100**	185,300	334,200
	2013 Performance					
	Projected S (after MA)	44,000	77,000	**141,000**	187,000	338,000
	BY Spawners	80,200	80,200	**80,200**	80,200	80,200
	Proj. S as % BY S	55%	96%	**176%**	233%	421%
	cycle avg S	91,000	91,000	**91,000**	91,000	91,000
	Proj. S as % cycle S	48%	85%	**155%**	205%	371%
Management		**Pre-season Forecast Return**				
Unit		p10	p25	**p50**	p75	p90
Summer	*lower ref. pt. (w misc)*	1,254,000	1,254,000	**1,254,000**	1,254,000	1,254,000
(w. RNT & Har)	*upper ref. pt. (w misc)*	3,136,000	3,136,000	**3,136,000**	3,136,000	3,136,000
	forecast	1,222,000	2,095,000	**3,718,000**	6,663,000	12,131,000
	TAM Rule (%)	0%	40%	**60%**	60%	60%
	Escapement Target	1,222,000	1,254,000	**1,487,200**	2,665,200	4,852,400
	MA	122,200	125,400	**148,700**	266,500	485,200
	Esc. Target + MA	1,344,200	1,379,400	**1,635,900**	2,931,700	5,337,600
	LAER	10%	10%	**10%**	10%	10%
	ER at Return	0%	34%	**56%**	56%	56%
	Allowable ER	10%	34%	**56%**	56%	56%
	available for harvest	122,200	715,600	**2,082,100**	3,731,300	6,793,400
	2013 Performance					
	Projected S (after MA)	1,000,000	1,254,000	**1,487,000**	2,665,000	4,852,000
	BY Spawners	796,200	796,200	796,200	796,200	796,200
	Proj. S as % BY S	126%	157%	**187%**	335%	609%
	cycle avg S	1,825,400	1,825,400	**1,825,400**	1,825,400	1,825,400
	Proj. S as % cycle S	55%	69%	**81%**	146%	266%
Management		**Pre-season Forecast Return**				
Unit		p10	p25	**p50**	p75	p90
Late	*lower ref. pt. (w misc)*	313,000	313,000	**313,000**	313,000	313,000
(w/o Har)	*upper ref. pt. (w misc)*	782,000	782,000	**782,000**	782,000	782,000
	forecast	167,000	293,000	**583,000**	1,133,000	2,126,000
	TAM Rule (%)	0%	0%	**46%**	60%	60%
	Escapement Target	167,000	293,000	**313,000**	453,200	850,400
	MA	111,900	196,300	**209,700**	303,600	569,800
	Esc. Target + MA	278,900	489,300	**522,700**	756,800	1,420,200
	LAER	20%	20%	**20%**	30%	30%
	ER at Return	0%	0%	**10%**	33%	33%
	Allowable ER	20%	20%	**20%**	33%	33%
	available for harvest	33,400	58,600	**116,600**	376,200	705,800
	2013 Performance					
	Projected S (after MA)	80,000	140,000	**279,000**	453,000	850,000
	BY Spawners	134,000	134,000	134,000	134,000	134,000
	Proj. S as % BY S	60%	104%	**208%**	338%	634%
	cycle avg S	104,200	104,200	**104,200**	104,200	104,200
	Proj. S as % cycle S	77%	134%	**268%**	435%	816%
Available for Harvest (TF, US, CDN)		172,100	800,900	**2,269,400**	4,402,700	8,001,700
Total projected spawners		1,174,000	1,545,000	**2,015,000**	3,437,000	6,243,000

Fraser Sockeye Run Timing Groups: The four stock aggregates identified under the Pacific Salmon Treaty Annex generally contain stocks with similar timing in the marine area. A preliminary analysis of the Raft River, North Thompson, and Harrison stocks run timing supports the decision made in 2012 (pre-season) to include these stocks in the Summer Run management group (based on similar run timings). The 2013 Fraser sockeye escapement plans will reflect this continued re-alignment of stocks. The harvest rules have been adjusted to account for this change.

Incidental Harvest: In cases when the total allowable mortality minus any management adjustment results in a zero or very low total allowable mortality for a timing aggregate, the Department may consider measures to protect 70-90% of the return of that timing aggregate while allowing for the harvest of co-migrating stocks and or species. Test fishing impacts are included as part of this incidental harvest calculation on the aggregate. The intention of this provision is to allow for limited fisheries directed on co-migrating stocks or species. This provision is not intended to create directed harvest opportunities on the run timing groups with zero or very low total allowable mortality. These provisions will also take into account any harvest (directed or incidental) that may have occurred previously on the timing aggregate. In the escapement plan table, this concept is expressed as the low abundance exploitation rate (LAER).

Run Timing: Fishing plan options are evaluated for a range of possible run sizes and return timing. In-season run-size and timing estimates form the basis for management once these estimates are available. Table 7-1 below outlines long term median Fraser sockeye and pink migration timing.

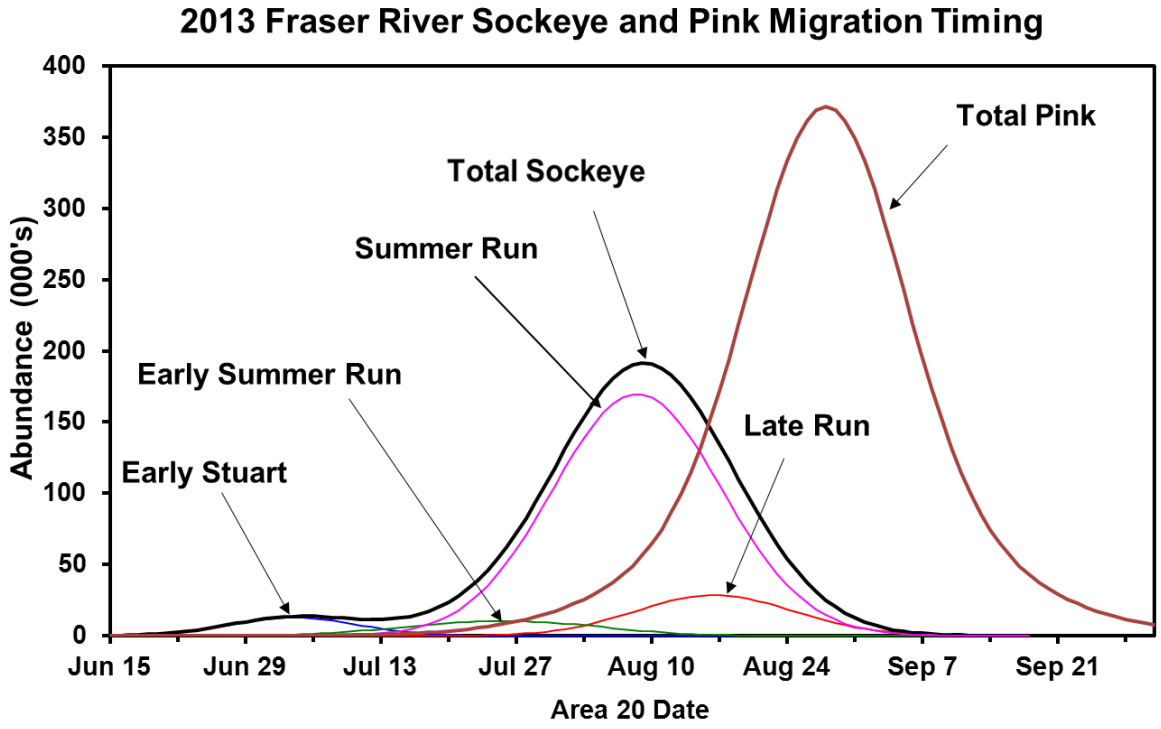


Table 7-1: Run Timing Curves for 2013 Fraser River Pink and Sockeye

Management Adjustments: Management adjustments are added to the escapement goal when necessary to account for discrepancies between Mission hydro-acoustic measurements plus catch upstream of the hydroacoustics site and spawning escapement estimates in the form of en-route mortalities (i.e. more fish are needed to pass by Mission than spawning ground requirements in order to account for measurement errors and en-route losses). Setting appropriate management adjustments is a component of pre-season and in-season decision-making by the Fraser River Panel. Management adjustment models consider observed biases, as well as, potential relationships with in-river discharge, water temperature and timing of river entry to assist in this determination. Regardless of the causes, management adjustments to all management groups may be made in-season to increase the probability that spawning targets will be met. For further information: see http://www-sci.pac.dfo-mpo.gc.ca/fwh/

7.5.3.2 In-season Decisions

Run Size Estimation and TAC calculations: In-season run size estimates based on information from test fishing operations, catches during fishery openings and hydro-acoustic estimates of abundance at the Pacific Salmon Commission hydro-acoustic facility at Mission, B.C. will be provided by the Pacific Salmon Commission staff to the Fraser River Panel for consideration.

The Fraser River Panel will meet regularly from early July to late September to review information as it becomes available over the course of the sockeye migration. Run size estimates will be regularly updated through the Fraser River Panel process. In-season run size estimates are then used to set spawning escapement objectives, management adjustments, and gross escapement objectives, calculate available TAC and determine opportunities for fishery openings. The availability of the TAC to harvesters will also be affected by the ability of harvesters to access this TAC and other factors, including in-river migration conditions and conservation requirements for other co-migrating stocks or species.

Information on in-season run size estimates and management actions, such as openings and closures, as well as other important information for commercial, recreational and First Nations fisheries are posted on the Internet regularly throughout the fishing season by the Department and the PSC at the following web sites:

Weekly PSC News Release: http://www.psc.org/news_frpnews.htm

Aboriginal: http://www-ops2.pac.dfo-mpo.gc.ca/xnet/content/fns/index.cfm?pg=search_options&lang=en&id=aboriginal
Commercial: http://www-ops2.pac.dfo-mpo.gc.ca/xnet/content/fns/index.cfm?pg=search_options&lang=en&id=commercial
Recreational: http://www-ops2.pac.dfo-mpo.gc.ca/xnet/content/fns/index.cfm?pg=search_options&lang=en&id=recreational

7.5.4 Issues

7.5.4.1 Early Stuart Management

The 2009 brood year represents the dominant cycle for Early Stuart sockeye however, the Early Stuart forecast is below average for 2013. The 2009 brood year escapement of 21,900 effective female spawners (EFS) was the second lowest observed on this cycle, although the spawning success (95%) for Early Stuart populations was slightly higher than the long-term average (89%).

The implications of the escapement strategy for fishing plans will be strongly influenced by in-season run size estimates and management adjustments to account for environmental conditions during the return migration.

In recent years, window closures and other fishing restrictions have been required in commercial, recreational and First Nations fisheries to achieve the low exploitation rates indicated by the escapement plan. If in-season abundance and/or management adjustments indicate that there is no allowable harvest amount for Early Stuart, a rolling three week window closure based on run timing of the Early Stuart sockeye migration through various fisheries may be implemented.

The implementation of the window closure as well as the dates outlined in the Table below will be subject to change based on in-season information.

Table 7-17: Proposed Early Stuart Window Closure Dates

2013 Management Action Dates for Early Stuart Conservation Measures					
Early Stuart Run Size=	**211,000**			Printed on:	22-Apr-13
A20 Peak=	**4-Jul**				
	"Ideal" dates		Actual Dates		Management Action
Area	90%	of run	Start (date, time)	End (date, time)	
Area 127	18-Jun	5-Jul	open July 15, 7 d/week		Earliest potential opening to fishing for Fraser sockeye = July 15 (SN, GN, TR)
Area 11	19-Jun	9-Jul	open July 15, 7 d/week		
Area 12	20-Jun	12-Jul	open July 15, 7 d/week		
Area 13	22-Jun	14-Jul	open July 15, 7 d/week		
Area 19 and 20	23-Jun	15-Jul	open July 15, 7 d/week		
Area 18 and 29-1 to 10 (except 29-8)	27-Jun	19-Jul	24-Jun	Jul 19 - noon	Earliest potential opening to fishing for Fraser sockeye is July 19 (Sn, Gn, Tr).
Steveston-Port Mann Br (29-11 to 29-17)	28-Jun	20-Jul	24-Jun	Jul 19 - noon	Potential for Chinook-directed fisheries (FNs FSC). Earliest potential opening for Fraser sockeye (GN) is July 19.
Port Mann Br to Sawmill Cr	29-Jun	22-Jul	24-Jun	Jul 19 - 6pm	Potential for Chinook-directed fisheries (FNs FSC). Earliest potential opening for Fraser sockeye (GN) is July 19.
Sawmill Cr-Texas Cr	1-Jul	24-Jul	1-Jul	26-Jul	FNs FSC: Open to selective fishing for Chinook (dip net, rod and reel and potential 8 inch mesh GN).
Texas Cr-Kelly Cr	3-Jul	25-Jul			
Kelly Cr-Deadman	4-Jul	26-Jul			
Deadman to Chilcotin	5-Jul	28-Jul	8-Jul	31-Jul	FNs FSC: Open to selective fishing for Chinook (dip net) and open in tribs for sox and chinook.
Chilcotin-Quesnel	8-Jul	31-Jul	8-Jul	31-Jul	
Quesnel-Hixon	9-Jul	1-Aug	8-Jul	31-Jul	
Hixon-Prince George	11-Jul	2-Aug	12-Jul	4-Aug	FNs FSC: Open to selective fishing for Chinook (dip net) and open in tribs for sox and chinook.
Prince George-Stuart R	12-Jul	4-Aug	12-Jul	4-Aug	FNs FSC: Some allowable harvest in terminal area.

7.5.4.2 Early Summer Management

Return expectations relative to average for stocks within this management group are variable. Based on the pre-season forecast (p50) and preliminary pre-season pMA directed harvest opportunities will likely be limited. Potential harvest opportunities for this management group

will be determined when more information is available. A proposal from Lower Fraser First Nations to access Chilliwack River sockeye for FSC purposes is being reviewed.

In some years when there has been concern regarding the return strength of the early timed component of the Early Summer run, a one week extension to the Early Stuart closure window has been implemented to protect these stocks. Depending on in-season information, this approach or other actions may be considered to support meeting management objectives for this stock group.

7.5.4.3 Summer Run Management

The Summer Run sockeye make up a majority (78%) of the 2013 run size forecast. Most of the harvest opportunities are expected to be focused on Summer Run stocks in 2013. It is expected that while fisheries will be directed on the Summer Run timing group, harvest may be limited by constraints on co-migrating stocks of concern.

7.5.4.4 Late Run and Cultus Lake Sockeye Management

Late Run sockeye

Although the total return of Late Run (excluding Harrison) in 2009 was the third smallest return on this cycle since the 1950s, the total escapement for the Late Run (excluding Harrison) in the 2009 brood year was the third largest on this cycle. The Late Run sockeye make up a small proportion of the 2013 run size forecast (approximately 12% of the total return at the midpoint of the forecast).

Historically, the ocean migration timing of Late Run Sockeye was similar to Summer Run sockeye but Late Run sockeye delayed entering the Fraser River by 4-6 weeks. Since the mid-1990s, Late Run sockeye have entered the Fraser River much earlier, and they have experienced very high levels of en-route and/or pre-spawn mortality. In 2009-2011, the Late Run delay off the river mouth had increased to approximately two weeks. However, in 2012, there was little to no delay. While a range of studies have been, and continue to be, undertaken to understand the cause and impact of this phenomenon, no causal factors have been identified. Planning for 2013 will need to take into account assumptions of delay for 2013.

Cultus Lake sockeye

Management of Cultus Lake sockeye will be based on the Cultus Lake sockeye management objective and an assessment of in-season information for the Late Run sockeye stock aggregate. For more information, refer to section 5.1.6.

Due to the low numbers of Cultus Lake sockeye compared to the co-migrating stocks, the abundance and exploitation rate for Cultus Lake sockeye cannot be calculated directly in-season. For management purposes, the Cultus exploitation rate will be assumed to be the same as the exploitation rate for similarly timed Late Run stocks caught seaward of the confluence of the Fraser and the Vedder Rivers. Exploitation rates are based on DNA analysis of sockeye sampled either directly from fisheries or indirectly, from nearby test fisheries.

7.5.5 Prospects

Most fisheries in 2013 will likely be directed on Summer Run sockeye. The extent and magnitude of these fisheries will be based on in-season assessment information. The ability of harvesters to access Summer Run sockeye TAC is likely to be constrained by management of Early Summer and Late Run stocks and will be balanced by the desire to harvest Fraser pinks whose timing can overlap with Late Run sockeye.

7.6 Barkley Sound Sockeye Decision Guidelines

7.6.1 Background

- The Barkley Sound stock group is composed of sockeye returning to the Somass River (Sproat and Great Central Lake) and Henderson Lake.
- Return timing is from May to October; the main fishing period typically occurs from mid-June to early August.
- Harvest occurs by First Nations and the recreational and commercial sectors (Area D gill net, Area B seine). Representatives from each of these groups form the Area 23 Harvest Committee.
- The fishery is terminal, with no directed fisheries outside Area 23 (Alberni Inlet/Barkley Sound).
- With the exception of Maa-nulth Treaty fisheries, Henderson sockeye are not directly targeted, although there is some interception of these fish by other sectors.
- The Area 23 Harvest Committee assists in the development of management plans and in-season management of the various fisheries. The Area 23 Sockeye Fishery Management Plan details the management framework for these fisheries.
- The Somass harvest strategy was revised in 2012 by the Area 23 Harvest Committee. Revisions were made to implement reference points consistent with the Wild Salmon Policy, to incorporate Maa-nulth Treaty and Tsu-mass Economic Opportunity Fishery allocations, and to meet broader fishery objectives by revising access arrangements.
- The Area 23 Harvest Committee formed a smaller focus group to develop the Somass sockeye and chinook local Integrated Fishery Management Plan. The intent of the Plan is to describe in detail each of the fisheries, a new management table with new harvest rates and principles/guidelines for each of the fisheries.

7.6.2 Constraints/Objectives

- Achieve the escapement target (and corresponding harvest rate) associated with the forecast run size;
- Limit impacts on non-target stocks and species and stocks of concern;
- Meet allocation priorities;
- Distribute the TAC over the duration of the fishing season to maintain the biological diversity of the population (e.g. maintain a diverse contribution of various age and run timing classes);
- Reduce gear conflict among harvest sectors;
- Maximize the value of harvest;
- Provide for stability and predictability of harvest opportunities;
- Provide assessment information (e.g. catch-per-unit-effort (CPUE) abundance indices, stock and age composition sampling);

- Allow sufficient flexibility to respond with changes in fish behaviour / migration caused by environmental conditions through the Area 23 Harvest Committee in-season decision-making process.
- The department is refining the share based fishery approach.

7.6.3 Decision Guidelines

- Fishery reference points used to manage the fishery, including exploitation rate, escapement targets and total allowable catch, are shown in Table 7-21.
- In addition, the fishery was delineated into three periods. For early-season fisheries (May/June), a standardized fishing regime has been developed for each sector. The standardized fishing regimes are designed to standardize effort (or daily limits, fishing areas and/or opening date in the case of the recreational fishery) to levels that will result in the appropriate harvest rate for management zone determined by the pre-season forecast and maximize the information for in-season reforecasting.
- For mid-season fisheries (July), weekly harvest plans are developed based on the run size estimation and remaining TAC for each sector (i.e. a weekly harvest rate/TAC is determined and allocated).
- Late-season fisheries (August) may operate as "clean-up" fisheries. In this period, harvesters agree that fisheries should be managed to ensure available TAC is caught.
- The Somass TAC may be adjusted downwards in the event one population is significantly less abundant than the other or if environmental conditions indicate the potential for significant pre-spawn mortality.

Table 7-21: Management zones and fishery reference points for Somass sockeye (Great Central and Sproat Lake populations).

MANAGEMENT ZONE	RUN SIZE	REFERENCE POINT	ESCAPEMENT TARGET RANGE	EXPLOITATION RATE RANGE	TOTAL ALLOWABLE CATCH
1 - Critical	**Less than 170,000**		170,000	0	0
2 - Very Low	**200,000 to 350,000**	low end	170,000	15%	30,000
		high end	262,500	25%	82,501
3 - Low	**350,000 to 500,000**	low end	262,500	25%	82,501
		high end	325,000	35%	170,001
4 - Moderate	**500,000 to 700,000**	low end	325,000	35%	170,001
		high end	350,000	50%	340,000
5 - High	**700,000 to 1,000,000**	low end	350,000	50%	340,000
		high end	400,000	60%	590,000
6 - Abundant	**1,000,000 to 1,800,000**	low end	400,000	60%	590,000
		high end	540,000	70%	1,245,000

7.6.4 In-season Decisions

- The Area 23 Harvest Committee meets weekly beginning mid June every Thursday to develop weekly fishing plans based on available stock assessment information and revised run-size estimates.
- The DFO-First Nation Joint Management Enforcement Committee (JMEC) meets weekly beginning mid June to review First Nation harvest plans, enforcement issues, and any protocol arrangements for shared harvest among First Nations.
- The Maa-nulth-DFO Joint Fisheries Technical Committee meets the third Monday of each month to review Maa-nulth fishery issues.

7.6.5 Issues

- Further catch sampling is required to more accurately estimate stock composition. Sampling is complicated by lack of dockside validation for some fisheries (e.g. commercial gill net).
- Providing stable funding for stewardship activities, such as maintaining existing lake fertilization programs. One solution proposed in 2012 was the donation of fish from the commercial sector to fund local programs. The harvest committee in agreement with the commercial sector has designated 10,000 sockeye to be caught jointly by the commercial sectors with the proceeds going toward local stewardship and enhancement initiatives.
- In-season harvest planning is complicated by environmental conditions that impact migration timing and behavior of the fish.

- Ensuring the Somass River water use plan (e.g. dam management, mitigation activities) meets the needs of fish/fisheries.
- The involvement of the Area B seine fleet in the Alberni Inlet sockeye fishery is dependent on the Area B Seine Harvest Committee developing and implementing a fishing plan that limits the harvests of sockeye to weekly target allocations. In cooperation with DFO Resource Management staff the Area B Harvest Committee actively manages the weekly fishing plan. Without the effort controls provided by this management program there would be no opportunity for Area B seines to participate in this fishery. As a result, Area B vessels must be designated by their representative body, the Area B Harvest Committee, to participate in this fishery. If undesignated seine vessels attend or attempt to participate in this fishery, the department will not open the fishery.

7.6.6 Prospects

For 2013, the preseason forecast range for Somass sockeye is 350,000 to 500,000 with a management forecast of 350,000 resulting in a preliminary TAC of 82,500. This TAC may be revised on June 27th and weekly thereafter (until about August 8) depending on in-season assessment results.

For 2013, the preseason forecast for Henderson sockeye is 15,000 and is considered low.

Note with the exception of Maa-nulth Treaty fisheries, Henderson sockeye are not the target stock of Area 23 sockeye fisheries. However, the status and TAC of Henderson sockeye determines the allowable interception rate of Area 23 sockeye fisheries and the corresponding level of time-area restrictions required to manage interceptions.

7.7 Okanagan Sockeye Decision Guidelines

7.7.1 Background

Okanagan sockeye is the last remaining viable sockeye salmon population returning to Canada within the Columbia River Watershed. Run timing into the Okanagan system is primarily affected by water temperature within the Okanagan River where they tend to hold in the Columbia River until migration conditions are favourable. Peak spawning usually occurs from mid to late October. Of all Okanagan River sockeye enumerated at Wells Dam on the Columbia River, on average roughly 60% of those adults are enumerated on the spawning grounds.

7.7.2 Decision Guidelines

The current science based spawning objective is 35,500 fish as enumerated on an indexed section of the spawning ground which is equivalent to approximately 61,200 fish as enumerated through Wells Dam on the Columbia River in Washington State.

The following decision rules are used to manage Okanagan sockeye in Canada:

- If projected escapement past Wells Dam on the Columbia River is less than 10,000 sockeye, limited fishing for FSC purposes is permitted by Okanagan Nation.
- If projected escapement past Wells Dam is between 10,000 and 60,000 fish, an Okanagan Nation FSC catch of 5% of the run that has migrated past Wells Dam is permitted.
- If projected escapement past Wells Dam exceeds 60,000 fish, an Okanagan Nation FSC minimum catch of 10% of the run that has migrated past Wells Dam is permitted.
- Should the projected escapement past Wells Dam exceed 80,000 fish, additional opportunities may be considered.

7.7.3 Prospects

The preliminary forecast return for Okanagan River sockeye in 2013 is estimated at 135,000 fish with approximately 95% of the return comprised of 4 year old fish. Returns are expected to exceed the long term average return for Okanagan sockeye as well as the 2013 cycle year average. Spawning escapement in 2009 was 64,141 (AUC count) and the average spawning escapement on the 2013 cycle is 23,090 (AUC count). However, following the spring 2010 Testalinden Creek slide in to Okanangan River smolt production in Spring 2011 was less than 30% of expected (i.e. 1 M smolts observed versus 3.5 M expected). Returns should be sufficient to achieve the Canadian escapement objective at of 60,000 at Wells Dam. However, a high degree of uncertainty exists with respect to marine survival conditions as well as in-river migration conditions. A formal forecast will be produced later in the year in collaboration with the Columbia River Intertribal Fish Commission in Washington State.

7.8 Johnstone Strait Chum Decision Guidelines

7.8.1 Background

The Johnstone Strait chum fishery targets fall run chum stocks that migrate through Johnstone Strait. Most of these fish spawn in Johnstone Strait, Strait of Georgia, and Fraser River areas, though a small component is bound for Washington State systems. The main components of the

harvest are the Mid-Vancouver Island (MVI) and Fraser River stock groupings. The migration timing of these fall chum stocks in the Johnstone Strait fishing area range from September to November with the peak typically early to mid-October. Mixed-stock fisheries occur in Areas 12 and 13 with terminal opportunities where surpluses are identified. Harvesters include First Nations (FSC fisheries), recreational, and commercial (seine, gill net and troll).

The exploitation rate is set at 20% across all harvesters, unless abundance is below a critical threshold of 1 million chum established for conservation purposes. Of the overall 20% exploitation rate, a 16% exploitation rate is allocated to the commercial sector, and the remaining 4% is set aside to satisfy FSC and recreational harvest requirements and to provide a buffer to the commercial exploitation. A chum working group meeting will be scheduled in late-May or early-June to begin planning for the 2013 fishery.

Since 2008, an Area H troll full-fleet share-based demonstration troll fishery has been in place involving transferable boat days. The initial allocation of boat days was based on Area H's share of the allowable troll exploitation rate. The fishery was divided into two fishing periods with a short break in between. Boat days allocated to a given period could be used during any open time within that fishing period. Boat days were transferable (between harvesters) within each fishing period, but not between fishing periods. With the exception of 2012 when no transfer of days was permitted, a maximum of one third of the total number of boat days held could be carried over from fishing period one to fishing period two, provided that the day(s) was not fished.

7.8.2 Constraints

- For Inside Southern chum salmon a critical threshold, where little or no harvesting occurs, is defined as 1.0 million in Chapter 6 of the PST.
- No commercial opportunities will occur prior to late September due to coho conservation requirements.
- First Nations harvest opportunities are provided to meet FSC requirements.
- Recreational fishing opportunities are provided at normal daily limits of four chum per day.

7.8.3 Decision Guidelines

When run size is expected to be below the critical threshold of 1.0 million fish commercial fisheries will be suspended and there will be only assessment fisheries and non-commercial fisheries.

For run sizes above the 1 million chum critical threshold, fisheries will be conducted using a fixed 20% harvest rate approach in Johnstone Strait.

The fixed harvest rate fishing schedule is implemented based upon effort, time and area. Fishing schedules are initially developed based on the assumption of ‘normal fleet participation’ (i.e. recent year’s maximum fleet participation in the chum fishery or trend in effort).

Fishing schedules and exact fishing dates will be confirmed pre-season following consultation with industry and other stakeholders.

The following fishing plan has been developed in recent years:

Seines - First Fishery

- First fishery will provide for a one day, 12 hour fishery, at the end of September or first week of October. No opportunities for extended fishing time for the first fishery.

Seines - Second Fishery

- Second fishery will provide for a one day, 10 hour fishery, in the third week of October. Note that the reduction in time to 10 hours is due to reduced daylight hours.
- If effort during the first and/or second fishery is considerably less than anticipated or severe weather hampers the fishery then additional fishing time will be considered.
- An option for an ITQ demonstration fishery in 2013 is under discussion with the Area B Harvest Committee and the final fishing plan will be confirmed prior to the start of the fishery. Please refer to Appendix 7, Section 7.18 for further details.

Gill net

- Gill net fisheries are scheduled to commence at the end of September or first week of October.
- Fishing times are scheduled separate from the seine fishery when and where possible.
- Duration of the fishing period is generally 41 hours and will be confirmed in-season based on effort.
- Fishing opportunities on the weekend are generally not planned in order to minimize any potential gear conflicts with the recreational fishery in lower Area 13 and also to minimize any processing issues on weekends.

Troll

- Fisheries are scheduled to commence at the end of September or the first week of October.
- Fishing opportunities on the weekend and Statutory Holidays in lower Area 13 are generally not planned in order to minimize any potential gear conflicts with the recreational fishery.
- In 2013, Area H is again planning a full fleet share-based demonstration troll fishery of transferable effort (boat days). The fishery will be divided into two fishing periods with a short break in between. Boat days allocated to a given period can be used during any open time within that fishing period. Boat days are transferable (between harvesters) within each fishing period, but not between fishing periods.

Refer to Appendix 7, Section 7.17.3 for further details.

7.8.4 In-season Decisions

Licence area advisors are consulted on harvesting opportunities through in-season licence area advisory bodies. These consultations are done regularly through weekly conference calls starting late September.

The following considerations will guide fisheries management decisions in-season:

- Amount of effort in each fishery and fishing time period; and
- Weather conditions during the fishery.

7.8.5 Issues

- There have been requests by the seine fleet to review the effort-based management approach and develop a revised approach that is better suited to implement share-based (e.g. ITQ) fisheries. Discussions are continuing regarding potential demonstration fishery options for 2013.
- A plan to minimize gear conflicts between the commercial and recreational sectors was implemented starting in 2007. Subarea 13-7 (Deepwater Bay) was closed during weekends and Thanksgiving Monday to the commercial sector. During weekdays, Subareas 13-6 and 13-7 were open to commercial gear. This plan is expected to continue in 2013.

7.8.6 Prospects

Expectations for 2013 are low, to near target. This is based on the below average parental brood abundance of the 2009 return, the indications of stable to slightly reduced marine survival (pink and coho returns in 2011) in 2010 and the contributing outmigration year of 2009 brood and the high variability in Chum returns. Summer Chum stocks in 2009 were mainly below average throughout the area and will likely stay the same in 2013. Overall, there is high variability in chum returns, and ocean survival rates will be a key factor in the strength of 2013 returns.

7.9 Fraser River Chum Decision Guidelines

7.9.1 Background

The Fraser River chum fishery harvests chum returning to spawn exclusively within the Fraser River. The fishery is managed for a single Fraser River Chum Management Unit, but is comprised of two WSP Conservation Units: Lower Fraser chum and Fraser Canyon chum. The vast majority of chum returning to the Fraser River are part of the Lower Fraser chum CU, and spawn in the Fraser Valley downstream of Hope, B.C. Major spawning aggregations occur within the Harrison River (including Weaver Creek and Chehalis River), the Stave River and the Chilliwack River. No spawning locations have been identified upstream of Hells Gate. Chum salmon return to the Fraser River from September through December, with the typical peak of migration through the lower river occurring from mid to late October.

The escapement objective for Fraser River chum is 800,000 spawners. This objective is based on an estimate of the number of spawners required to maximize recruits per spawner (Smsy). Decisions regarding fishing opportunities are based on in-season information provided by the Albion test fishery. Harvesters in the Fraser River chum fishery include First Nations (FSC and Economic Opportunity), commercial (Area E and Area B) and recreational.

7.9.2 Constraints

- For Fraser River terminal area run sizes, identified in-season, at abundance levels lower than 900,000 chum salmon, the Canadian commercial chum salmon fisheries within the Fraser River and in associated marine areas (Area 29), will be suspended as per Chapter 6 of the PST.

- Chum fisheries within the Fraser River will be managed to minimize by-catch of co-migrating stocks of concern (e.g. Lower Fraser coho, Interior Fraser River coho and Interior Fraser River steelhead).
- Measures to reduce impacts on Interior Fraser River coho include gear and area restrictions from early September to mid-late October in the Fraser River main stem below Mission (i.e. during the Interior Fraser River coho window closure).
- Management actions to conserve Interior Fraser River steelhead are designed to protect 80% of the run with 90% certainty (known as the "80/90 rule"). Currently, this objective is implemented by delaying opportunities for commercial gill net fisheries within the Fraser until after October 25th.

7.9.3 Decision Guidelines

Management of Fraser River chum fisheries is based upon in-season information. Albion test fishing data will be used to identify the abundance of chum salmon returning to the Fraser River. The first in-season run strength assessment will be announced in mid-October once the peak of the return has been identified.

The FSC allocation for Fraser chum is 72,000. First Nations will be provided FSC fishing opportunities as the Interior Fraser River coho window closure ends in each area, from early to mid-October. At run sizes deemed to be a conservation concern, FSC fishing opportunities may be reduced. For 2013 planning purposes, returns less than 500,000 will be considered to be a conservation concern. This value may be revised based on subsequent analyses.

Commercial fishing opportunities (including First Nations Economic Opportunities) are contingent upon the identification of a commercial TAC:

- At run sizes less than 916,000, no commercial TAC is available
- At run sizes from 916,000 to 1,050,000, the commercial TAC is a maximum of 10% of the run size. A minimum commercial TAC of 35,000 chum has been identified as a requirement to support a one day Area E fishery.
- At run sizes greater than 1,050,000, the commercial TAC is a maximum of 15% of the run size.

Recreational fishing opportunities are also dependent on the estimated Fraser River chum run size:

- At run sizes below 800,000 the recreational fishery on the main stem Fraser will be closed and openings on tributaries would be limited to those where a surplus is likely to occur. Surpluses may be identified on hatchery enhanced systems.
- At run sizes from 800,000 to 916,000 the recreational fishery will remain open on the main stem Fraser. Openings on tributaries would be limited to those where a surplus was likely to occur.
- At run sizes greater than 916,000, the recreational fishery will remain open in the Fraser River main stem and tributaries.

Table 7-15 below provides a summary of key decisions for the management of the Fraser River chum fishery.

Table 7-12: Key decision points for Fraser River chum

Run Size	Harvest Plan	First Nations	Commercial	Recreational
<500,000 in Fraser	<10%	Limited (reduced hours and days/week fishing)	Closed	Main stem Fraser River closed, restricted openings on tributaries
500,000 to 800,000 in Fraser	Directed fisheries limited to FSC	Normal (72,000)	Closed	Main stem Fraser River closed, restricted openings on tributaries
800,000 to 916,000 in Fraser	Catch not to exceed 81,000 (72,000 First Nations and 9,000 test fishing)	Normal (72,000)	Closed	Main stem Fraser River open, restricted openings on tributaries
916,000 to 1,050,000 in Fraser	Commercial catch not to exceed 10% for chum.	Normal (72,000)	Open (35,000-105,000)	Open
>1,050,000 in Fraser	Commercial catch not to exceed 15% for chum.	Normal (72,000)	Open	Open

7.9.4 Issues

- Economic opportunity or demonstrations fisheries for chum salmon for lower Fraser River First Nations will depend upon negotiated Fisheries Agreements. These fisheries will be given the same priority as Area E commercial fisheries. However, provided a commercial TAC is identified, a commercial fishery which uses selective fishing gear may access chum prior to the date identified by the Interior Fraser River steelhead 80/90 rule. This provision includes First Nations Economic Opportunity beach seine fisheries.
- All gears are required to use fishing methods to avoid/reduce steelhead encounters and minimize steelhead mortality. For Area E chum fisheries, this includes using shorter nets and reducing soak times - practices which have been in place since 2002. The use of revival tanks is also mandatory for the Area E fishery.
- The current approach for managing fisheries which impact Interior Fraser River steelhead has been developed jointly by DFO and the Province of British Columbia. Any future modifications to this approach will be also developed in conjunction with the Province.
- Implementation of the Wild Salmon Policy will require the development of lower and upper escapement "benchmarks" and associated biological status zones for Fraser River chum. As these benchmarks are identified, corresponding decision breakpoints and management actions will also be developed for each status level. These analyses have not yet been initiated on benchmark identification for Fraser River chum.

7.9.5 Prospects

Formal quantitative forecasts are not prepared for Fraser River chum, but the qualitative Stock Outlook for 2013 is "near target". Estimated escapements in 2011 were approximately 1 million chum, which marked a substantial increase from the two previous years. Escapement estimates are not yet available for 2012, but in-season estimates of returns to the Fraser River exceeded 2

million fish. If this recent trend persists, directed fisheries are likely for the 2013 season, subject to in-season assessments. Interior Fraser River steelhead and Interior Fraser River coho prospects continue to be poor and Fraser River chum fishing plans implemented in 2013 will continue to include provisions to minimize impacts on these co-migrating stocks of concern.

7.10 Area 14 Chum Decision Guidelines

7.10.1 Background

This fishery is directed at the enhanced stocks of three systems: Puntledge, Qualicum and Little Qualicum Rivers. The Qualicum River is often referred to as the 'big' Qualicum River, to better distinguish it from the Little Qualicum River. Chum returning to this area have been enhanced since the late 1960s and terminal fisheries have occurred in October and November since the 1970s. A pre-season forecast of chum returning to Area 14 chum is based on brood escapement, average survival and age composition. In-season run strength is assessed from any early catches, visual observations at river estuaries and by escapement counts to the three river systems. The escapement goals for the three river systems are 60,000 for Puntledge River, 130,000 for Little Qualicum River and 100,000 for Qualicum River, adding up to an overall escapement goal of 290,000 chum not including enhancement facility requirements of about 10,000 chum bringing the total escapement goal to 300,000.

Area 14 chum are managed as a component of "mixed-stock harvest strategy" for chum and fishing opportunities are guided by coast-wide allocations of chum salmon. The south coast chum allocation for Area 14 to 19, 28 and 29 is outlined in Appendix 7. The Johnstone Strait chum allocation arrangement differs from the overall allocation structure for these areas. Fishing opportunities in Area 14 will be based on catch levels in relation to the overall south coast allocation of chum.

Management is guided by advice from the South Coast Chum Advisory Committee which has been in operation since 2004. This committee represents interests for mid-Vancouver Island, Johnstone Strait and WCVI fisheries.

First Nations FSC fisheries are conducted in Area 14 and at the hatcheries prior to consideration of ESSR fisheries. Tidal recreational fisheries are subject to the normal daily and possession limits (daily limit four per day/possession eight) and are open throughout the area. Once escapements have been confirmed, non-tidal recreational fisheries for chum, chinook and coho in the Puntledge and Big Qualicum Rivers will be considered. These fishing opportunities may occur as early as the second to fourth week of October based upon in-season and past return timing of chum, chinook and coho.

The management objectives for Area 14 are:

- Achieve Area 14 chum escapement requirements of 300,000.
- Ensure adequate chinook and coho escapements to Area 14 streams.
- Ensure adequate chinook and coho for enhancement purposes.
- Provide access to First Nations for FSC purposes.
- Maximize economic return.
- Work towards south coast chum allocation targets for gill net, seine and troll.

- Minimize the harvest of passing stocks.
- Attempt to manage initial fisheries in Area 14 to avoid large surpluses (i.e. greater than 100,000).

7.10.2 Constraints

Beach boundaries are in effect to protect coho and chinook. Boundaries may range from half a mile to one and a half miles depending upon by-catch concerns and time of year. French Creek radius boundary and Baynes Sound closures are in effect to protect wild chum and coho stocks. Coho conservation measures are in effect until November 10, including non-retention, maximum soak times for gill nets, and barbless hooks for trollers and mandatory brailing for seines. The gill net fishery may be restricted to daylight hours only if there are significant levels of non-target species catch (e.g. coho).

7.10.3 Decision Guidelines

Area 14 commercial chum fisheries are managed based on forecasted abundance. In-season, the management strategy falls under one of two categories as described below:

Situation 1: Area 14 Pre-Season Forecast greater than 400,000 chums.

Considerations for limited early chum in Area 14:

1. Early chum openings would target up to 65% of the surplus above 400,000. The 400,000 chum ceiling is a combination of the Area 14 target escapement (300,000 chums) plus a 100,000 chum buffer. The buffer is included to safeguards against uncertainties in the forecasted stock abundance.
2. For example, if the preseason chum forecast for Area 14 was 500,000 the allowable early harvest would equal 65% of the forecasted preseason abundance minus the target escapement plus the buffer (i.e. 65% of [500,000 – (300,000+100,000)] = 65,000).
3. In this example up to 65,000 chums could be harvested prior to escapement occurring. Escapement information becomes increasingly important when considering further opportunities. Further fishing opportunities would be based on harvesting the 100,000 buffer and the remaining 35% of the surplus provided that escapement targets have been achieved.

Situation 2: Area 14 Pre-Season Forecast less than 400,000 Chums.

Considerations for fishery opening:

The chum escapement target for the Big Qualicum River has been achieved only 6 times in the period 1990-2010. The Little Qualicum River has achieved its escapement target only 8 times during the same period. Below average escapements combined with uncertainties in chum forecasting necessitate a precautionary approach to initiating fishery openings when pre-season forecast is below 400,000 chums. To address these concerns the following approach will be adopted when forecasted returns are below 400,000.

1. Prior to opening commercial fisheries in Area 14 specific escapement levels for the major chum systems must be achieved.

2. In river escapement threshold required to initiate commercial fisheries;
    a. Puntledge River requires 70% of escapement target in river.
    b. Big Qualicum River / Little Qualicum River require 75% of escapement target in river.

In both Situation 1 and 2 in-season catch per unit effort (CPUE) information from commercial chum fisheries in Johnstone Strait will be a consideration in Area 14 management decisions.

The recommended management option for Area 14 will be presented and reviewed at the pre-season Chum Advisory Committee meeting. Further discussions on the Area 14 chum management will occur during the in-season weekly Chum Industry conference call.

In-season Decisions

Additional opportunities using in-season data are evaluated at weekly meetings of the Chum Advisory Committee which usually occur from mid-October to late November. Each week, the following considerations will guide the length of net and troll openings:

- If gear counts indicate a modest fleet size of 50 vessels or less, gill net and troll openings may be expanded beyond one to two days per week subject to stock expectations.
- Escapement information is factored into the amount of fishing time that is provided. For example, there is a possibility for reducing or eliminating beach and creek mouth boundaries when the overall escapement goal has been reached, individual surpluses have been identified and by-catch of non-target species is not an issue. Escapements are monitored by DFO Stock Assessment and local hatchery staff.
- Additional fishing days are considered if time is lost due to poor weather conditions.
- A limited effort seine fishery with a catch target will be considered from late October to late November, based on chum escapement, abundance in the approach areas and allocation guidelines. Full fleet opportunities may also be available. Further fishing opportunities for gill net and troll may be considered following the seine fisheries.

7.10.4 Issues

The presence of sea lions in Area 14 appears to have reduced net and troll CPUE, reduced escapement in some streams, and altered migration and holding behaviour which has impacted assessment capabilities. These impacts will be considered in the management of the fishery, and may include exploring new assessment techniques.

In recent years the Puntledge River has experienced proportionally greater escapements than the two Qualicum Rivers and in the last two years, escapements to the two Qualicum Rivers have been below target. This trend may continue, necessitating consideration of fishing strategies to selectively target the Puntledge River return.

7.10.5 Prospects

For 2013 a below average return is expected, however, chum forecasts remain highly uncertain.

7.11 Area 16 Chum Decision Guidelines

7.11.1 Background

This fishery targets wild chum stocks returning to river systems in the Jervis Inlet area. The main systems are Tzoonie, Deserted and Skwawka Rivers. The overall escapement goal for Jervis Inlet streams is 110,000. These terminal fisheries occur when the individual or combined escapement goals have been assured.

Management is guided by advice from the South Coast Chum Advisory Committee which has been in operation since 2004. This committee represents interests for mid-Vancouver Island, Johnstone Strait and WCVI fisheries. Fishing opportunities do not occur on a regular basis. There have been no fisheries in Area 16 in recent years.

Area 16 chum are managed as a component of "mixed-stock harvest strategy" chum and fishing opportunities are guided by coast-wide allocations of chum salmon. Assessment in the area is conducted by Fisheries and Oceans Canada Charter Patrol vessels, DFO Stock Assessment and Sechelt Indian Band staff.

7.11.2 Constraints

There is mandatory non-retention of coho. Fishing is limited to terminal areas to minimize impacts on passing stocks.

7.11.3 Decisions Guidelines

Commercial fishing opportunities are evaluated at weekly meetings of the Chum Advisory Committee, usually starting in the first week of October. In-season data is reviewed on a weekly basis until the end of the season, which usually occurs around the end of November. Area 16 chum fisheries are not planned based on pre-season forecasts alone. The potential implementation of a limited fleet-size (e.g. three to five vessels) weekly assessment fishery in the lower Jervis Inlet area may be discussed with the Area E and H Harvest Committees. A weekly assessment fishery in the last two weeks of October and the first week of November may, over time, provide an earlier indication of overall abundance returning to this area. Fishing opportunities will be provided in an area when the escapement goal has been achieved. Achievement of the escapement goal includes the numbers of fish in-river plus the amount of fish inside a designated sanctuary area. The earliest potential fishing opportunity is anticipated near the end of October.

7.11.4 Prospects

A below average return is expected to Area 16 streams based on escapements to contributing brood years.

7.12 Area 17 Chum Decision Guidelines

7.12.1 Background

This fishery is directed primarily at Nanaimo River stocks. The Nanaimo River chum stocks are supplemented by the Nanaimo River Hatchery on poor return years. Escapements fluctuate annually and fishery openings are planned in-season based on escapement estimates. Management is also guided by advice from the Chum Advisory Committee as outlined for Areas 14 and 16. Area 17 chum are managed as a component of "mixed-stock harvest strategy" chum and fishing opportunities are guided by coast-wide allocations of chum salmon. The south coast chum allocation for Area 14 to 19, 28 and 29 is outlined in Appendix 7. The Johnstone Strait chum allocation arrangement differs from the overall allocation structure for these areas. Fishing opportunities in Area 17 will be based on catch levels in relation to the overall south coast allocation of chum. The overall escapement goal for the Nanaimo River is 60,000.

7.12.2 Constraints

- Subarea boundaries protect migrating Fraser River chum and confine the fishery to the Nanaimo River stock.
- Coho and chinook conservation measures in effect until November 10 include non-retention and barbless hooks for troll.
- The gill net fishery may be restricted to daylight hours and maximum soak times if coho encounters are high. Restrictions would be implemented after consultation with the Chum Advisory Committee.

7.12.3 Decision Guidelines

Pre-season forecasts are helpful in defining possible opportunities, but decisions to open terminal fisheries for Nanaimo River chum are not based on pre-season information. Opportunities are evaluated during the weekly in-season review of Nanaimo escapement estimates within the Chum Advisory Committee process. Escapement estimates are derived from a combination of helicopter over flights, combined DFO/Snuneymuxw in-river assessment; on-grounds charter patrol surveys of approach and terminal areas and fishery officer patrols of the river.

Opportunities for gill net, troll and seine fisheries are discussed once fish have started to enter the Nanaimo River and are present in terminal areas. Final decisions are made at the weekly Chum Advisory Committee meeting. If commercial opportunities are identified, management will be guided by the following considerations:

- Gill nets open for one or two days. Fishing days and duration subject to escapement levels.
- Troll open seven days per week because of demonstrated low catch rates.
- After initial opening, continued fishing opportunities depend upon information derived from CPUE in the commercial fisheries, and on-going approach area and in-river assessments.
- If catches remain good and escapement goal is reached, commercial fisheries can continue.
- Additional fishing days will be considered if time is lost due to poor weather conditions.

7.12.4 Issues

The gill net fleet will be allowed to use 90 mesh Alaska twist in Area 17 based on previous work conducted in Area 14. The two areas are similar with respect to target species and incidental catch issues, and therefore the results from Area 14 are applicable to Area 17.

7.12.5 Other Fisheries

First Nations FSC fisheries as well as tidal/non-tidal recreational fisheries are conducted on these stocks. Local FSC fishing opportunities are undertaken by Nanaimo First Nation in consultation with the Department. Tidal recreational fisheries are subject to the normal daily and possession limits and there are no closed areas. There are no opportunities for non-tidal recreational fisheries in the Nanaimo River.

7.12.6 Prospects

For 2013 a near target return is expected, however, chum forecasts remain highly uncertain.

7.13 Area 18 Chum Decision Guidelines

7.13.1 Background

This fishery is directed primarily at Cowichan River stocks although some Goldstream chum is also harvested. The outer Cowichan chum fishing boundary is situated to minimize encounters of Saanich Inlet Chum. Chemainus River stocks are also impacted but likely to a lesser extent.

Area 18 chum are managed as a component of "mixed-stock harvest strategy" and fishing opportunities are guided by coast-wide allocations of chum salmon. The south coast chum allocation for Area 14 to 19, 28 and 29 is outlined in Appendix 7. The Johnstone Strait chum allocation arrangement differs from the overall allocation structure for these areas. Fishing opportunities in Area 18 will be based on catch levels in relation to the overall south coast allocation of chum. The escapement goal for the Cowichan River is 160,000 chum. The target was revised from 110,000 in 2009 and is based on habitat area and chum spawning densities in the Cowichan River. In river chum escapement estimates are provided by a Didson Counter located in the lower river since 2006.

Fishery openings are planned in-season based on escapement estimates. Management is also guided by advice from the Cowichan Fisheries Roundtable (the Roundtable) and the Chum Advisory Committee.

7.13.2 Constraints

- Subarea boundaries protect coho holding off Cherry Point.
- Beach boundaries are in effect to protect coho and chinook.
- Cowichan Bay is usually closed to protect coho and chinook and to provide a refuge for holding chum; however, if chum escapement targets are reached and timing is such that chinook escapement is complete this area could be opened to access surplus chum.

- Other coho conservation measures in effect include non-retention, barbless hooks for troll, and mandatory brailing for seines.
- The gill net fishery may be restricted to daylight hours. Maximum soak times for gill nets could be implemented if high coho by-catch occurs. This would occur following consultation with the Roundtable and the Chum Advisory Committee.

7.13.3 Decision Guidelines

Pre-season forecasts are helpful in defining possible opportunities, but decisions to open fisheries are not based on pre-season information. Opportunities are evaluated during the weekly in-season review of Cowichan escapement estimates within the Roundtable and the Chum Advisory Committee process.

It is the Cowichan Harvest Roundtable's goal to identify potential commercial fisheries earlier in the run timing, to harvest the identified surplus throughout the run-curve instead of cropping the surplus from the end of the run, and to be able to make decisions quickly so that fisheries can be initiated in a timely manner.

A revised escapement target of 160,000 has been accepted by the Roundtable. The revised chum target is based on habitat area and chum spawning densities in the Cowichan River. In river chum escapement estimates are provided by a Didson Counter located in the lower river.

Regardless of in-river escapement estimates, the assessment of marine abundance through the test fishery and/or over-flights will determine if there is an opening on Cowichan chum stocks. The following guidelines are used for in-season management:

- 25,000 chum enumerated in the Cowichan River triggers the start of the Area 18 seine test fishery.
- Area 18 seine test fishery information will be used in conjunction with upper river spot indicators to determine whether the remainder of the escapement goal is expected to be achieved. These test fishery arrangements are under review pending discussions on potential arrangements for use of fish to finance the test fishing activity.
- Small gill net fisheries will be initiated on short notice if in-stream migration numbers and marine approach area abundance warrants an opening. These fisheries are subject to commercial licence area allocation status.
- Troll fisheries may open seven days per week because of demonstrated low catch rates (depending on allocation).
- Sustained in river chum migration and fish abundance in the marine area that indicates a higher probability of reaching escapement goals may trigger a seine fishery.
- Seine commercial fisheries would be subject to commercial licence area allocation status.
- Subject to fishery review and continued escapements, commercial fisheries may continue and opening types will be adjusted to meet overall guidelines.
- Recreational fisheries in the river open when abundance is deemed sufficient.

- Specific dates and boundaries will be determined in-season through the Roundtable and Chum Advisory process. Timing of migration is also important in terms of the health of the run and in relation to mixed stocks of Goldstream chum in the Area 18 fishing area.

7.13.4 Issues

Discussions are on-going with First Nations regarding the potential for commercial harvest opportunities.

7.13.5 Other Fisheries

First Nations FSC fisheries and tidal/non-tidal recreational fisheries are conducted on these stocks. Tidal recreational fisheries are subject to the normal daily and possession limits. Non-tidal recreational fisheries will also be considered if escapement and FSC needs are met.

7.13.6 Prospects

For 2013 a near target return is expected, however, chum forecasts remain highly uncertain.

7.14 Area 19 Chum Decision Guidelines

7.14.1 Background

This fishery is directed primarily at Goldstream River stocks although some Cowichan River chum is also harvested. Fishery openings set for mid to late November are limited to portions of Saanich Inlet which are outside or to the north of Squally Reach. This area restriction is implemented to minimize impact on Goldstream chinook and coho. The outer Saanich Inlet chum fishing boundary is situated to minimize encounters of Cowichan Chum.

Fisheries are planned in-season based on escapement estimates. Management is also guided by advice from the Chum Advisory Committee. Area 19 chum are managed as a component of "mixed-stock harvest strategy" chum and fishing opportunities are guided by coast-wide allocations of chum salmon. The south coast chum allocation for Area 14 to 19, 28 and 29 is outlined in Appendix 7. The Johnstone Strait chum allocation arrangement differs from the overall allocation structure for these areas. Fishing opportunities in Area 19 will be based on catch levels in relation to the overall south coast allocation of chum. The overall escapement goal for the Goldstream River is 15,000.

7.14.2 Constraints

- Subarea boundaries to protect chinook and coho holding in Squally Reach.
- Commercial fisheries will utilize selective fishing techniques to minimize by-catch impacts.

7.14.3 Decision Guidelines

Chum fisheries in Area 19 are managed on the basis of in-season escapement estimates. Goldstream escapement estimates are derived from stream walks as this is a relatively small system with good viewing conditions.

7.14.4 Issues

Discussions are on-going with First Nations regarding the potential for commercial harvest opportunities.

7.14.5 Prospects

For 2013 a near target return is expected, however, chum forecasts remain highly uncertain.

7.15 Nitinat Chum Decision Guidelines

7.15.1 Background

The minimum gross escapement goal to Nitinat Lake is 225,000 chum; 175,000 into the rivers, 10,000 for Ditidaht First Nations Food, Social and Ceremonial fisheries, and a minimum of 40,000 into the Nitinat hatchery. The maximum escapement target is 325,000. The additional 100,000 chum salmon are partly utilized as hatchery broodstock. It is also thought that additional chum might increase the distribution of spawners in the Nitinat River and to other Nitinat Lake tributaries.

- Commercial fisheries occur on a regular basis for seine and gill net; trolling is also permitted, but there has been little interest in previous years.
- The fishing period is generally October 1 to November 15.
- A gill net test fishery typically occurs in Nitinat Lake and provides bi-weekly escapement estimates for the lake, beginning in the last week of September. These test fishery arrangements are under review pending discussions on potential arrangements for use of fish to finance the test fishing activity.
- Nitinat River and Nitinat Lake tributaries escapement estimates are based on river swims and aerial and boat-based surveys.
- Ditidaht First Nation provides an indication of chum abundance in Nitinat Lake in conjunction with FSC harvesting.

7.15.2 Constraints

- Typically no commercial fishing takes place prior to the first week in October due to Fraser River steelhead by-catch concerns, unless consultations with the Provincial fisheries biologist allows for a late September opening.
- Commercial fisheries October 1 to October 15 will operate inside a one mile boundary between Dare Point and Pachena Point, with a weed line of between 1.2 and 2.0 meters on nets in order to minimize steelhead interception and mortality.

- After October 15, fisheries are permitted within a two mile boundary of the shore line between Bonilla Point and Pachena Point.
- Non-retention of steelhead, coho and chinook during periods of low abundance.
- No commercial fishery inside Nitinat Lake.
- Boundaries at Cheewhat River, Klanawa River and Carmanah Creek are in place to protect local chum and coho stocks.
- When both fleets fish together, gill nets only may be permitted between Bonilla Point and Logan Creek, subject to coho encounters.

7.15.3 Decision Guidelines

- Annual pre-season forecasts for the Nitinat system (predominantly enhanced) are based on brood year escapements, hatchery smolt output and estimated survival rates.
- The fishing plan is developed in advance of the fishery by August.
- In the early portion of the fishery (Oct 01-15), the allocation target will be 75% gill net and 25% seine. The overall fishery allocation target is 30% gill net and 70% seine.
- If no surplus is forecast, the commercial fishery is contingent on in-season assessment.

In-season Decision Guidelines

The commencement/continuation of commercial fisheries after the first week of October is contingent on achieving established escapement milestones:

Table 7-13: 2013 Nitinat Chum Fishing Plan

DATE	GUIDELINES	ACTION
Week 9/3 (Sep 15-21)		No fisheries due to Fraser steelhead concerns. No gill net assessment or commercial fishery anticipated.
Week 9/4 (Sep22-Sep 24)		No fisheries due to Fraser steelhead concerns. No gill net test or commercial fishery anticipated; a gill net assessment fishery may commence inside a line one mile south of Pachena Point to one mile south of Dare Point.
Week 10/1 (Sep 29- Oct 5)	No commercial fishery until October 01; gill net assessment fishery may commence. Fishery opportunity based on preseason forecast. Escapement in lake by Oct. 5 = 75,000 *	Gill net and seine fishery anticipated. Fishery inside a line one mile south of Pachena Point to one mile south of Dare Point. Continue gill net assessment fishery and escapement monitoring to lake.

Week 10/2 (Oct 6-12)	Escapement in lake by Oct 12 = 125,000.*	Fisheries in this week dependent on escapement to date. Early season allocation is 75:25 gill net: seine. Maximum gill net catches of 200,000 chum before seine fishery.
Week 10/3 (Oct 13-19)	Escapement in lake by Oct 19 = 175,000.*	Seine and/or gill net opportunities depending on escapement to date, escapement rate and effort.
Week 10/4 (Oct 20-26)	Escapement in lake by Oct 26 = 225,000.	Seine and/or gill net opportunities depending on escapement to date, escapement rate and effort.

*With sufficient stock outside. Min weekly influx = 50,000.

- Gill net and limited fleet seine fisheries may occur in the first week of October if an adequate surplus is forecast, or if assessment information is required.
- A gill net and seine advisory group will be convened, as required, to assist the DFO fishery manager in developing weekly in-season fishing plans.
- In the early portion of the fishery (Oct 01-15), seine fisheries will be assigned a weekly catch target.
- If the forecast surplus is low, weekly escapement milestones must be achieved before openings are scheduled.
- A full fleet seine fishery may proceed when assessments in Nitinat Lake and in the adjacent marine area indicate there is a fishable surplus. During this phase of the fishery, both gill net and seines will fish at the same time in the same areas, except that gill nets may be provided an exclusive fishing area between Bonilla Point and Logan Creek.

7.15.4 Issues

- Area B harvest committee intends to work towards share-based fishery arrangements in the Nitinat fishery.
- Accuracy of pre-season forecasts has been very poor.
- An outside gill net test fishery in early October may be considered in those years where a below average return is forecast.
- Uncertainty regarding the use of test fisheries to assist with in-season management of the fishery.

7.15.5 Other Fisheries

- First Nations FSC: no constraints on FSC fisheries at normal run sizes. Ditidaht First Nation works closely with Nitinat Hatchery and participates in research projects which normally require a modest allocation of chum.
- Recreational/Tidal: normal limits; finfish closure at mouth of the Nitinat River to prevent foul hooking. Non-tidal: fishery contingent on escapement and concern for impacts on spawning fish.
- ESSR fishery in Nitinat Lake by Ditidaht First Nation when surplus occurs.

- A scientific licence may be issued to the Ditidaht First Nation to provide biological samples and additional information on stock status and movement in Nitinat Lake.

7.15.6 Prospects

Returns from 2006 to 2010 were lower than average. The 2011 return was higher than forecast, and about average, due to the positive 2008 sea entry year for returning 4 year olds. The 2012 return was similar to the pre-season forecast, was well below average, but higher than the minimum escapement target which provided for short duration gill net and seine fisheries. The outlook for 2013 chum returns is again well below average. The 2013 pre-season forecast will be available by early April 2013.

7.16 Nootka Chum Decision Guidelines

7.16.1 Background

- There are approximately 30 unenhanced wild chum river systems in Nootka Sound. Conuma Hatchery enhances four systems in Tlupana Inlet.
- Outer Nootka fishing boundaries are designed to target fish migrating through the approach area and to avoid harvest of fish holding off the stream mouths.
- A limited effort fishery may occur within these boundaries through October to provide further opportunity and indications of abundance, dependent on the pre-season forecast relative to the limit reference point.
- In Area 25 when limited effort fisheries are approved in Nootka Sound there is a maximum of 4 vessels, 2 days per week. Effort in the Esperanza Inlet fishery has been limited to 2 vessels, 2 days per week in the past couple year; however, a review of the harvest rate in this area suggests this level of effort is still too high and further review needs to be done:
- If abundance allows, full-fleet Nootka openings will occur within the same boundaries for one day in two consecutive weeks; information collected during fishing events are used as an indicator of abundance and fishery potential prior to escapement.
- Seines have fished in years of high chum abundance.
- There is potential for an ESSR fishery which is dependent upon identifying a surplus to the enhanced systems in Tlupana Inlet through in-season abundance indicators. The likelihood of an ESSR fishery has been reduced in recent years due to the ability of the fishing industry to conduct controlled fisheries on identifiable surpluses.
- In 2012, limited effort fisheries were not conducted in Nootka Sound and in Esperanza Inlet, due to a low pre-season forecast relative to the limit reference point.

7.16.2 Constraints

- Daylight only fisheries to reduce by-catch. The goal is to optimize Nootka chum harvest and limit by-catch of chinook and dogfish.
- Stream mouth boundary at Marvinas Bay to protect local stocks adjacent to fishing area.
- Hisnit Inlet closed during Tlupana Inlet fisheries to protect Deserted River chums.
- A late-September start date has been typical.
- There are separate approach area and terminal fisheries to facilitate bio-sampling for age and hatchery contribution.

- Concern for wild chinook stocks in mid-September in outer Nootka Sound.
- Limited fleet fisheries will be curtailed when the pre-season forecast is lower than the limit reference point in Nootka Sound and Esperanza Inlet.
- Conuma Hatchery has been unable to achieve their broodstock collection target for approximately 8 years due to overall poor escapement in Area 25.
- Until stocks show a significant recovery full fleet and seine fisheries will not occur.

7.16.3 Decision Guidelines

- The general fishery management approach has been to limit the harvest rate to 20% in the approach waters (outer Nootka Sound). This is achieved by fishing one day per week during daylight hours with a "moderate" fleet of a maximum of 50 gill net vessels.
- For 2013, the pre-season forecast return of Area 25 chum is for a low return and below the lower fishery reference point (LRP) for the target stocks. Therefore, no fisheries are anticipated unless in-season stock assessment suggests the return is higher than the LRP.
- If the return is above the LRP, catch targets are not used as a harvest control. Rather, effort is restricted in order to limit the harvest rate to 20%.
- Fishing area and the timing of openings are also designed to avoid specific areas where non-target stocks are prevalent:
    - To reduce chinook interceptions, no openings are scheduled prior to September 25.

For low run sizes when the risk of overharvest is higher, additional controls may be utilized to ensure the allowable harvest rate is not exceeded. For example,

- The fishing area may be restricted.
- The number and length of openings may be reduced.
- Participants may be limited through the use of "pooled fisheries".

- A terminal harvest in Tlupana Inlet may occur if a surplus to escapement requirements is identified through in-season abundance indicators.

In-season Decisions

- If in-season assessment information (from escapement surveys and limited effort fisheries) suggests the return of Nootka stocks will be at or near the target reference point (LRP), and broodstock collection is at or near target, a terminal fishery on surplus hatchery stocks in Tlupana Inlet may be conducted.
- Seine opportunities will be considered in-season, if chum abundance is adequate.
- Coho (and chinook) retention in net fisheries may be permitted when abundance permits.

7.16.4 Issues

- Conuma River Hatchery has had difficulty in achieving egg targets on four Tlupana Inlet enhanced systems (Sucwoa, Tlupana, Conuma and Canton) for many years.
- Deserted River chum stocks are no longer enhanced. These late-run stocks will require additional protection during later Tlupana Inlet openings.

- Chinook by-catch is an issue around mid-September.
- With the introduction of the limited fleet fishery in Esperanza Inlet, the overall Area 25 chum harvest rate is under review.

7.16.5 Prospects

The pre-season forecast for 2013 is for continued low returns. The low forecast for Area 25 relative to the limit reference point likely precludes fisheries in 2013.

7.17 Nimpkish Chum Decision Guidelines

7.17.1 Background

Nimpkish chum have later timing than other Johnstone Strait chum stocks and are harvested in the terminal area. The spawning escapement goal for the river is set at 110,000 chum with additional fish required for brood-stock (approximately 3,000 females) for the hatchery. The Namgis First Nation participates in the assessment and the management of this stock.

Returning chum salmon are assessed by scheduled over-flights of the river and in-river assessment activities (swim surveys). Other assessment alternatives are currently being considered, such as small fleet gill net assessment fisheries in years when surpluses are expected.

Should a commercial fishing opportunity be identified, Area B and D fishing opportunities would be based on the current status of chum allocation goals, fleet participation and expected catch levels. Once all commercial and recreational opportunities are exhausted and if a surplus remains, an ESSR opportunity may be provided to the Namgis First Nation.

7.17.2 Constraints

- Area of fishing is confined to a portion of Subareas 12-18 and 12-19 to direct harvest on returning Nimpkish River chum and to minimize impact on other salmon species.
- Collection of assessment information and river enumeration is often hampered by poor weather conditions and high water levels, affecting the accuracy of in-season run size estimation and fishing opportunities.

7.17.3 Decision Guidelines

- Decision guidelines are developed in-season based on abundance estimates as determined by in-season assessment information.

In-season Decisions

- Commercial Area B and D harvest opportunities will be subject to abundance levels and harvest sharing arrangements by all parties.

7.17.4 Issues

- Ability to accurately determine run strength due to poor weather and high water conditions.
- The late timing of this stock can result in market availability issues.

7.17.5 Prospects

Observations in recent years have shown consistently low abundance of chum returning to the Nimpkish River. Low brood year returns in 2009 and no significant improvements indicated in marine survival leave expectations for Nimpkish chum to be below target in 2013.

7.18 Limited Effort Terminal Chum Decision Guidelines

7.18.1 Background

- Starting in 2004 the Area D Gill net Association proposed limited, small-fleet fishing opportunities for chum salmon in terminal areas.
- The intent of this program was to determine if small-scale limited effort gill net fisheries could be economically viable while limiting exploitation rates to 10 to 20% of returning stocks and providing valuable stock assessment information.
- In recent years these fisheries occurred in:
    - Barkley Sound where 4 vessels fished a maximum of 2 days per week;
    - Clayoquot Sound, where 4 vessels started 2 weeks later than Barkley Sound to avoid chinook by-catch;
    - Esperanza Inlet, where 2 vessels fished a maximum of 2 days per week;
    - Quatsino Sound (Neroutsos Inlet), where 2 vessels fished 1 day per week for a total of 3 fishing days; and
    - Bute Inlet, where 5 vessels fished for a total of 3 fishing days.

7.18.2 Constraints

- Low chum abundance in recent years has limited the scope of these fisheries.
- The 10-20% Harvest Rate target has been consistently exceeded in Esperanza Inlet.

7.18.3 Decision Guidelines

- In 2012, revised target escapements (75% SEGs; Sustainable Escapement Goals) and limit reference points (LRP; 25% SEGs) for all WCVI areas were developed (Table 1). Although the WCVI chum forecast can be highly uncertain, the forecast is used to inform pre-season fishery planning. Where the forecast is below the LRP for an area there are no anticipated harvest opportunities.

Table 14: Southwest Vancouver Island Chum Conservation Unit Preseason Forecast for 2013

Location	PFMA	2013 forecast	Limit Reference Point (LRP)	Target Reference Point (TRP)
Barkley	23	54,000	44,000	150,952
Clayoquot	24	53,000	19,000	70,212
Nootka	25	26,000	34,000	149,000
Esperanza	25	15,000	16,000	46,000
Kyuquot	26	87,000	19,000	73,169
SW VI CU	**all**	**235,000**	**132,000**	**489,333**

Note: LRP - Interim LRP's are equivalent to the 25% SEG (Sustainable Escapement Goal), or 25% of the long term average escapement. LRP's represent the escapement level below which fisheries should not be conducted.

Note: TRP - Interim TRP's are equivalent to the 75% SEG, or 75% of the long term average escapement. TRP's represent the target escapement for each area.

- Fishery planning in 2013 will be guided by the preseason forecast and available in-season assessment information. Fishing plans are developed to include fishery sampling, set log data collections, and observer coverage (if required for each area).

7.18.4 Issues

- Chum spawner enumeration effort has been reduced in recent years.
- Very poor escapements observed in Area 25 have prevented Conuma River Hatchery from reaching its egg targets for many years.
- Limited effort assessment fisheries have produced minimal assessment information.

7.18.5 Prospects

- Area D had proposed options for developing a chum Management plan for the WCVI. In 2013 Stock Assessment has begun working on a chum management plan.
- Limited effort commercial fisheries may occur in Areas 23, 24 and 26 contingent on First Nation FSC needs being met first.
- Fishing opportunities for 2 vessels in Kyuquot Sound are being considered.

7.19 Fraser River Pink Decision Guidelines

7.19.1 Background

Fraser pink salmon return to the Fraser system on a two year cycle, with returns almost entirely in odd calendar years only. Minimal numbers of Fraser River pink salmon return in even years and no directed harvest occurs in these years.

7.19.2 Constraints

It is expected that conservation constraints for co-migrating stocks of concern such as Late Run and Cultus Lake sockeye, Interior Fraser River coho and Interior Fraser River steelhead will likely constrain the ability to harvest all available Fraser River Pink TAC identified in-season.

7.19.3 Decision Guidelines

The 2013 forecast return for Fraser River pink salmon at the various probability levels is shown in Table 7-15. There is a one in ten chance that the return of Fraser River Pink Salmon will be at or below 4.79 M (i.e. lower 10% forecast range) and a nine in ten chance that it will be at or below 17.11 M (i.e. upper 90% of forecast range). The mid-point of the forecast is 8.93 M (there is a one in two chance the return will be below this specified run size). Due to changes in assessment methods of adult returns over time, the 2013 pink forecast is highly uncertain.

For further details refer to the Canadian Science Advisory Secretariat Research Document: Pre-season run size forecasts for Fraser River Sockeye and Pink salmon in 2013 (Grant and MacDonald, 2012/145).

Table 7-15: Forecast Return for Fraser River Pink Salmon at Various Probability Levels in 2013.

A	B	C	D	E	F	G	H	I	J	K	L
Run timing group		BY (09)	BY (08)	Ret	Mean Run Size		Probability that Return will be at/or Below Specified Run Size [a]				
Stocks	Forecast Model	(EFS)	(EFS)	2013	all cycles	2013 cycle	10%	25%	50%	75%	90%
		2011 Brood Year Fry									
TOTAL PINK SALMON	*Power (SSS)*	520M			12,580,000	12,580,000	4,794,000	6,401,000	8,926,000	12,473,000	17,111,000

a. Probability that return will be at, or below, specified projection.

Definitions: BY: Brood year; BY09: brood year 2009; BY08: brood year 2008; EFS: effective female spawners; Prod. (8yr), Prod. (4yr): Productivity in age-4 recruits-per-effective female spawners in the last 8 yrs (1998-2005) or last 4 yrs (2001-2005); Ei (Entrance Island sea-surface-temperature); PDO (Pacific Decadal Oscillation), Pi (Pine Island sea-surface temperature).

The escapement strategy for Fraser pink salmon continues to be based on an interim escapement goal of 6 M Fraser River pink salmon. At run sizes above 20 M, the escapement target is 30% of the total return, with an exploitation rate cap of 70%. Escapement targets and exploitation rates are outlined in the escapement plan in Table 7-16.

Table 7-16: Fraser River Pink Salmon Escapement Plan for 2013.

Fraser Pinks						
7,059,000	Lower Fishery Reference Point					
20,000,000	Upper Fishery Reference Point					
70%	Maximum Exploitation Rate					
		Pre-season Forecast Return				
		p10	p25	**p50**	p75	p90
	forecast	4,794,000	6,401,000	**8,926,000**	12,473,000	17,111,000
	escapement target	4,306,000	5,530,000	**6,000,000**	6,000,000	6,000,000
	allowable ER	10%	14%	**33%**	52%	65%

Preseason fishing plans are developed based on the 50 percent probability level forecast. In-season run size estimates form the basis for management once these estimates are available.

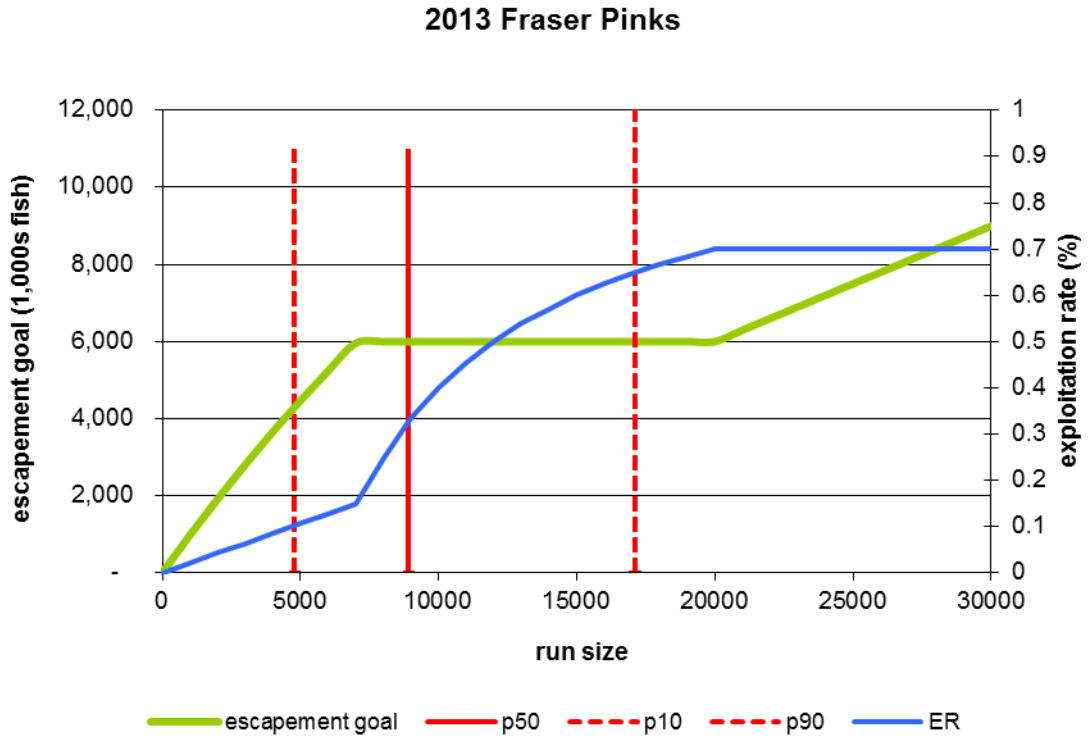


Table 7-17: 2013 Pink Target and Exploitation Rate versus Run-Size

7.19.4 Issues

- Due to conservation concerns for some co-migrating species, it is anticipated that, similar to previous years, alternative fishing gear and fishing strategies may be employed to access Fraser Pink TAC. Alternative gears used in the past have included beach seines and shallow seines in the Fraser River. In the marine areas, varying fishing strategies and gear to allow purse seines with independent observer coverage to access shallow areas at the mouth of the river and within the river.
- The Department will be establishing management rules for allowable sockeye impacts and/or for stocks of concern during directed fisheries on Fraser pinks.

- The Department will be working with the Area B Seine and Area H harvest committees to develop a demonstration individual transferable quota (ITQ) fishery for Fraser pink salmon (similar to the fishery in 2011).
- A proposal to use tooth tangle nets in the lower Fraser River by First Nations for economic opportunity fisheries is being reviewed.

7.19.5 Prospects

If returns exceed the p10 level of abundance there will likely be TAC available for fisheries to be directed on Fraser pink salmon, access to TAC will be subject to constraints on co-migrating stocks and species.

7.20 North Vancouver Island and Mainland Inlet Pink Decision Guidelines

7.20.1 Background

Northern Vancouver Island and Mainland Inlet pink salmon return on both even and odd year cycles, although typically the dominant cycle is the even-year cycle. The key pink systems on Northern Vancouver Island and in the Mainland Inlets include: Adam/Eve, Salmon, Cluxewe, Quinsam/Campbell, Quatse, Amor de Cosmos, Kakweiken, Glendale, Ahnuhati, Ahta, Lull, Embley, Kingcome, Wakeman and Phillips. These stocks are mainly harvested in mixed-stock Johnstone Strait Fraser River sockeye and pink directed fisheries. Some terminal areas, such as the Kakweiken and Glendale, provide opportunities for all three commercial gear types, although seines catch the majority of fish. Opportunities are also available for First Nations and recreational harvesters; however, effort is generally low.

The migration of these stocks to the terminal areas normally begins in early to mid-August and is usually complete by the middle to the end of September. These stocks may be managed as an aggregate early in the season (provided surpluses are expected for stocks) and then separately as they enter the terminal areas. Limited participation fisheries in the terminal areas can be used as a tool for in-season assessment in years when good returns are expected. Fleet size during these fisheries is highly variable and depends on other fisheries occurring during the same time period (e.g. Fraser River sockeye fisheries) as well as market prices. Over-flights are also used to assist in estimating abundance in the terminal areas, as well as to provide in-season river escapement estimates.

Normal recreational fishery opportunities are available. The majority of recreational effort in is terminal areas and effort has increased in recent years.

First Nations FSC fishing opportunities on these stocks are also provided. An ESSR fishery at the Quinsam Hatchery will be considered in years when abundance indicates that an ESSR fishery may be warranted.

7.20.2 Constraints

- Managed to meet escapement targets; once surpluses identified terminal fisheries are considered.
- Directed commercial Mainland Inlet pink fisheries are restricted to terminal areas.
- Daylight fishing only.
- Fishing boundaries are established to minimize encounters of chinook, coho, sockeye and chum, and to ensure escapement targets are reached.
- Upper Knight Inlet boundary is implemented to conserve weaker stocks of pink.
- Kakweiken, Glendale and Phillips pink stocks are managed separately in terminal areas.
- In 2013 a cautious approach to managing these stocks will continue due to continued uncertainties on return rates.
- Directed limited fleet commercial fisheries may occur in 2013 and will be confirmed in-season based on in-season assessment.

7.20.3 Decision Guidelines

In-season Decisions
Commercial representatives are consulted through in-season licence area advisory bodies. Weekly assessments to determine abundance and potential fishing opportunities are based on over-flights, on-grounds surveys of the terminal areas and in some years, limited effort seine, gill net, and troll test fisheries.

The following considerations will guide fisheries management decisions:

- Commercial fishing opportunities are generally not considered until at least 30% to 40% of target escapements are in the river or are identified in terminal sanctuary areas, and there is evidence that a significant proportion of the return has not yet entered the river or sanctuary area.

7.20.4 Issues

- The commercial industry may have marketing and quality concerns during a protracted fishery in years when a significant surplus is available.
- The abundance of these stocks can be highly variable and there are difficulties in assessing these stocks due to glacial water conditions and limitations of available assessment methods.

7.20.5 Prospects

Although these systems are typically dominant in even-cycle years, odd-year cycle returns have shown an increasing trend which continued into 2011. Returns to the spawning ground in 2011 were below brood. The expectation for 2013 is for average to below average returns; however, in-season monitoring beginning in July will confirm run strength. Historically pink returns to this area have been extremely variable and expectations are very uncertain.

8. SHARED STEWARDSHIP ARRANGEMENTS

Stewardship refers to the care, supervision or management of something, especially the careful and responsible management of something entrusted to one's care.[15] In the context of fisheries management, stewardship is often considered in terms of "shared stewardship", whereby First Nations, fishery participants and other interests are effectively involved in fisheries management decision-making processes at appropriate levels, contributing specialized knowledge and experience, and sharing in accountability for outcomes.

Moving toward shared stewardship is a strategic priority for DFO. This is reflected in a number of policies and initiatives, including the Wild Salmon Policy (WSP), the Resource Management Sustainable Fisheries Framework (SFF), Fisheries Reform, Aboriginal Aquatic Resource and Oceans Management (AAROM) Program, and the Aboriginal Fisheries Strategy (AFS).

Also referred to as "co-management," DFO is advancing shared stewardship by promoting collaboration, participatory decision making and shared responsibility and accountability with resource users and others. Essentially, shared stewardship means that those involved in fisheries management work cooperatively; in inclusive, transparent and stable processes, to achieve conservation and management goals.

In Pacific Region, DFO consults with and engages First Nations and other interests through a wide range of processes. For salmon, the focal point for DFO's engagement with First Nations, the harvest sectors and environmental interests is around the development and implementation of the annual IFMP. At a broad, Province-wide level, the Integrated Harvest Planning Committee (IHPC) brings together First Nations, commercial and recreational harvesters, and environmental interests to review and provide input on the draft IFMP, as well as coordinate fishing plans and (where possible) resolve potential issues between the sectors. The IHPC also meets post-season to review information regarding stocks and fisheries and implementation of the IFMP.

Consultation and engagement with First Nations is central to DFO's approach to fisheries management (including the development of IFMP) and fulfilling the Department's mandate. In addition to supporting good governance, sound policy and effective decision-making, Canada has statutory, contractual and common law obligations to consult with Aboriginal groups. For example, The Crown has a legal duty to consult and, if appropriate, accommodate, when the Crown contemplates conduct that might adversely impact section 35 rights (established or potential) (Source: Aboriginal Consultation and Accommodation: Interim Guidelines for Federal Officials to Fulfill the Legal Duty to Consult, February 2008)

Consultation and engagement with First Nations takes place at a number of levels and through a variety of processes. For example, a significant amount of consultation and dialogue takes place through direct, bilateral meetings between DFO and First Nations at a local level. This can include specific engagement on the draft IFMP or other issues during the pre-season, in-season or post-season. In addition to consultations at the local level, DFO works with First Nations at the aggregate or watershed level. For example, the Aboriginal Aquatic Resource and Oceans

[15] As defined in the Atlantic Fisheries Policy Review (AFPR): http://www.dfo-mpo.gc.ca/afpr-rppa/home_e.htm

Management (AAROM) program supports Aboriginal groups in coming together to participate effectively in advisory and decision-making processes used for aquatic resource and oceans management.

Other processes, such as the First Nations Salmon Coordinating Committee (SCC) and the Forum on Conservation and Harvest Planning, are being developed in order to facilitate dialogue between First Nations and DFO. In the case of the Forum, representatives of First Nations from the Fraser Watershed and marine approach areas (e.g. Vancouver Island) and DFO meet to discuss stock and fisheries information, identify issues and develop management approaches to help meet FSC needs of First Nations as they relate to Fraser salmon species. This type of engagement is critical with respect to migratory species such as Fraser salmon where management approaches in one area can have significant implications for management or fisheries in other areas. In the case of the First Nations SCC, First Nations representatives from 13 geographical areas within B.C. meet with DFO resource management to identify priority issues among B.C. First Nations as they relate to salmon. SCC priorities include advancing First Nations concerns related to salmon, access to salmon for FSC needs across the province and working to improve First Nations economic opportunities in salmon fisheries.

Engagement between DFO and First Nations also takes place through a number of bilateral and "integrated" (multi-interest) advisory processes, management boards, technical groups and roundtable forums.

In addition to integrated dialogue through the IHPC, the Department also works directly with the commercial and recreational sectors, largely through the Commercial Salmon Advisory Board (CSAB) and Sport Fishing Advisory Board (SFAB), respectively. The Department also officially consults with the Marine Conservation Caucus, an umbrella group representing eight core environment groups.

9. COMPLIANCE PLAN

9.1. Compliance Management Objectives

9.1.1 Conservation and Protection Program Description

The Conservation and Protection (C&P) program promotes and maintains compliance with legislation, regulations and management measures implemented to achieve the conservation and sustainable use of Canada's aquatic resources, and the protection of species at risk, fish habitat and oceans.

The program is delivered through a balanced regulatory management and enforcement approach including:

- promotion of compliance through education and shared stewardship;
- monitoring, control and surveillance activities;
- Management of major cases /special investigations in relation to complex compliance issues.

In carrying out activities associated with the management of Pacific salmon as outlined in this management plan, C&P will utilize principle-based approaches and practices which are consistent with the National Compliance Framework and the DFO Compliance Model.

9.1.2 Regional Compliance Program Delivery

For the salmon fisheries in the Pacific Region, C&P will be utilizing a broad scope of tools and approaches to manage compliance towards achieving conservation and sustainability objectives, including:

- Maintain and develop relationships with First Nations communities, recreational groups and commercial interests through dialogue, education and shared stewardship.
- Intelligence-led investigations may specifically target repeat and more serious offenders for increased effectiveness of enforcement effort. Illegal sales of salmon will continue to be a regional priority.
- Prioritize enforcement efforts on measures directed towards conservation objectives.
- Fish Habitat protection remains a key focus of fishery officer efforts.
- Utilize 'Integrated Risk Management' to ensure fishery officer efforts are focused and directed at problems of highest risk.
- Continue high profile fishery officer presence through patrols by vehicle, vessel and aircraft to detect and deter violators.
- Monitor and support at-sea observers and dockside monitors to ensure accurate catch monitoring and reporting.
- Support traceability initiatives within the salmon fishery to enhance accountability. Monitor and verify catches and offloads of salmon to ensure accurate and timely catch reporting and accounting, including coverage of Dual Fishing opportunities.
- Priorities and direct compliance efforts where there is a risk to salmon stocks of concern.
- Use of enhanced surveillance techniques, and new available technology as well as covert surveillance techniques as a means to detect violations and gather evidence in fisheries of concern.
- Patrols during open timed fisheries to increase intelligence gathering, build relationships with stake holders and ensure compliance to licence conditions.
- Inspect fish processors, cold storage facilities, restaurants and retail outlets for compliant product.
- Maintain a violation reporting 24-hour hotline to facilitate the reporting of violations.
- Continue to promote 'Restorative Justice' principles in all fisheries.

Consultation

C&P works closely within the Fisheries and Aquaculture Management sector and Habitat and Enhancement Branch to ensure that fishery and habitat management plans are enforceable and implemented in a controlled, fair manner. C&P has a multi-faceted role as educator, referee, mediator and law enforcer.

C&P participates on a regular basis with consultations within the fishing community and general public. Education, information and shared stewardship are a foundation of C&P efforts. C&P participates in all levels of the advisory process from Regional Integrated Harvest Planning Committee through to individual fishery sectoral committees. The importance of local field level fishery officer input to these programs has proven invaluable and will continue.

C&P will continue meeting at the local level with individual First Nations, through the fishery officer First Nation Liaison Program and with First Nations planning committee meetings that involve many First Nations' communities at one time.

C&P officers participate in local fishery management 'roundtables' and sport fishery recreational advisory committees in their respective areas and participate at Sport Fishery Advisory Board meetings.

Fishery officers are viewed as the public face of the department. During their day-to-day activities, the fishing community and general public provide comment and input that is promptly communicated to C&P managers, fisheries managers and habitat management staff. This public feedback is critical in identifying issues of concern and providing accurate feedback on emerging issues.

9.1.3 Compliance Strategy

In 2013, specific objectives for the salmon fishery will be to focus compliance management efforts on:

- Support development and implementation of the Strategic Framework for Fishery Monitoring and Catch Reporting in the Pacific Fisheries.
- Monitoring in-river and in marine approach waters using intelligence to target priority fisheries and compliance issues.
- Work with stakeholders to improve regulatory compliance.

Salmon fishery compliance continues to be a priority for C&P for 2013. There are, however, other competing priorities such as habitat management, the Canadian Shellfish Sanitation Program, and the protection of Species at Risk. These priorities often occur during the same periods as the salmon fisheries.

In order to balance multiple program demands, C&P applies a risk-based integrated work planning process at the Regional and Area levels. This process ensures that resources are allocated appropriately. Resource utilization is dependent on availability of program funding.

10. PERFORMANCE/EVALUATION CRITERIA

This section is intended to outline measurable indicators to determine whether or not those management issues outlined in IFMP Section 4 are being addressed and those objectives outlined in IFMP Section 5 are being achieved. These indicators may include those specifically developed for the IFMP, as well as, from existing evaluation processes.

Potential performance indicators will be required for assessing conservation and fishery sustainability; Wild Salmon Policy objectives; domestic and international objectives; First Nations, commercial and recreational objectives; Allocation objectives; Enhancement objectives, as well as, other indicators of interest.

The Department intends to work collaboratively with First Nations and stakeholders to review existing and/or develop new performance indicators that should be included as part of the performance/evaluation criteria.

1 APPENDIX 1: ADVISORY BOARD MEMBERSHIPS

Meeting dates and records of consultation can be found at:
http://www.pac.dfo-mpo.gc.ca/consultation/fisheries-peche/smon/ihpc-cpip/index-eng.htm

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Vacant	vacant

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Vacant	vacant

2 APPENDIX 2: FISHING VESSEL SAFETY

Vessel owners and masters have a duty to ensure the safety of their crew and vessel. Adherence to safety regulations and good practices by owners, masters and crew of fishing vessels will help save lives, prevent vessel damage and protect the environment. All fishing vessels must be in a seaworthy condition and maintained as required by Transport Canada (TC), WorkSafeBC, and other applicable agencies. Vessels subject to inspection should ensure that the certificate of inspection is valid for the area of intended operation.

In the federal government, responsibility for shipping, navigation, and vessel safety regulations and inspections lies with Transport Canada (TC); emergency response with the Canadian Coast Guard (CCG) and DFO has responsibility for management of the fisheries resources. In B.C., WorkSafeBC also regulates health and safety issues in commercial fishing. This includes requirements to ensure the health and safety of the crew and safe operation of the vessel. DFO (Fisheries and Aquaculture Management (FAM) and CCG) and TC through an MOU have formalized cooperation to establish, maintain and promote a safety culture within the fishing industry.

Before leaving on a voyage the owner, master or operator must ensure that the fishing vessel is capable of safely making the passage. Critical factors for a safe voyage include the seaworthiness of the vessel, vessel stability, having the required safety equipment in good working order, crew training, and knowledge of current and forecasted weather conditions. As safety requirements and guidelines may change, the vessel owner, crew, and other workers must be aware of the latest legislation, policies and guidelines prior to each trip.

There are many useful tools available for ensuring a safe voyage. These include:

- Education and Training Programs
- Marine Emergency Duties
- Fish Safe - Stability Education Course
- Fish Safe – Safe on the Wheel Course
- Fish Safe – Safest Catch Program
- First Aid
- Radio Operators Course
- Fishing Masters Certificates
- Small Vessel Operators Certificate
- Publications:
    - Transport Canada Publication TP 10038 *Small Fishing Vessel Safety Manual* (can be obtained at Transport Canada Offices from their website at: http://www.tc.gc.ca/eng/marinesafety/tp-tp10038-menu-548.htm
    - Gearing Up for Safety – WorkSafeBC

- Safe at Sea DVD Series – Fish Safe
- Stability Handbook – Safe at Sea and Safest Catch – DVD Series
- Safest Catch Log Book
- Safety Quik

For further information see: http://www.tc.gc.ca/eng/marinesafety/menu.htm
http://www.fishsafebc.com

1. Important Priorities for Vessel Safety

There are three areas of fishing vessel safety that should be considered a priority. These are: vessel stability, emergency drills, and cold water immersion.

1.1 Fishing Vessel Stability

Vessel stability is paramount for safety. Care must be given to the stowage and securing of all cargo, skiffs, equipment, fuel containers and supplies, and also to correct ballasting. Fish harvesters must be familiar with their vessel's centre of gravity, the effect of liquid free surfaces on stability, loose water or fish on deck, loading and unloading operations and the vessel's freeboard. Know the limitations of your vessel; if you are unsure contact a reputable naval architect, marine surveyor or the local Transport Canada Marine Safety Office.

Fishing vessel owners are required to develop detailed instructions addressing the limits of stability for each of their vessels. The instructions need to be based on a formal assessment of the vessel by a qualified naval architect and include detailed safe operation documentation kept on board the vessel. Examples of detailed documentation include engine room procedures, maintenance schedules to ensure watertight integrity, and instructions for regular practice of emergency drills.

The *Small Fishing Vessel Inspection Regulations* currently require, with certain exceptions, a full stability assessment for vessels between 15 and 150 gross tons that do not exceed 24.4 metres in length and are used in the herring or capelin fisheries. Once the proposed new *Fishing Vessel Safety Regulations* take effect, more vessels will be required to have a stability booklet.

In 2006, Transport Canada Marine Safety (TC) issued Ship Safety Bulletin (SSB) 04/2006 ("Safety of Small Fishing Vessels: Information to Owners/Masters About Stability Booklets"), which provides a standard interpretation of the discretionary power available under Section 48 and the interim requirements prior to the implementation of the proposed *Fishing Vessel Safety Regulations*. The bulletin calls for vessels more than 15 gross tons to have a stability booklet where risk factors that negatively affect stability are present. The bulletin also suggests vessels less than 15 gross tons assess their risk factors. Every fishing vessel above 15 GRT built or converted to herring or capelin after 06 July 1977 and engaged in fishing herring or capelin must have an approved stability

book. Additionally Transport Canada has published a Stability Questionnaire (SSB 04/2006), and Fishing Vessel Modifications Form which enable operators to identify the criteria which will trigger a stability assessment. A stability assessment is achieved by means of an inclining experiment, which has to be conducted by a naval architect. Please contact the nearest Transport Canada office if you need to determine whether your vessel requires one.

In 2008, TC issued SSB 01/2008, which sets out a voluntary record of modifications for the benefit of owners/masters of any fishing vessels. For vessels of more than 15 gross tons, the record of modifications was to be reviewed by TC inspectors during regular inspections and entered on the vessel's inspection record. However, information gathered during the Transportation Safety Board's (TSB) Safety Issues Investigation into the fishing industry showed minimal recording of vessel modifications prior to this date.

The TSB has investigated several fishing vessel accidents since 2002 and found that vessel modifications and loading of traps have been identified as contributing factors in vessel capsizings. Such as: M02W0102 - *Fritzi-Ann*, M05W0110 - *Morning Sunrise*, M07M0088 - *Big Sisters*, M08W0189 - *Love and Anarchy*, M09L0074 – *Le Marsouin I*, M10M0014 - *Craig and Justin.* In 2012 two prawn fishing vessels in BC, *Jessie G* and *Pacific Siren* both capsized with prawn traps on deck and are currently under investigation.

Vessel masters are advised to carefully consider stability when transporting gear. Care must be given to the stowage and securing of all traps, cargo, skiffs, equipment, fuel containers, and supplies, and also to correct ballasting. Know the limitations of your vessel; if you are unsure contact a reputable marine surveyor or the local Transport Canada Marine Safety office.

1.2 Emergency Drill Requirements

The Canada Shipping Act 2001 requires that the Authorized Representative of a Canadian Vessel shall develop procedures for the safe operation of the vessel and for dealing with emergencies. The Act also requires that crew and passengers receive safety training. The Marine Personnel Regulations require that all personnel on board required to meet the minimum safe manning levels have received MED (Marine Emergency Duties) training to an A1 or A3 level, depending on the vessel's voyage limits, within 6 months of serving aboard. MED A3 training is 8 hours in duration and is applicable to seafarers on fishing vessels less than 150 GRT that are within 25 miles from shore (NC2). MED A1 training is 19.5 hours duration and is applicable to all other fishing vessels.

MED provides a basic understanding of the hazards associated with the marine environment; the prevention of shipboard incidents; raising and reacting to alarms; fire and abandonment situations; and the skills necessary for survival and rescue.

1.3 Cold Water Immersion

Drowning is the number one cause of death in B.C.'s fishing industry. Cold water is defined as water below 25 degrees Celsius, but the greatest effects occur below 15 degrees. BC waters are usually below 15 degrees. The effects of cold water on the body occur in four stages: cold shock, swimming failure, hypothermia and post-rescue collapse. Know what to do to prevent you or your crew from falling into the water and what to do if that occurs. More information is available in the WorkSafe Bulletin *Cold Water Immersion* (available from the WorkSafeBC website at www.worksafebc.com).

1.4 Other Issues

1.4.1 Weather

Vessel owners and masters are reminded of the importance of paying close attention to current weather treads and forecasts during the voyage. Marine weather information and forecasts can be obtained on VHF channels 21B, Wx1, Wx2, Wx3, or Wx4. Weather information is also available from Environment Canada website at:

http://www.weatheroffice.gc.ca/marine/index_e.html

1.4.2 Emergency Radio Procedures

Vessel owners and masters should ensure that all crew are able to activate the Search and Rescue (SAR) system early rather than later by contacting the Canadian Coast Guard (CCG). It is strongly recommended that all fish harvesters carry a registered 406 MHz Emergency Position Indicating Radio Beacon (EPIRB). These beacons should be registered with the National Search and Rescue secretariat. When activated, an EPIRB transmits a distress call that is picked up or relayed by satellites and transmitted via land earth stations to the Joint Rescue Co-ordination Centre (JRCC), which will task and co-ordinate rescue resources.

Fish harvesters should monitor VHF channel 16 or MF 2182 Khz and make themselves and their crews familiar with other radio frequencies. All crew should know how to make a distress call and should obtain their restricted operator certificate from Industry Canada. However, whenever possible, masters should contact the nearest Canadian Coast Guard (CCG) Marine Communications and Traffic Services (MCTS) station (on VHF channel 16 or MF 2182 kHz) prior to a distress situation developing. Correct radio procedures are important for communications in an emergency. Incorrect or misunderstood communications may hinder a rescue response.

Since August 1, 2003 all commercial vessels greater than 20 metres in length are required to carry a Class D VHF Digital Selective Calling (DSC) radio. A registered DSC VHF radio has the capability to alert other DSC equipped vessels in your immediate area and MCTS that your vessel is in distress. Masters should be aware that they should register their DSC radios with Industry Canada to obtain a Marine Mobile Services Identity (MMSI) number or the automatic distress calling feature of the radio may not work. For further information see the Coast Guard website at: http://www.ccg-gcc.gc.ca/e0003845

A DSC radio that is connected to a GPS unit will also automatically include your vessel's current position in the distress message. More detailed information on MCTS and DSC can be obtained by contacting a local Coast Guard MCTS centre (located in Vancouver**,**

Victoria**,** Prince Rupert**,** Comox and Tofino**)** or from the Coast Guard website: www.pacific.ccg-gcc.gc.ca

1.4.3 Collision Regulations

Fish harvesters must be knowledgeable of the *Collision Regulations* and the responsibilities between vessels where risk of collision exists. Navigation lights must be kept in good working order and must be displayed from sunset to sunrise and during all times of restricted visibility. To help reduce the potential for collision or close quarters situations which may also result in the loss of fishing gear, fish harvesters are encouraged to monitor the appropriate local Vessel Traffic Services (VTS) VHF channel, when travelling or fishing near shipping lanes or other areas frequented by large commercial vessels. Vessels required to participate in VTS include:

a) every ship twenty metres or more in length,
b) every ship engaged in towing or pushing any vessel or object, other than fishing gear,
c) where the combined length of the ship and any vessel or object towed or pushed by the ship is forty five metres or more in length; or
d) where the length of the vessel or object being towed or pushed by the ship is twenty metres or more in length.

Exceptions include:

a) a ship towing or pushing inside a log booming ground,
b) a pleasure yacht *less than* 30 metres in length, and
c) a fishing vessel that is *less than* 24 metres in length and not *more than* 150 tons gross.

More detailed information on VTS can be obtained by calling (604) 775-8862 or from the Coast Guard website: http://www.ccg-gcc.gc.ca/e0003901

1.4.4 Buddy System

Fish harvesters are encouraged to use the buddy system when transiting, and fishing as this allows for the ability to provide mutual aid. An important trip consideration is the use of a sail plan which includes the particulars of the vessel, crew and voyage. The sail plan should be left with a responsible person on shore or filed with the local MCTS. After leaving port the fish harvester should contact the holder of the sail plan daily or as per another schedule. The sail plan should ensure notification to JRCC when communication is not maintained which might indicate your vessel is in distress. Be sure to cancel the sail plan upon completion of the voyage.

1.5 Fish Safe BC

Fish Safe encourages Vessel masters and crew to take ownership of fishing vessel safety. Through this industry driven and funded program Fish Safe provides fishing relevant tools and programs to assist fishermen in this goal. The Fish Safe Stability Education Course is available to all fishermen who want to improve their understanding of stability and find practical application to their vessel's operation. The Safe on the Wheel Course

is designed to equip crewmen with the skills they need to safely navigate during their wheel watch. The Safest Catch Program along with fishermen trained Safety Advisors is designed to give fishermen the tools they need to create a vessel specific safety management system.

Fish Safe is managed by Gina McKay, Project Coordinator John Krgovich, Program Assistant, Dionne Riley, and fishermen Safety Advisors. All activities and program development is directed by the Fish Safe Advisory Committee (membership is open to all interested in improving safety on board). The advisory committee meets quarterly to discuss safety issues and give direction to Fish Safe in the development of education and tools for fish harvesters.

Fish Safe also works closely with WorkSafe BC to improve the fishing injury claims process. For further information, contact:

Gina McKay	Phone: 604-261-9700
Program Manager	Cell: 604-339-3969
Fish Safe	Fax: 604-275-7140
#2, 11771 Horseshoe Way	Email: fishsafe@fishsafebc.com
Richmond, BC V7A 4V4	http://www.fishsafebc.com

2. WorkSafeBC

Commercial fishing is legislated by the requirements for diving, fishing and other marine operations found in Part 24 of the Occupational Health and Safety Regulation (OHSR). Many general hazard sections of the OHSR also apply. For example, Part 8: Personal Protective Clothing and Equipment addresses issues related to safety headgear, safety foot wear and personal floatation devices. Part 15 addresses issues on rigging, Part 5 addresses issues of exposure to chemical and biological substances, and Part 3 addresses training of young and new workers, first aid, and accident investigation issues. Part 3 of the Workers Compensation Act (WCA) defines the roles and responsibilities of owners, employers, supervisors and workers. The OHSR and the WCA are available from the Provincial Crown Printers or by visiting the WorkSafeBC website: www.worksafebc.com

For further information, contact an Occupational Safety Officer:

Shane Neifer - Terrace	(250) 615-6640
Bruce Logan - Lower Mainland	(604) 244-6477
Wayne Tracey - Lower Mainland	(604) 232-1960
David Clarabut - Victoria	(250) 881-3469
Pat Olsen - Courtenay	(250) 334-8777
Mark Lunny - Courtenay	(250) 334-8732

or the Manager of Interest for Fishing, Mike Ross (250) 881-3419.

For information on projects related to commercial fishing contact Ellen Hanson (604) 233-4008 or Toll Free 1-888-621-7233 ext. 4008 or by email: Ellen.Hanson@worksafebc.com.

3. Transportation Safety Board

The Transportation Safety Board (TSB) is not a regulatory board. The TSB is an independent agency that investigates marine, pipeline, railway and aviation transportation occurrences to determine the underlying risks and contributing factors. Its sole aim is the advancement of transportation safety by reporting publicly through Accident Investigation Reports or Marine Safety Information Letters or Advisors. It is not the function of the Board to assign fault or determine civil or criminal liability. Under the TSB Act all information collected during an investigation is completely confidential.

In 2012, the TSB released the results of a three-year investigation into fishing safety in Canada. This report identifies 10 key factors and makes several suggestions to address the problems that persist throughout the industry.

For more information about the TSB, visit our website at http://www.tsb.gc.ca. For information about the TSB's investigation into fishing safety, or to view a brief video, visit http://www.tsb.gc.ca/eng/medias-media/videos/marine/m09z0001/index.asp.

To view a brief video about some of the issues on the TSB's recent safety Watchlist, visit: http://www.tsb.gc.ca/eng/medias-media/photos/index.asp.

Reporting an Occurrence - TSB 1808 Form
After a reportable occurrence happens you can fill out the TSB 1808 Form or call the TSB at the contact information below.

Glenn Budden, Investigator, Marine - Fishing Vessels
Transportation Safety Board of Canada
4 - 3071 No. 5 Road
Richmond, BC, V6X 2T4
Telephone: 604-666-2712
Cell: 604-619-6090
Email: glenn.budden@tsb.gc.ca

3 APPENDIX 3: ROCKFISH CONSERVATION AREAS

A total of 164 Rockfish Conservation Areas (RCAs) have been implemented coast wide to protect inshore rockfish species (which include yelloweye, quillback, copper, china and tiger). With the onset of the Rockfish Conservation Strategy, the Department announced that it would create closed areas that encompassed up to 50% of the rockfish habitat within the Strait of Georgia and up to 20% on the West Coast of Vancouver Island, Central Coast, North Coast and the Queen Charlotte Islands.

Beginning in September 2005, Fisheries and Oceans Canada carried out further consultation to identify potential rockfish conservation areas within the Strait of Georgia. Additional RCAs have now been established within the Strait of Georgia. Upon completion of the closed area component of the strategy, 20% of outside rockfish habitat will have been described as RCA's. The goal for the Strait of Georgia is 30%.

Descriptions including maps of the RCAs can be found online at:
http://www.pac.dfo-mpo.gc.ca/fm-gp/maps-cartes/rca-acs/index-eng.htm
or check with your local Fisheries and Oceans Canada office for more information.

Permitted Fishing Activity in Rockfish Conservation Areas

The following fishing activities **will be permitted** in RCAs:

RECREATIONAL	COMMERCIAL
Invertebrates by hand picking or dive	Invertebrates by hand picking or dive
Crab by trap	Crab by trap
Prawn by trap	Prawn by trap
Smelt by gill net	Scallops by trawl
	Salmon by seine or gill net
	Herring by gill net, seine and spawn-on-kelp
	Sardine by gill net, seine and trap
	Smelt by gill net
	Euphausid (krill) by mid-water trawl
	Opal Squid by seine
	Groundfish by mid-water trawl

Recreational and commercial fishing activities not listed in the tables above are not permitted.

First Nations are encouraged to employ fishing methods or fish in locations to avoid the harvest of inshore rockfish. First Nations fishing for food, social and ceremonial purposes is permitted in RCAs.

4 APPENDIX 4: POST-SEASON REVIEW 2012

4.1 Conservation / Sustainability Objectives

The objectives shown in bold below are the wording from the 2012/13 Integrated Fisheries Management Plan.

4.1.1 Lower Strait of Georgia Chinook

The objective for Lower Strait of Georgia (LGS) chinook in 2012 is to reduce fishery exploitation in known areas of significant impact.

Chinook returns to many LGS systems have been declining since the late 1990's and continue to be at low levels. For the Cowichan River, the PSC indicator for LGS wild fall chinook, the preliminary 2012 return was similar to 2010 and 2011, with escapements up from the extremely low levels in 2005-2009. The 2012 adult escapement 3,331 chinook, including 2,668 natural adult spawners and 663 retained for hatchery broodstock. The total jack return was 1,092, including 1,062 natural spawners 30 retained for broodstock. The escapement goal for the Cowichan River is 6,500 natural adult spawners.

The overall exploitation rate estimated for 2012 was 62.8%, of which 56.6% was in Canadian and 6.2% in United States fisheries. The average Canadian exploitation rate was 53.0% from 2000 to 2011. It should be noted that the estimated number of CWT tags used for the analyses was 3,352 compared to 1,948 in 2011.

4.1.2 Interior Fraser River, Lower Fraser and Strait of Georgia coho

The objective for Interior Fraser River coho (including Thompson River coho) is to limit the Canadian exploitation rate to 3% (not including terminal harvest on systems experiencing strong escapements).

The preliminary estimate for the total exploitation of southern BC fisheries on Interior Fraser coho for 2012 is 1.3%. The total abundance of coho salmon originating from the Interior Fraser River Watershed, upstream of Hell's Gate, and including the Thompson River watershed, in 2012 was approximately 62,200. The total spawning escapement of coho salmon originating from the Interior Fraser was 54,800. The abundance of coho from the Interior Fraser in 2012 was higher than the abundance observed in 2011 (29,500), and approximately 2.25 times the brood year abundance of 24,300.

The geometric mean of spawning escapement over the last three years is approximately 36,800. This value above the lower threshold escapement of 25,000 average spawners suggested in the IFR Coho Recovery Strategy to ensure that genetic integrity and demographic concerns are maintained in the entire Management Unit.

4.1.3 Cultus Lake and Late Run Sockeye

The objective for Cultus Lake and Late Run Sockeye was to manage within the constraints of the exploitation rate identified by the Late Run aggregate. Please see section 5.1.6 for more details.

In 2012 Cultus Lake Sockeye were managed within the constraints of the exploitation rate identified for the Late Run aggregate. The maximum allowable exploitation rate for Cultus Lake Sockeye would be the greater of a) the exploitation rate floor identified for Late Run Sockeye (currently set at 20%), or b) the exploitation rate that is consistent with continued rebuilding of the population based on in-season information on returns and potential numbers of effective spawners. The exploitation rate on Cultus Lake Sockeye was intended to allow for fisheries on more abundant co-migrating stocks.

The preliminary post-season exploitation rate estimate for Cultus Lake sockeye is 19%. This estimate may change dependent on post season run size assessment evaluations. The preliminary escapement estimate to the Sweltzer fence of 1,153 Cultus Lake sockeye (889 through the fence plus 264 kept for broodstock) is over two times the 2008 brood year escapement of 519 (360 through the fence plus 159 broodstock).

4.1.4 Sakinaw Lake Sockeye

The objective for Sakinaw Lake sockeye is to stop their decline and re-establish a self-sustaining, naturally spawning population.

This objective will not be achieved until spawner abundance relative to previous brood years increases for at least 3 out of 4 consecutive years and there are no fewer than 500 natural spawners annually.

A preliminary estimate of 244 sockeye returned in 2012 from the second large captive brood based fry release in 2009 of 726,000. This group successfully located the historic spawning beaches.

The 726,000 fry release in 2009 was followed by releases of 329,000 (2010), 1,369,000 (2011) and 963,000 (2012).

4.1.5 WCVI Wild Chinook

The objective for West Coast of Vancouver Island (WCVI) chinook is to manage Canadian ocean fisheries (*specifically northern troll, QCI sport, WCVI troll and WCVI sport*) to an exploitation rate of 10%. The objective for North Coast chinook is to manage in accordance with the allocation policy, and to manage the northern troll fishery to a WCVI chinook exploitation rate of 3.2%.

Management actions continued in 2012 for WCVI chinook. Exploitation rates are determined post-season from Coded Wire Tag (CWT) data gathered from these fisheries. The exploitation rate limit includes chinook kept, as well as an estimate of fishing related mortalities of released fish.

As in past years, the North Coast troll fishery was monitored in-season using DNA-derived estimates of stock composition and closed when the composition of WCVI origin chinook in the catch was estimated to be at the limit of 3.2%.

The North Coast recreational fishery exploitation rate includes the impacts by the QCI sport fishery (Area 1 and 2W) and Central Coast recreational fisheries.

The time and area management actions for the WCVI troll fishery are designed to maintain negligible impact on returning natural WCVI chinook stocks. The WCVI troll fishery was closed in June and July and during openings in the latter part of August, and in September and October a partial closure of near shore areas of Areas 123 to 127 was implemented to allow a migration corridor for WCVI origin chinook. A limited Area G troll plug fishery occurred in August and the fishery was designed to avoid WCVI origin chinook by restricting fishing to offshore areas.

Size limit and harvest restrictions were in place for the WCVI recreational fishery from July 15 to September 1 (NWVI) and August 1 to September 15 (SWVI) to protect returning WCVI origin chinook stocks. Additional conservation measures included the '2 chinook per day under 77 cm maximum size limit', imposed within the 1-mile surfline corridor of the near-shore WCVI to protect the large female WCVI origin chinook. In more terminal in-shore areas, conservation measures included a combination of maximum size limits, chinook non-retention areas and finfish closures depending on the level of concern for local stocks.

2012 salmon escapement estimates from extensively surveyed WCVI streams are preliminary. Observations indicate escapement to both SWVI and NWVI systems remain well below average with the exception of Area 27 streams which are at about the recent year average. In particular, escapements to Clayoquot Sound (Area 24) remain very low. In two un-enhanced systems in Clayoquot Sound (Megin and Bedwell-Ursus) less than 50 spawners were observed. There was some improvement to the Nahmint River (Area 23) possibly resulting from enhancement efforts in the 2006 brood year.

The post-season exploitation rate estimate for Canadian ocean fisheries (North Coast troll, North Coast sport, WCVI troll and WCVI sport combined) in 2012 is 14.6%, down from 2011 at 18.9%.. The United States ocean fisheries exploitation rate was 20.6% in 2012, slightly higher than in 2011 at 19.0%.

Since 2000, the Canadian fisheries exploitation rate has varied from 3.0% to 18.9% averaging 12.6%. The majority of the impact on WCVI origin chinook is by the North Coast sport fishery (average exploitation rate of 9.8% since 2000).

4.1.6 Interior Fraser River Steelhead

The objective for Interior Fraser River steelhead is to minimize the impact of Canadian fisheries and to increase spawner abundance.

Returns of chum to Southern BC were strong in 2012, resulting in chum-directed fisheries. Commercial chum fisheries occurred in Johnstone Strait and in many terminal areas on Vancouver Island. Additionally, very strong returns of chum were observed from early in the season within the Fraser River, triggering FSC, commercial, and recreational chum fisheries. Sockeye returns to the Fraser River were below levels required to initiate commercial fisheries, but numerous FSC openings occurred from late July through late August. There were no pink fisheries in the Fraser River and approach areas in 2012.

The combined effect of the 2012 fishing pattern produced a reduction in overall impacts on Interior Fraser Steelhead relative to those observed in 2011, when commercial fisheries for Fraser pink and chum salmon took place through late August and into September. Simulation results suggest that the fishing mortality was lower in 2012 compared to 2011 with impacts concentrated on the peak and latter parts of the run. The estimated fishing mortality in 2012 of 12% is among the lowest observed since the mid-1980's. This mortality rate accounts for all fisheries and includes the effect of the sport fishery which had areas and times open in 2012.

Because Interior Fraser Steelhead typically spawn in the spring following the fishing season, escapement estimates for the 2012/2013 Interior Fraser steelhead return are not yet available. However, an in-season forecast of spawner abundance (provided November 27th, 2012) indicated there was a 70% chance that the target escapement to the Thompson and Chilcotin River steelhead groups of more than 1,250 fish would be met. The forecast also suggested that the 2012/2013 return was greater than what had been observed in the previous three seasons (see Figure 4-1 below). A final update from the Province of BC is expected in the summer of 2013 to report on spawning population estimates and fishing mortality rate trends for this season's return.

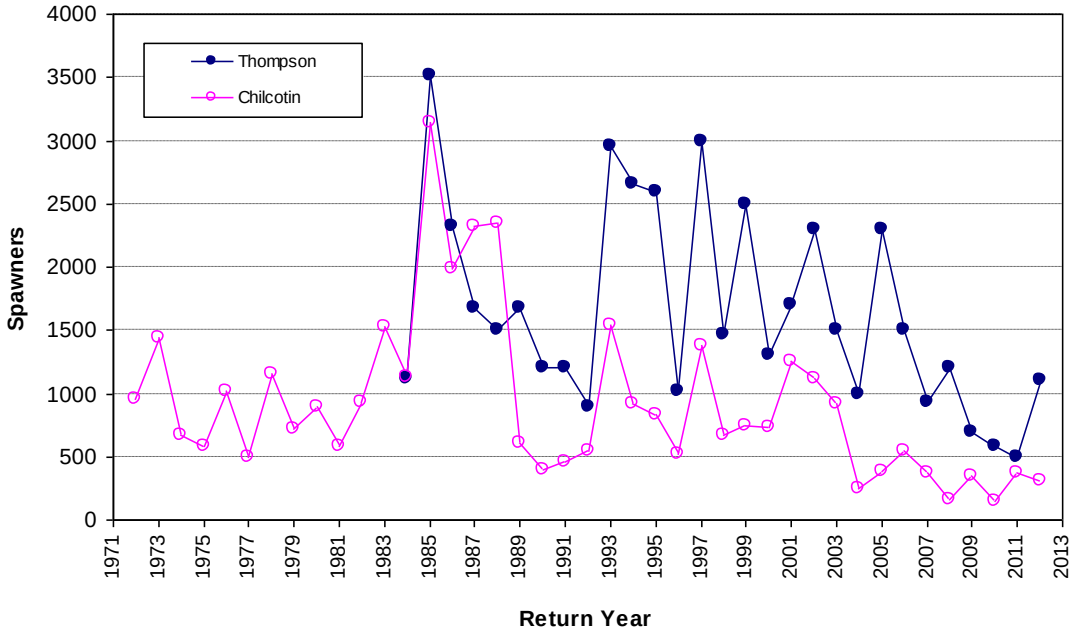


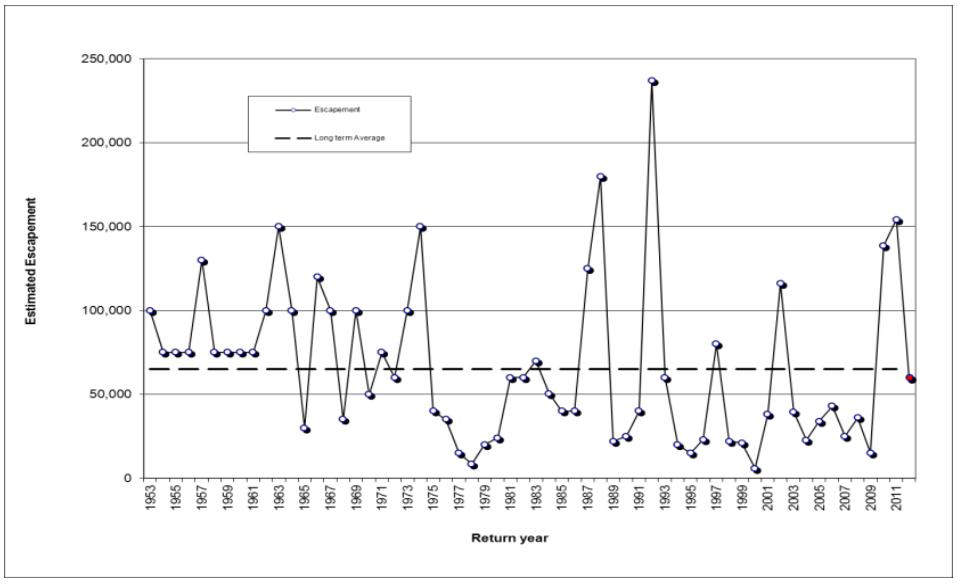
Figure 4-1. Historic trend of Interior Fraser Steelhead spawner abundance

4.1.7 Nimpkish Sockeye

The objective is to minimize the impact of Canadian fisheries.

In 2012, there were no directed Fraser River sockeye commercial or recreational fisheries in Johnstone Strait. In 2012, the Nimpkish sockeye return (Figure 4-2) continued to see improvements over brood-year. The estimated escapement in 2012 was close to average escapement (60k).

Figure 4-2: Historic trend of Nimpkish River sockeye escapement



4.1.8 Fraser Spring 4_2 Chinook

The objective for Fraser Spring 4_2 chinook is to conserve these populations by continuing to minimize incidental harvests in Canadian ocean fisheries. For directed fisheries in the Fraser River, the objective is to minimize directed harvests of Spring 4_2 chinook until July 15th. Fisheries beginning July 15th will be managed consistent with the management zone identified for Spring 5_2 and Summer 5_2 Fraser chinook given timing overlaps between these populations for much of the adult migration period.

Since 2008, fisheries management actions have been implemented to protect the earliest arriving component of Fraser Spring chinook. Prior to 2010, this group of stocks was referred to as the "Early-timed spring chinook". The same populations are now managed domestically under the umbrella of the Fraser Spring 4_2 and Fraser Spring 5_2 chinook management units - classifications which have been used for many years in the Pacific Salmon Treaty process.

In 2012 specific fishery management actions were implemented to protect the Spring 4_2 chinook management unit. The evaluation of these actions is based, in part, on the exploitation rate analysis provided by fishery for CTC indicator stocks. This annual analysis uses coded-wire tag (CWT) recoveries from indicator stocks to represent the impacts on all stocks within the management unit. The CWT indicator stock for the Spring 4_2 management unit is Nicola River.

The percentage of the Nicola indicator stock that returned as escapement in 2012 is not available at time of printing.

The spawner abundance for the aggregate (excluding Bonaparte) was approximately 7,300 chinook compared with 6,100 in the brood year. The escapement estimate for the Nicola indicator stock was 4,750.

4.1.9 Fraser Spring 5_2 and Summer 5_2 Chinook

The objective for Fraser Spring 5_2 and Summer (age 5_2) chinook is to conserve these populations consistent with the management zones. (2012 objective)

The abundance of Spring and Summer 5_2 chinook returning to the Fraser River is estimated in-season based on chinook catch observed in the Albion test fishery. Last year, the combined Spring and Summer 5_2 aggregate terminal run size was estimated at 42,730, chinook (95% PI: 26,000 to 71,000). This estimate, provided on June 18th, resulted in a Zone 2 management approach. The preliminary 2012 spawning escapement, as enumerated using various stock assessment techniques, was approximately 21,800 chinook; a decrease from the 2007 brood year spawning escapement of 22,300. The post-season terminal run estimate was 35,300 (based on outputs from the Fraser River Run Reconstruction model). Estimates of exploitation rates are not available for these populations as there are no recent CWT indicators for these management units.

4.1.10 Inshore Rockfish

The management objective for inshore rockfish species (which include yelloweye, quillback, copper, china and tiger) **is to introduce conservation strategies that will ensure stock rebuilding over time. A fishing mortality rate of less than 2.0 percent (all Pacific Region fisheries) will be required to achieve this objective.**

To ensure stock rebuilding over time, Rockfish Conservation Areas (RCA's, no fishing zones for gear that impact on rockfish), have been implemented within the Strait of Georgia and in all outside waters including the Queen Charlotte Islands. The conservation strategy for rockfish along the coast of British Columbia is long term. Rockfish are a long-lived species with a low level of productivity and therefore rebuilding will take several decades.

First Nations are encouraged to employ fishing methods or fish in locations to avoid the harvest of inshore rockfish. First Nations fishing for food, social and ceremonial purposes is permitted in RCAs.

4.2 First Nation Objectives

The objective is to manage fisheries to ensure that, after conservation needs are met, First Nations' food, social and ceremonial requirements and treaty obligations to First Nations have first priority in salmon allocations in accordance with the *Allocation Policy for Pacific Salmon*.

Opportunities for First Nations FSC fisheries in the South Coast and Fraser River in 2012 were available for most salmon stocks. As in recent years restrictions were implemented to protect 90% of the Early Stuart component of the Fraser River sockeye return through a series of window closures.

Restrictions were also in place to protect Spring and Summer run Fraser chinook, Interior Fraser River coho, Sakinaw Lake and Nimpkish River sockeye, Interior Fraser River steelhead and to minimize impacts upon WCVI chinook and Lower Strait of Georgia chinook. Closures to protect Interior Fraser River coho also benefited lower Fraser coho which were also a stock of concern.

In total, First Nations food, social, and ceremonial fisheries and Treaty domestic fisheries harvested approximately 434,845 sockeye in the Fraser River watershed and 44,099 Fraser River sockeye in marine waters (Johnstone Strait, Strait of Georgia and Area 20).

In addition to sockeye, First Nations had opportunities to harvest chinook and coho as well as chum salmon (utilizing both gill nets and selective gear in the Fraser River). In the Fraser River watershed there were approximately 27,037 chinook, 30,374 chum, 2 pink and 941 coho harvested for FSC purposes. In marine waters there were approximately 8,055 chinook, 21,935 chum, 7,464 pink and 10,379 coho harvested.

4.3 Recreational and Commercial Objectives

The objective is to manage fisheries for sustainable benefits consistent with established policies.

The primary objective in the recreational fishery to maintain the expectation and opportunity to catch fish in a stable manner was achieved. In the commercial fishery, the objective to improve the economic performance of fisheries so that they can reach their full potential, to provide certainty to participants, and to optimize harvest opportunities was achieved due to generally higher than forecast levels on some stocks..

4.4 International Objectives

The objective is to manage Canadian treaty fisheries to ensure that obligations within the Pacific Salmon Treaty (PST) are achieved.

Review and performance of the PST provisions for sockeye, coho, chum and chinook salmon occur annually at bilateral meetings. Results of the meetings are published in the annual post-season reports available from the Pacific Salmon Commission (PSC). More information is available on the PSC website at: http://www.psc.org/index.htm

4.5 Domestic Allocation Objectives

The objective is to manage fisheries in a manner that is consistent with the *Allocation Policy for Pacific Salmon* and the 2012 Pacific Salmon Commercial Allocation Implementation Plan.

While fisheries were managed to address conservation objectives, they were generally conducted in a manner consistent with the Allocation Policy for Pacific Salmon.

The pre-season commercial salmon allocation plan for 2012 resulted in projected coast-wide salmon shares as follows: seine 24.3%, gill net 24.4% and 51.3% troll. Analyses indicate that what was achieved in 2012 was 26% seine, 38% gill net and 36% troll.

4.6 Compliance Management Objectives

At the end of each season, statistics are compiled on the numbers of checks conducted from various platforms (vessel, vehicle and foot), and the number of charges resulting from these checks and others. Using this information, staff can evaluate whether compliance management objectives were met and whether the activities undertaken were effective. Overall compliance rates for each area and fishery are calculated to help identify priority areas for enforcement in subsequent seasons. In addition, valuable narrative data is collected to ensure problem areas are identified and addressed.

4.7 Enhancement Objectives

The Salmonid Enhancement Program (SEP) enhances chinook, chum, coho, pink, and

sockeye salmon at the population level throughout the Pacific Region by responding to local, regional and international production objectives that aim to recover or rebuild populations or provide targeted harvest opportunities.

Refer to the link below for information regarding 2012 brood enhancement production: http://www.pac.dfo-mpo.gc.ca/sep-pmvs/index-eng.htm

5 APPENDIX 5: SOUTHERN B.C. / FRASER RIVER FIRST NATIONS FISHING PLAN

5.1 Catch Monitoring and Reporting Initiatives

5.1.1 First Nations Electronic Reporting System

Since the year 2000, Fisheries and Oceans Canada have been working with First Nations groups to design and develop electronic recording and reporting systems for First Nations FSC catch data. The personal computer (PC) based software has incorporated recommendations from numerous First Nations members and is based on their reporting requirements within their communities and those required by the Department. The application also has a licensing system, allowing First Nations to track FSC catch and other fishing information for their members.

The ultimate goal of this initiative is to improve the efficiency and accuracy of reporting FSC catch and other fishing information to the Department.

Since its beginnings this program has expanded to other interested First Nations group within the Pacific Region, including the B.C. Interior area, South Coast and the Central Coast. Approximately 34 First Nations groups have employed this software application.

For more information please contact Ron Goruk at 250-756-7392, Carmen McConnell at 250-756-7272.

5.1.2 Improving Coded Wire Tag (CWT) sampling of FSC fisheries

Historically, First Nations FSC fisheries that intercept chinook and/or Coho indicator stocks have been inconsistently or inadequately sampled for CWTs and adipose-clip mark rate. This is a serious concern because it generates unknown bias for cohort analyses and implementation of PST management regimes for chinook and coho salmon. These circumstances were flagged in a review by the Pacific Salmon Commission (PSC) as parts of the CWT program that needed improvement.

In 2009, the PSC began a CWT improvement program in Canada and the USA. The Coded Wire Tag Improvement Team (CWTIT) examined the PSC recommendations and initiated projects to improve the CWT program, including tagging programs, fishery sampling, escapement sampling, and data management designed to meet CWT analytical

standards. Among First Nation FSC fisheries, projects began in the Fraser, Bella Coola, Cowichan, and Big Qualicum rivers, the Alberni Inlet, and the BC Interior (BCI).

For the Lower Fraser River, this funding has supported a collaborative project between the Lower Fraser Fisheries Alliance (LFFA) and the Department focussing on communication, education and technical support. Over the course of this project there has been an increase in the number of snout and head samples obtained from the FSC fisheries. The project will continue for the 2013 fishing season to build on the increased head submissions and will have a specific focus on improving the quality of adipose-clip mark rate data. In the BC Interior, sampling was introduced in the mid-Fraser River (above Sawmill Creek to Lytton), Little Shuswap Lake, Lower Shuswap River and Middle Shuswap River and CWTs were recovered at all locations with the exception of the mid-Fraser River.

Projects outside of the Fraser River have had mixed success. The Bella Coola program has been very successful with large numbers of CWT recoveries and high quality catch estimates generated annually. In comparison, the Cowichan River program has had low numbers of CWT recoveries annually and the quality of the catch data can be improved, the Alberni Inlet program has been successful, and the Big Qualicum River program has had low numbers of CWT recoveries.

5.2 Specific Conservation Measures

5.2.1 Lower Strait of Georgia chinook

Protective measures may be considered in terminal areas to reduce harvest impacts. Potential measures will be the subject of discussion with First Nation communities prior to development of the fishing plan.

5.2.2 West Coast of Vancouver Island Chinook

Protective measures may be considered in terminal areas, particularly Area 24, to reduce harvest impacts. Potential measures will be the subject of discussion with First Nation communities prior to development of the fishing plan.

5.2.3 Interior Fraser River, Lower Fraser and Strait of Georgia coho

Historical coded wire tag (CWT) data and DNA sampling indicate that Thompson and upper Fraser River coho are present in the lower Fraser River from late-August until mid-October. During the following period's closures and / or very limited, selective and experimental fisheries will be implemented in portions of the Fraser River to protect Thompson and upper Fraser River coho:

Subareas 29-6, -7, -9 & -10	September 3 to October 4
Fraser River - Below Mission	September 3 to October 4
Fraser River - Mission to Hope	September 5 to October 7
Fraser River - Hope to Sawmill Creek	September 7 to October 12

Fraser River - Sawmill Creek to Lytton September 16 to December 31
Fraser River - Lytton to Williams Lake September 23 to December 31
Fraser River - Upstream of Williams Lake October 1 to December 31
Thompson River –
Downstream of the confluence of the North and South Thompson Rivers
September 23 to December 31
Upstream of the confluence of the North and South Thompson Rivers
October 1 to December 31

Note: For the Thompson River, Department staff are consulting with First Nations on the specific closure dates and locations and minor adjustments may be made.

5.2.4 Early Stuart Sockeye

Based on the pre-season forecast, there may be minimal or no sockeye available for directed harvest. In order to conserve Early Stuart sockeye, management may need to focus on restricting all fisheries. Fishery implementation will depend upon the in-season assessment of run size, the conservation and harvest plan (developed through pre-season consultations) and the available TAC for this stock group.

In past years when there has been no TAC identified in-season, Early Stuart sockeye have been managed to avoid directed fisheries on 90% of the run using a closure window. See page 95 for the detailed table.

5.2.5 Early Summer Sockeye

The forecast return is predicted to be less than the 2013 cycle average run size. Specific plans will be confirmed as more pre-season information is made available. Harvest constraints may be required depending on the total allowable catch identified in-season for the Early Summer aggregate stock group. A request submitted by Lower Fraser First Nations to access Chilliwack Lake sockeye for FSC purposes is being reviewed.

5.2.6 Cultus Lake and Late Run Sockeye

There are expected to be restrictions and closures for fisheries that target Fraser River sockeye stocks throughout southern B.C. in order to afford protection to Cultus Lake and Late Run stocks. Management of Cultus Lake and Late Run sockeye will be based on the Cultus Lake sockeye management objective and an assessment of in-season information for the Late Run sockeye stock aggregate. Specific plans will be confirmed as more information is made available.

5.2.7 Sakinaw Lake Sockeye

Harvest related measures to ensure protection of Sakinaw Lake sockeye are expected to continue in 2013. These measures include restrictions in First Nations FSC fisheries prior to the last week of July in Johnstone Strait and until early to mid-August in the

northern Strait of Georgia. The waters near the mouth of Sakinaw Creek in Area 16 will be closed to fishing all season.

5.2.8 Nimpkish Sockeye

Harvest related measures continue to be required to minimize impacts on this stock. These measures include sockeye non-retention, in both First Nations FSC fisheries and recreational fisheries, occurring in Area 12 above Lewis Point until late July.

5.2.9 Fraser River Chinook

In the 2013 Salmon Outlook, Spring 4_2, Spring 5_2, Summer 5_2 chinook have been classified as *stocks of concern*. For Fraser Summer 4_1 chinook, the outlook is low/near target and will permit directed fisheries. The 2013 estimate of the terminal spawner abundance (i.e. after all ocean fisheries removals) for Harrison chinook will be provided in Section 7.3.3 after April 2013.

Management actions implemented in 2010 through 2012 to protect and conserve Fraser Spring 4_2 chinook in the Fraser River are planned to continue in 2013. These actions may include limited fisheries for unplanned events prior to mid-June and a delayed start and reduced fishing times for communal fisheries beginning mid June. Consideration is also being given to much smaller opportunities over this time period (April – June) to ensure the impact of the fishery is spread across the entire run. For the lower Fraser River, the management actions for Fraser Spring 4_2 chinook will be in place until July 15th. Management actions for Fraser Spring 4_2 chinook also provide additional protection for the Fraser Spring 5_2 and Summer 5_2 chinook as their migration timing overlaps significantly.

Given the poor pre-season outlook for Fraser Spring 5_2 and Summer 5_2 chinook, the Department is planning to begin the season with management actions based on returns being less than 45,000 (zone 1). The management zone may be updated in mid-June based on an in-season of the abundance of chinook at the Albion test fishery. See Section 5.1.4 for more info on management zones.

If required, Zone 1 management actions are intended to further reduce overall exploitation rates by 50% or more from the early 2000's on Spring 5_2 chinook while also providing additional protection to later timed Summer 5_2 chinook. Zone 1 management actions will include:

- Limited First Nations fisheries considered. Expected exploitation rates on Fraser Spring 5_2 and Summer 5_2 chinook reduced by at least 45% compared with the 2000 to 2006 period. Harvests of Spring 5_2 and Summer 5_2 chinook may occur during chinook-directed fisheries or as by-catch in sockeye-directed fisheries.
- Any commercial (including economic opportunity) net fisheries for Fraser sockeye are proposed to have chinook non-retention.

In the event that the Albion chinook test fishery indicates that Spring 5_2 and Summer 5_2 chinook returns to the Fraser River are larger than 45,000, the Department intends to implement management actions as identified for Zone 2 or 3 in Section 5.1.4.

For 2013, the Department is continuing to consult with First Nations on specific fishing plans for FSC fisheries.

First Nations are encouraged to employ fishing methods or fish in locations to avoid the harvest of inshore rockfish. First Nations fishing for FSC purposes is permitted in RCAs.

5.3 Communal Licence Harvest Amounts

First Nations access to salmon for FSC purposes is given effect through communal licences issued by DFO. These licences support the effective management and regulation of First Nations fisheries. These licences are typically issued to individual bands or tribal groupings, and describe the details of the FSC fishery including the dates, times, methods, locations of harvest. Communal licences for Southern Coastal First Nations are typically multi-species and are issued on an annual basis. Licences may also be amended for shorter durations. For in-river First Nations, licences are typically of shorter duration, and are issued to provide for specific First Nations' salmon fisheries openings.

Fisheries and Oceans Canada seeks to provide for the effective management and regulation of First Nations fisheries through the negotiation of mutually acceptable and time-limited Fisheries Agreements, frequently referred to as AFS agreements. Where agreement is reached, agreed-to fisheries provisions form the basis of the communal licence issued by DFO. Where agreement cannot be reached, Fisheries and Oceans Canada will nonetheless issue an Aboriginal communal fishing licence to the group based on DFO's best understanding of the group's Aboriginal fishery.

Harvest amounts for communal licences in the Fraser River and south coast of B.C. are outlined in Table 5-1 below. Actual opportunities and catches will be dependent on, among other factors; in-season stock strength, management measures taken to ensure conservation of individual stocks, community needs of First Nations, and alternative sources of salmon if preferred species are not available locally due to low abundance.

Table 5-1: Communal licence harvest amounts

	South Coast	Lower Fraser	Middle/Upper Fraser	Total
Sockeye				
Fraser River	256,800	449,000	300,000	1,009,000
Non-Fraser River	14,100**	0	20,000	34,100
Coho	43,500	0	1500*	44,500
Pink	60,000	125,000	500	185,500
Chum	155,000	72,000	500	227,500
Chinook	34,000	12,000	18,000	64,000
Total Salmon	572,000	658,000	340,500	1,550,500

*Note: Majority of harvest in mid/upper Fraser area is anticipated to occur from terminal systems experiencing strong escapements as identified using enumeration by counting fence methodology.
**Note: The 14,100 total non-Fraser Sockeye does not include MNA treaty allocation.

5.4 Aboriginal Commercial Fishing Opportunities

The AFS was implemented to address several objectives related to First Nations and their access to the resource. One of these objectives was to contribute to the economic self-sufficiency of Aboriginal communities. An integral component of the AFS is the Allocation Transfer Program (ATP). This Program facilitates the voluntary relinquishment of commercial licences and the issuance of licences to eligible Aboriginal groups in a manner that does not add to the existing fishing effort on the resource, thereby providing Aboriginal groups with much needed employment and income, and increasing participation in commercial fisheries as part of relationship-building with the Department. Since 1994-95, when the ATP was first launched and including PICFI, 504 commercial licences have been relinquished for Aboriginal groups.

Negotiations to provide economic opportunities to First Nations in Barkley Sound and the lower Fraser River will be undertaken as in recent years. Economic opportunity fisheries will be conducted under agreements that specify provisions for planning fisheries, allocations, catch reporting requirements as well as roles and responsibilities regarding the management of the fishery. All economic opportunity fisheries will be managed on the same priority as the commercial fishery. In the lower Fraser, DFO will work with First Nations and commercial harvesters to develop an approach to an integrated commercial fishery based on the principles of transparency, accountability and collaboration. Specific elements of this approach will include defined harvest shares, enhanced catch monitoring and compliance programs, some initial work on a traceability program and improved collaboration amongst harvesters.

Discussions regarding demonstration fisheries that will provide economic opportunities for First Nations and allow for experimentation and testing of inland fisheries are on-going with First Nations and stakeholders. For 2013, as in previous years, the focus with First Nations will be on experimenting mainly in terminal areas on abundant stocks. These fisheries will be conducted separately from FSC fisheries, under the same priority

and similar rules as the commercial fishery and fish harvested will be off-set with licences retired from the commercial fishery.

5.5 Demonstration Fisheries

The Department is considering the following commercial demonstration fisheries for 2013. Additional discussions are planned to develop the detailed plans for these fisheries.

5.5.1 2012 Ahousaht Plaintiffs Salmon Demonstration Fishery

In addition to fishing opportunities for FSC purposes, DFO acknowledges that, in its November 3, 2009, decision in *Ahousaht Indian Band et al. v. Canada and British Columbia*, the B.C. Supreme Court found that the plaintiffs (five Nuu-chah-nulth First Nations located on the West Coast of Vancouver Island; Ahousaht, Ehattesaht, Hesquiaht, Mowachaht/Muchalaht, and Tla-o-qui-aht) have what the Court recognized as "aboriginal rights to fish for any species of fish within their Fishing Territories and to sell that fish."

The B.C. Court of Appeal subsequently confirmed the B.C. Supreme Court decision, except that it found that the rights do not include geoduck, and it extended the period for consultation and negotiations to May 18, 2012.

Although the court ordered timeline for negotiations and consultations has expired the Department continues to work with the First Nations pursuant to the rights found by the Courts', to find "the manner in which the plaintiffs' rights can be accommodated and exercised without jeopardizing Canada's legislative objectives and societal interests in regulating the fishery."

The First Nations have proposed demonstration fisheries to "test-drive" potential fishing models that may be implemented pursuant to the Supreme Court decision. DFO has agreed to work toward the implementation of a salmon demonstration fishery for the 2013 fishing season. Discussions are on-going with the five First Nations. This will be the second year of the salmon demonstration fishery.

This demonstration fishery, as with other demonstration fisheries would provide access with a clearly defined allocation, likely to include harvest opportunities for WCVI AABM chinook and some terminal area WCVI salmon in 2013. It is anticipated that through this fishery the Department would attempt to accommodate Ahousaht Plantiffs First Nations' preferred means, including use of a range a vessel sizes, including small boats, and would demonstrate the effects and implications of such means.

A post-season evaluation of the 2012 demonstration fishery was conducted and will be conducted for the 2013 fishery.

5.5.2 RWS RiverFresh Wild Salmon Ltd – In-River Sockeye, Chinook and Pink Fisheries

RWS RiverFresh Wild Salmon Ltd (RiverFresh) is a Commercial Fishing Enterprise incorporated in September 2012 as a partnership between four Secwepemc communities of the Shuswap Nation Tribal Council. For 2013 the Secwepemc Fisheries Commission (SFC) will continue to function as the operational planning and business management team on behalf of RiverFresh. SFC has been coordinating demonstration fisheries and conducting business feasibility analyses since 2005. A PICFI business plan was approved by DFO in 2011/2012.

The 2013 SFC demonstration fisheries will build on previous year's experiences and address the following challenges:

- Improving catch efficiencies and controlling costs;
- Harvesting a larger percentage of the SFC's pink salmon allocation.

REGION - B.C. Interior

PARTICIPANTS – SFC and other partners to be determined.

LOCATION OF FISHERIES -

1. Chinook fishery – Kamloops Lake
2. Pink fishery – potential locations in the Fraser River main stem (to be determined). Continuation of feasibility work on harvesting ability to be conducted in Kamloops Lake, Thompson and Fraser Rivers
3. Sockeye fishery (dependant on commercial TAC being available in 2013) – Kamloops Lake, Thompson River (at Steelhead Park), potentially locations further upstream dependant on fish quality.

GEAR TYPE –

1. Chinook fishery – 8" mesh set gill net and troll
2. Pink fishery – beach seine and or purse seine
3. Sockeye fishery – Taken as by-catch in chinook or pink directed fisheries if small CCTAC available, if substantial CCTAC available, purse seine in Kamloops lake.

TIME FRAME - NOTE: All fishery time frames are estimates and final dates will be determined according to in-season migration timing information.

1. Chinook fishery – fishery will target on late summer South Thompson (4_1); potential start date is Sept. 3 ending Sept. 21 or when the coho closure comes into force. If an allocation is available, sockeye by-catch will be kept for commercial sale.

2. Pink fishery – Secwepemc Fisheries Commission (River Fresh) submitted a proposal to transfer shares of their pink CCTAC that they may be allocated for the 2013 season to the lower Fraser River area to be fished in conjunction with

opportunities of Lower River First Nations. The proposal is currently under review by the Department. The fishery will target peak migration of pink salmon in the Fraser River near Chilliwack. The potential start date is between early and mid-September, 2013. This fishery may only last for a few days. Feasibility work on Kamloops Lake and or Thompson and Fraser Rivers would occur from early September to mid-September. If an allocation is available, sockeye by-catch will be kept for commercial sale.

3. Sockeye fishery – fishery will potentially target Early Summer and Late Run Thompson sockeye; potential start date of Aug 15 for a six week fishery ending Sept. 30. Sockeye fishery would only occur if substantial CCTAC is available, smaller CCTAC would allow by-catch in chinook or pink directed fisheries

ALLOCATION –

1. Chinook fishery – chinook allocation for 2013 will be expressed as a percentage (%) share of Commercial Total Allowable Catch (CTAC) of Fraser chinook salmon as determined pre-season.
2. Sockeye Fishery - Sockeye allocation will be expressed as a percentage (%) share of Commercial Total Allowable Catch (CTAC) of Fraser sockeye in-season.
3. Pink fishery –allocation to be determined in-season but will be expressed as a percentage (%) share of Commercial Total Allowable Catch (CTAC) of Fraser pinks.

Note: The prospects for a commercial chinook harvest opportunity are tempered by the reduced Outlook for 2013. An average of South Thompson Stock Composition data from 2007 to 2012 of 31.88% is proposed to determine chinook CCTAC of 3,161 South Thompson chinook for 2013. If available, in-season assessment information may be used to consider whether there is sufficient abundance for commercial demonstration fisheries for South Thompson 4(1) chinook to proceed.

MONITORING PLAN –

1. Chinook fishery – will be monitored using designated landing sites, electronic log book system (ELOG) and independent validation of catch at the processing plant.
2. Pink fishery – will be monitored using observers, designated landing sites, electronic log book system (ELOG) and independent validation of catch at the processing plant.
3. Sockeye fishery – will be monitored using designated landing sites, electronic log book system (ELOG) and independent validation of catch at the processing plant.

CONTACTS –

DFO: Dale Michie, B.C. Interior PICFI Coordinator,
Phone: 250-851-4946
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SFC: Murray Ross, Director of Fisheries, Secwepemc Fisheries Commission
Phone: 778-471-8200
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5.5.3 Upper Fraser Fisheries Conservation Alliance (UFFCA) Partnership – In-River Sockeye Fisheries

The UFFCA developed a business plan to establish a Commercial Fishing Enterprise. Discussions are on-going with groups participating in the partnership based on the viability of individual fisheries in 2013. The 2013 demonstration fishery will build on previous years' experiences to implement successful fisheries and address constraints and challenges to harvesting allocations, marketing, processing and acquiring infrastructure required for the emerging inland fisheries.

REGION - B.C. Interior

PARTICIPANTS - UFFCA Partnership – Northern Shuswap Tribal Council (NSTC); Tsilhqot'in National Government (TNG)/Xeni Gwet'in First Nations Government; Carrier Sekani Tribal Council (CSTC); Lheidi T'enneh First Nation (LTFN)

1. North Shuswap Tribal Council;

Location:

a) Sockeye fishery – Quesnel River, Quesnel Lake, Chilcotin River and main stem Fraser. If an allocation is available, pink by-catch will be kept for commercial sale.

b) Pink fishery – potential locations in the Fraser River main stem (to be determined). Continuation of feasibility work on harvesting ability to be conducted in Fraser main stem near Williams Lake and Quesnel River. If an allocation is available, sockeye by-catch will be kept for commercial sale.

Gear Type: Sockeye fishery – Beach seine, purse seine and dip net Pink fishery – Beach seine

Time frame: Sockeye fishery will target Summer run (Quesnel / Chilko / Late Stuart / Nechako Rivers) sockeye. Potential start date of Aug 16 for a six week fishery ending Sept. 30, Pink fishery – September 20 – October 15

2. Tsilhqot'in National Gov't / Xeni'Gwet'in First Nations Government

Location: Sockeye fishery – Chilko River, Chilko Lake and Chilcotin River. If an allocation is available, pink by-catch will be kept for commercial sale.

Gear type: Seine, dip net, partial weir/fish trap, and purse seine

Time frame:

a) Sockeye fishery will target Summer run (Chilko) sockeye. Potential start date of Aug 16 for a three week fishery ending Sept 4.

3. Carrier Sekani Tribal Council and Lheidli T'enneh First Nation

Location: Sockeye fishery – Nechako River and or Stuart River

Gear type: Sockeye fishery – beach seine, dip net, partial weir/fish trap, and purse seine

Time frame

a) Sockeye fishery will target Summer run (Late Stuart/Nechako) sockeye. Potential start date of Aug 15 for a four week fishery ending Sept. 15.

NOTE: All fishery time frames are estimates and final dates will be determined based on in-season migration timing and abundance information.

ALLOCATION – All

1. Sockeye fishery – allocation to be determined but will be expressed as a percentage (%) share of Commercial Total Allowable Catch (CTAC) of Fraser sockeye stocks in the area.
2. Pink fishery – allocation to be determined in-season but will be expressed as a percentage (%) share of Commercial Total Allowable Catch (CTAC) of Fraser pinks.

Note: The Upper Fraser Fisheries Conservation Alliance in conjunction with the Inland Salmon Producers Association submitted a discussion paper requesting the ability to transfer shares of pink Salmon that they may be provided in 2013. The request is to transfer UFFCA Pink CCTAC to be harvested in the lower river with options for First Nation or Commercial sectors in marine areas. This discussion paper is currently under review by the Department.

MONITORING PLAN – All

1. Sockeye fishery will be monitored using designated landing sites, electronic log book system (ELOG) and independent validation of catch at either landing site or plant.
2. Pink fishery will be monitored using designated landing sites, electronic log book system (ELOG) and independent validation of catch at either landing site or plant

CONTACTS –

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NSTC: Gord Sterritt, Fisheries Resource Manager, Northern Shuswap Tribal Council
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UFFCA: Brian Toth, Executive Director, Upper Fraser Fisheries Conservation Alliance
Phone: 250-562-7513, Email: briantoth@shaw.ca

5.5.4 Okanagan Nation Alliance - Near Terminal Sockeye Fishery

The Okanagan Nation Alliance (ONA) has submitted a demonstration fishery proposal for 2013. ONA will be working towards sustaining economic sales of Okanagan Sockeye in addition to working with strategic allies for increasing sales and trade from other inland commercial fisheries. The 2013 fishery will build on previous year's demonstration fisheries and address the challenges involved in informing business plans for in-river fisheries in the B.C. Interior where commercial fisheries are developing, and establishing markets for inland commercial sockeye.

REGION - B.C. Interior

PARTICIPANTS - Okanagan Nation Alliance partnership: Okanagan Indian Band, Westbank First Nation, Penticton Indian Band, Osoyoos Indian Band, Upper Nicola Indian Band Lower and Upper Similkameen Indian bands.

LOCATION OF FISHERY – Sockeye fishery: Osoyoos Lake and Okanagan River

GEAR TYPE – Sockeye fishery – Purse seine(s), beach seine, fish way trap and or troll

TIME FRAME - NOTE: All fishery time frames are estimates and final dates will be determined according to in-season migration timing information. Sockeye fishery will target on Okanagan (Columbia) sockeye. Potential start date of July 20 with end date determined on run timing of Okanagan sockeye and fish quality

ALLOCATION –
Initial forecast of 135,500 Okanagan sockeye should provide for economic opportunities in 2013. The biological escapement goal is 61,200 sockeye past Wells Dam in the Columbia River. Therefore, there is potential for FSC, economic and recreational harvests in 2013. Commercial and recreational harvesting will only be conducted if the Wells Dam counts are sufficient to meet spawning escapement and FSC requirements, and experimental pilot initiatives into Okanagan Lake objectives for Okanagan sockeye. The allowable catch will be determined in-season based on sockeye counts over Wells Dam.

MONITORING PLAN – These fisheries will be monitored using designated landing sites, electronic log book system (ELOG) and independent validation of catch at either landing site or plant. In addition, biotelemetry tracking of adult sockeye will continue to

be developed for estimating instantaneous mortality rates (natural or fishing) during spawner migration.

CONTACTS –
DFO: Dale Michie, B.C. Interior PICFI Coordinator
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ONA: Howie Wright, Fisheries Program Manager
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5.5.5 2013 Harrison-Fraser River Demonstration Fishery

REGION - Lower Fraser Area

PARTICIPANTS - Sts'ailes and Scowlitz First Nations

LOCATION OF FISHERY -
The waters of the Harrison River located between the outlet of Harrison Lake downstream to the orange boundary signs labelled 'Fishing Boundary HFA' approximately 1000 meters below the CN Railway Bridge; and

The waters of the Fraser River bounded on the west by a line from a white boundary sign on the upstream side of the Fraser River at the mouth of the Sumas River, thence true north to a white boundary sign on the opposite shore and bounded on the east by the downstream side of the bridge across the Fraser River at Agassiz.

GEAR TYPE –
- Sockeye: Set nets, Drift nets or Beach seines,
- Pink: Beach seines only. Beach seines not to exceed a maximum mesh size of 2 ¾ inches and a length of 50 fathoms or 360 feet.
- Chum: Beach seines only. Beach seines not to exceed a maximum mesh size of 2 ¾ inches and a length of 50 fathoms or 360 feet.

ALLOCATION –
Sockeye: To be determined but will be expressed as a percentage (%) share of Canadian Commercial Total Allowable Catch (CCTAC).
Pink: To be determined but will be expressed as a percentage (%) share of Canadian Commercial Total Allowable Catch (CCTAC)
Chum: To be determined but will be expressed as a percentage (%) share of the Fraser River Terminal Commercial Total Allowable Catch (FRTCTAC)

TIME FRAME – All fishery time frames are estimates and final dates will be determined according to in-season migration timing information.

Sockeye: This fishery would be planned to take place once a Fraser River sockeye Canadian Commercial TAC is identified, potentially late July to late August or early September.

Pink: Early September to Late September
Chum: Mid October-mid November.

Fraser chinook/Harrison chinook: A fishery for Fraser chinook may be considered concurrently with any sockeye fishery. The fishery for the Harrison chinook component would run concurrently with any pink or chum fishery.

MONITORING PLAN – During any set net or drift net fishing activity the fishers will transport their catch to a predetermined Sts'ailes /Scowlitz landing site to have their catch monitored. During any beach seining activity a Monitor will be present with every beach seining crew during all fishing activity and provide set by set updates to the Sts'ailes Fishery Manager before the beach seine crews deploy their next set to ensure there is TAC available. The Sts'ailes Fishing Authority will collect all catch statistics via these monitors and report this information to DFO immediately after the fishery closes.

CONTACTS - DFO - Sheldon Evers: Unit #3-100 Annacis Parkway, Delta, B.C.
Phone 604-666-8049

Kim Charlie at Sts'ailes band office Phone: 604-796-2116

5.6 Special Projects or Initiatives

5.6.1 Proposal for Early Stuart Sockeye Mortality Study

DFO has received a proposal for a study on Early Stuart sockeye regarding the mortality impacts of releasing sockeye from 8 inch mesh gill nets. The proposal has been submitted by researchers from Carleton University and the University of British Columbia in response to a request by the Lower Fraser Fisheries Alliance to have this study conducted. The objective of this study is to understand the mechanisms influencing post-release survival of adult Early Stuart sockeye salmon in gill net fisheries in the Lower Fraser River. The proposed work would involve harvest of 80 early Stuart sockeye for use in the experiment. The study design is still subject to review and approval by DFO

5.6.2 Fraser Salmon Conservation and Harvest Planning Arrangements

In January 2008, Fisheries and Oceans staff initiated a series of meetings with First Nations throughout the South Coast and the Fraser River watershed to discuss possible management approaches for the upcoming season in the case that there are insufficient salmon returns to meet FSC requirements. A similar process was initiated in 2009 and continues to this day with the aim of furthering discussions on management principles and approaches for Fraser salmon. Meetings are expected to continue during the spring of 2013. A planning committee, with Terms of Reference, consists of the following members (including alternates): one DFO Resource Management Area Chief; one Fraser River First Nation member; and one Island and Marine Working Group member.

5.6.3 FSC Coordinated Fishery

In recent years, a number of marine First Nations have worked cooperatively to harvest salmon, particularly Fraser sockeye, for FSC purposes. There was no coordinated fishery in 2011 or 2012 however discussions will be occurring amongst marine First Nations regarding the potential for a coordinated Fraser sockeye FSC fishery in 2013.

5.7 Treaty Fisheries

Tsawwassen and Maa-nulth First Nations Treaties came into effect on April 3rd, 2009 and April 1, 2011, respectively. Under each treaty, Fisheries Operation Guidelines (FOG) set out the operational principles, procedures and guidelines needed to assist Canada, B.C., Tsawwassen or Maa-nulth in implementing Fisheries Chapters of their respective treaties and managing the salmon fishery on an annual basis. The FOG's provide guidance on how management decisions with respect to treaty fisheries will be made via the Joint Fisheries Committee (JFC), how abundance is estimated, biological and harvesting considerations, catch monitoring and reporting requirements, etc. Each year the Joint Fisheries Committees established under each treaty make recommendations to the Minister on the issuance of specific 'Harvest Documents' to licence the salmon fishery for food, social and ceremonial harvests.

More information on the Treaty can be found at: http://www.B.C.treaty.net/

5.7.1 Tsawwassen Fisheries (Domestic)

As per the Tsawwassen Fisheries Operation Guidelines (TFOG), each year the Tsawwassen First Nation will develop a Tsawwassen Annual Fishing Plan (TAFP) for the harvest of salmon as per the Tsawwassen First Nation Final Agreement. The TAFP will include the Tsawwassen preference for stocks and species to be harvested, locations, timing, access to specific runs, method of harvest, catch monitoring and reporting, enforcement, etc. The TAFP is then presented to the Joint Fisheries Committee (JFC) for their review. The JFC is made up of representatives of Canada (DFO), Province of B.C. and the Tsawwassen First Nation. The Joint Fisheries Committee considers the TAFP in making its recommendations to the Minister of Fisheries and Oceans about the issuance of Harvest Document(s) which in effect licence the fishing of FSC salmon during the season. Multiple harvest documents will be issued over the course of a season for each salmon species. Harvest Documents may include: species and quantity, use of fish, gear type, dates and times, area, designations, monitoring and reporting, etc.

The FSC allocation for salmon under the Tsawwassen First Nations Final Agreement is as follows:

Sockeye Salmon

In any year, the Tsawwassen Fishing Right Allocation for sockeye salmon will be:

a) When the Canadian Total Allowable Catch for Fraser River sockeye salmon is 500,000 or less, 1.0% of the Canadian Total Allowable Catch for Fraser River sockeye salmon;

b) When the Canadian Total Allowable Catch for Fraser River sockeye salmon is greater than 500,000 and less than 3.0 million, then 5,000 Fraser River sockeye salmon plus 0.40904% of that portion of the Canadian Total Allowable Catch for Fraser River sockeye that is greater than 500,000 and less than 3.0 million; and
c) When the Canadian Total Allowable Catch for Fraser River sockeye salmon is equal to or greater than 3.0 million, then 15,226 Fraser River sockeye salmon.

Chum Salmon

In any year, the Tsawwassen Fishing Right Allocation for chum salmon will be 2.58% of the Terminal Surplus of Fraser River chum salmon to a maximum of 2,576 Fraser River chum salmon.

Pink Salmon

In any year, the Tsawwassen Fishing Right Allocation for pink salmon will be that number of fish caught incidentally in the harvest of Tsawwassen Allocation for sockeye salmon, up to a maximum of 2,500 Fraser River pink salmon.

Chinook Salmon

In any year, the Tsawwassen Fishing Right Allocation for chinook salmon will be determined by an abundance based formula, based on Canadian Total Allowable Catch that produces an average annual harvest of 625 Fraser River chinook salmon based on Fraser River chinook salmon returns for the 1982 to 2004 time period.

Coho Salmon

In any year, the Tsawwassen Allocation for coho salmon is an amount of Fraser River coho salmon that will result in an annual average harvest of 500 Fraser River coho salmon and will be harvested a) incidentally in fisheries that target other species; or b) using selective harvesting techniques to capture specific coho stocks.

5.7.2 Tsawwassen Fisheries (Commercial)

In addition to the allocation of salmon for FSC, TFN have an allocation for commercial catch outside of the Treaty as identified via the "Tsawwassen First Nation Harvest Agreement". The allocation in the Harvest Agreement (HA) does not affirm aboriginal or Treaty rights. Fishing undertaken via the HA will be comparable to the requirements of the current Fraser River commercial fishery (First Nation Economic Opportunity (EO) fishery), or a general Commercial Fishery (Area E). For 2013, the HA will be comparable to the EO fishery. Tsawwassen fishers will be expected to operate under the same rules that apply to other fishers taking part in that Fraser River commercial fishery. TFN may also prepare a HA Fishing Plan and give to the JFC for review prior to the season's commencement. Each year that the Minister authorizes a Fraser River commercial fishery in the Tsawwassen fishing area, or a general commercial fishery, the Minister will issue a communal commercial fishing licence for the Tsawwassen First Nation. The Joint Fisheries Committee set up by the Tsawwassen Final Agreement will conduct a post season review.

Salmon allocation under the Harvest Agreement:

- **Sockeye:** 0.78% of the Commercial Allowable Catch for Fraser River Sockeye Salmon for that year.
- **Chum:** 3.27% of the Commercial Allowable Catch for Fraser River Chum Salmon for that year.
- **Pink:** 0.78% of the Commercial Allowable Catch for Fraser River Pink Salmon for that year.

5.7.3 Maa-nulth Fisheries

The Maa-nulth First Nations fishery for domestic purposes (food, social and ceremonial), subject to conservation, public health or public safety, under the Maa-nulth First Nations Final Agreement (Treaty) came into effect on April 1, 2011. The Maa-nulth First Nations comprise five individual First Nations; Huu-ay-aht First Nations, Ka:'yu:'k't'h'/Che:k'tles7et'h' First Nations, Toquaht Nation, Uchucklesaht Tribe and the Yuułuʔiɬʔatḥ First Nation on the west coast of Vancouver Island.

The Maa-nulth Fisheries Operational Guidelines (FOG) sets out the operational principles, procedures and guidelines to assist Canada, B.C. and Maa-nulth in implementing the Fisheries Chapter of the Treaty. The FOG provides guidance on the Maa-nulth fishery incorporating biological, harvesting, catch monitoring and reporting considerations, and other matters of the Treaty.

Each year, the Maa-nulth First Nations prepare an Annual Fishing Plan that describes their preferences for various fisheries to be undertaken. The Joint Fisheries Committee constituted under the Treaty, will make recommendations to the Minister on the issuance of Harvest Documents to authorize harvesting for domestic purposes. The in-season management will vary depending upon the species, the coordination of other fisheries, in-season species abundance levels, total allowable catch levels, or available quotas for harvest as set by the Minister.

More information on the Treaty can be found at: http://www.B.C.treaty.net/

5.7.4. Maa-nulth Fisheries (Domestic)

The Domestic allocations for salmon under the Maa-nulth First Nations Final Agreement are as follows:

Sockeye Salmon

Each year, the Maa-nulth Fish Allocation for sockeye salmon is:

a. An amount of Somass sockeye salmon equal to:
    i. When the Somass Sockeye Canadian Total Allowable Catch is 50,000 or less, 20% of the Somass Sockeye Canadian Total Allowable Catch;
    ii. When the Somass Sockeye Canadian Total Allowable Catch is greater than 50,000 and less than or equal to 85,000, then 10,000 plus 10% of that portion of the Somass Sockeye Canadian Total Allowable Catch that is greater than 50,000 and less than or equal to 85,000;

iii. When the Somass Sockeye Canadian Total Allowable Catch is greater than 85,000 and less than or equal to 412,421, then 13,500 plus 2.87% of that portion of the Somass Sockeye Canadian Total Allowable Catch that is greater than 85,000 and less than or equal to 412,421; and
iv. When the Somass Sockeye Canadian Total Allowable Catch is greater than 412,421, then 22,886;

b. An amount of Fraser River sockeye salmon equal to 0.13366% of the Fraser River Sockeye Salmon Canadian Total Allowable Catch;
c. An amount of Henderson Lake sockeye salmon equal to 26.85% of the Henderson Lake Total Allowable Catch up to a maximum of 17,055 pieces;
d. An amount of Terminal Jansen Lake Sockeye Salmon equal to 50% of the amount of Terminal Jansen Lake Sockeye Salmon that the Minister determines is available for harvest; and
e. An amount of Terminal Power Lake Sockeye Salmon equal to 50% of the amount of Terminal Power Lake Sockeye Salmon that the Minister determines is available for harvest.

Chum Salmon

Each year, the Maa-nulth Fish Allocation for chum salmon is:

a. 3,000 pieces, when the return of Terminal Chum Salmon is critical;
b. 6,500 pieces, when the return of Terminal Chum Salmon is low;
c. 10,000 pieces, when the return of Terminal Chum Salmon is moderate;
d. 14,000 pieces, when the return of Terminal Chum Salmon is abundant;
e. 17,500 pieces, when the return of Terminal Chum Salmon is very abundant.

Pink Salmon

In the first two year period following the Effective Date, and in each subsequent two year period, the Maa-nulth Fish Allocation for pink salmon is 7,250 pieces.

Chinook Salmon

Each year, the Maa-nulth Fish Allocation for chinook salmon is:

a. An amount of Ocean Chinook Salmon equal to 1,875 pieces plus 1.78% of the Ocean Chinook Salmon Canadian Total Allowable Catch; and
b. An amount of Terminal Chinook Salmon equal to:
   i. 200 pieces, when the return of Terminal Chinook Salmon is critical;
   ii. 1,500 pieces, when the return of Terminal Chinook Salmon is low;
   iii. 2,000 pieces, when the return of Terminal Chinook Salmon is moderate; and
   iv. 2,600 pieces, when the return of Terminal Chinook Salmon is abundant

Coho Salmon

Each year, the Maa-nulth Fish Allocation for coho salmon is:

a. An amount of Ocean Coho Salmon equal to 7,000 pieces; and
b. An amount of Terminal Coho Salmon equal to:
   i. 1,200 pieces, when the return of Terminal Coho Salmon is critical;
   ii. 1,850 pieces, when the return of Terminal Coho Salmon is low;

iii. 3,050 pieces, when the return of Terminal Coho Salmon is moderate; and
iv. 3,630 pieces, when the return of Terminal Coho Salmon is abundant.

5.7.5 Maa-nulth Fisheries (Commercial)

In addition to the allocation of salmon for domestic purposes, Maa-nulth has an allocation for commercial catch outside of the Treaty as identified in the "Maa-nulth First Nation Harvest Agreement". The allocation in the Harvest Agreement (HA) does not affirm aboriginal or Treaty rights. Fishing under the HA will be comparable to the requirements of the current commercial fishery. Maa-nulth prepares a HA Fishing Plan which is provided to the JFC for review prior to the season's commencement. Each year that the Minister authorizes a commercial fishery in the Maa-nulth fishing area, the Minister will issue a communal commercial fishing licence for the Maa-nulth First Nations. The Joint Fisheries Committee set up by the Maa-nulth Final Agreement will conduct a post season review.

Salmon allocation under the Harvest Agreement:

- Henderson Lake Sockeye Salmon: in a portion of Area 23, will be for 20% of the Terminal Commercial Total Allowable Catch.
- Jansen Lake Sockeye Salmon: in a portion of Area 26, will be for 25% of the Terminal Commercial Total Allowable Catch.

6 APPENDIX 6: SOUTHERN BC / FRASER RIVER RECREATIONAL FISHING PLAN

Recreational fishing opportunities for salmon are regulated by the *British Columbia Sport Fishing Regulations, 1996* made under the *Fisheries Act*. The regulations are generally summarized in the *2013 to 2015 British Columbia Tidal Waters Sport Fishing Guide* and the *2013 to 2015 British Columbia Freshwater Salmon Supplement.*

This information is subject to change in-season if additional conservation concerns arise or if additional recreational opportunities become available. Changes will be communicated through Fishery Notices, media reports, telephone information lines and/or postings on the Pacific Region Fisheries and Oceans Canada website at: http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/index-eng.htm

A Vision for Recreational Fisheries in British Columbia 2009-2013 developed cooperatively by DFO, the Province of B.C. and the SFAB with funding support from the PICFI was finalized in 2010. It serves as a framework for developing initiatives and actions to support achievement of a collective vision for the recreational fishery in B.C.

The recreational fisheries Vision is available at:
http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/docs/rec-vision-eng.pdf

6.1 Proposed Changes to Recreational Fisheries for 2013/2014

The following represents a list of changes currently being considered to recreational fisheries in the upcoming year. Actual details will be provided through a fishery notice and on the DFO website listed above.

6.1.1 Tidal Waters

Area 23, 25 to 27: Changes will be announced to provide terminal harvest opportunities to retain unmarked coho in portions of these areas based on the improved status for WCVI coho described in the 2013 Salmon Outlook.

Areas 23 and 25: Management measures are being developed to reduce the impact on WCVI chinook in the terminal areas.

Area 125, 126 and 127: Management measures are being considered for increasing the retention of wild and hatchery coho to 4 per day after September 15.

6.1.2 Non-Tidal Waters

Region 2: The daily limit for pink salmon is proposed to move from 2 per day to 4 per day in the following waters: Chilliwack River, Fraser River in Region 2, Harrison River and Stave River.

Region 3: The daily limit for pink salmon is at 4 per day in the following waters. Time: to be announced via Fisheries Notice once determined in-season:
Fraser River from the confluence of the Fraser/Seton River downstream to fishing boundary signs located on both sides of the river approximately 4 km downstream of the town of Lillooet, and

Thompson River: Kamloops Lake outlet downstream to the triangular fishing boundary signs just downstream of Gold Pan Provincial Park except closed in the following three (3) locations:

1. Deadman: from the white triangular fishing boundary signs approximately 1 km downstream of the Highway #1 Bridge at Savona to CN Rail Bridge approximately 500 m downstream of the Deadman Creek/Thompson River confluence
2. Juniper: from the white triangular fishing boundary signs approximately 1.5 km downstream from the Juniper Beach park downstream approximately 4 km to the white triangular fishing boundary signs located at 50 degrees 46.893 minutes North and 121 degrees 08.110 minutes West.
3. Ashcroft: from the white triangular fishing boundary signs on the upstream side of the mouth of the Bonaparte River to the highway 97C Bridge in Ashcroft.

Region 7: The current opening for chinook salmon on the Fraser River from the power line crossing the Fraser River near College Heights upstream to the Northwood bridge crossing the Fraser River from July 10 to July 25, is proposed to move to the Nechako River, from the confluence of the Fraser River up to the Foothills Bridge in Prince George, dates to be determined but most likely in later August.

6.2 Catch Monitoring and Reporting Initiatives

6.2.1 Increasing Coded Wire Tag (CWT) submission rates

The CWT program relies on voluntary submissions of heads from adipose fin-clipped chinook and coho salmon to estimate the quantity and stock composition of salmon in various fisheries. Over the past several years, submission rates have decreased. Returns of heads from adipose clipped coho salmon have become so low that they no longer provide sufficiently precise CWT catch estimates for stock assessment purposes. In certain fisheries, recovery rates of heads from adipose clipped chinook salmon are also low.

Recreational catch taken on guided trips, both lodge-based and non-lodge based is one element of the recreational fishery that has seen increased head submission rates in recent years, due to cooperation of the guides in collecting and in some cases delivering heads. In 2013, the Department will strive to increase the proportion of guiding companies collecting heads to better represent their fishing activity. Where it is possible, head collections and logbook data will be combined to realize the full benefits of these programs.

To increase awareness of the CWT program and to increase the rate of salmon head submissions, the Department is increasing promotion of the CWT program through communications with the SFAB and Sport Fishing Institute. For further information on

the CWT program, please see: http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/tag-etiquette/SHRP-PRTS-eng.htm

6.2.2 Recreational Electronic Logbooks

The development of an improved catch monitoring regime will continue to be a priority in the management of recreational fisheries. Fisheries and Oceans Canada is working with the Sport Fishing Advisory Board to develop catch monitoring and reporting standards for the recreational fishery.

Since 2007 the Department has been working with Sport Fishing Institute of B.C., a number of Resorts and a number of Recreational fishers, to develop a Recreational Electronic Logbook (Rec E-Log) as a tool to capture catch and other fishing information and a tool to report this information to the Department. Data captured and sent is retained by the client for reference. Available free of charge to the Recreational community are three components to the Rec E-Log.

1) On Water or Mobile Component – This component can be installed on any smartphone device (Blackberry, Android etc.). Catch and other fishing information, is captured by GPS location at sea, by individual fishers. Data can be sent from the device or exported to the Lodge Component.
2) Dockside Component – Captures catch and other fishing information at the dock as fishers and guides return from fishing.
3) Lodge Component – Data from the On Water and Dockside components are exported to this application. Uploaded data can be reviewed for correctness and a number of printed reports can be generated. The application has a mapping component, which allows catches to be displayed for those with a GPS location. Data from this component can be easily sent to the Department.

In 2013, the Department will be continuing with this co-management project with the Sport Fishing Institute and the local Sport Fishing Advisory Boards. The ultimate goal of this new initiative is to improve the efficiency and submission rate for recreational catch monitoring and reporting, increasing deployment of paper logbooks and the Rec E-Log.

For more information please contact Ron Goruk at 250-756-7392 or Carmen McConnell at 250-756-7272.

6.3 Chinook

Conservation concerns persist for wild chinook originating from WCVI systems, Lower Strait of Georgia (in particular the Cowichan River chinook) stocks and the Fraser River Spring 4_2, Spring 5_2 and Summer 5_2 stocks.

6.3.1 Lower Strait of Georgia

Conservation concerns for Lower Strait of Georgia (LGS) chinook stocks will guide fisheries planning in 2013. The Cowichan River chinook stock is an indicator stock of the LGS chinook aggregate. Escapement trends have shown some improvements in recent years but the escapements are still below target. Management actions instituted in 2011 and 2012 are planned for 2013 and will include a number of chinook non-retention areas and closed areas.

6.3.2 West Coast Vancouver Island

Since 1999, a recreational fishery "chinook management corridor", extending one nautical mile offshore from the surfline has been in place along the West Coast of Vancouver Island in order to lower the exploitation rate on adult female chinook that are travelling along the shoreline back to their natal streams. The surfline is defined in Schedule 1 of the *Pacific Fishery Management Area Regulations, 2007*.

Management actions for 2013 in the chinook management corridor will remain the same as implemented in 2012, but implemented along the corridor to include Pachena Point. The management action includes a daily limit of two chinook with a maximum size limit of 77 cm. This measure is to continue the protection of mature 4 and 5 year old female chinook, which are the primary spawners for the WCVI wild stocks.

The 2013 forecast of chinook to the Somass River and the Conuma hatchery is 16K and 17K, respectively. The Somass chinook return is the lowest on record and management measures are being developed to protect chinook in the terminal areas.

6.3.3 Fraser River Chinook

In the 2013 Salmon Outlook, Spring 4_2, Spring 5_2, Summer 5_2 chinook have been classified as *stocks of concern*. For Fraser Summer 4_1 chinook, the outlook is low/near target. The 2013 preliminary estimate of the terminal spawner abundance (i.e. after all ocean fisheries removals) for Harrison chinook will be available in late spring.

Management actions implemented since 2010 to protect and conserve Fraser Spring 4_2 chinook for portions of Areas 18, 19, 20, 29 and in the Fraser River are planned to continue in 2013 as outlined below.

Given the poor pre-season outlook for Fraser Spring 5_2 and Summer 5_2 chinook, the Department is planning to begin the season with management actions based on returns being less than 45,000 (zone 1). The management zone may be updated in mid-June based on an in-season of the abundance of chinook at the Albion test fishery (see Section 5.1.4.)

Management actions are presented by area below. Actions for both zone 1 and zone 2 are presented for your reference. A final in-season estimate on the abundance of chinook returning to the Fraser will be available in mid-June. Based on this information, a fishery notice will be released that outlines the final fishery management zone and associated actions that will be in effect for 2013.

Juan de Fuca recreational fishery: Subareas 19-1 to 19-4 and Subarea 20-5.

- March 1 through June 14, the daily limit is two (2) chinook per day which may be wild or hatchery marked between 45 and 67 cm or hatchery marked greater than 67 cm in Subareas 19-1 to 19-4 and 20-5.
- Zone 1: June 15th through July 19th, the daily limit will be two (2) chinook per day which may be wild or hatchery marked between 45 and 85 cm or hatchery marked greater than 85 cm.
- Zone 2: June 15 through July 15, the daily limit is two (2) chinook salmon per day of which only one (1) chinook may be greater than 67 cm. The minimum size limit in these areas is 45 cm in length. (This measure is to protect spring 4_2 chinook.)

Strait of Georgia recreational fishery: Subareas 18-1 to 18-6, 18-9, 18-11, 19-5, and portions of Subareas 29-4 and 29-5.

- May 1 through July 15, the daily limit is two (2) chinook salmon per day of which only one (1) chinook may be greater than 67 cm. The minimum size limit is 62 cm. (If Zone 1, see additional measure below)
    - Zone 1: June 15th to July 19th, the daily limit will be two (2) chinook per day which may be wild or hatchery marked between 62 cm and 85 cm.

Strait of Georgia recreational fishery: Subareas 29-6, 29-7, 29-9 and 29-10.

- May 1 through July 15, no retention of chinook salmon.
- Zone 1: July 16 through July 26, no retention of chinook salmon.
- Zone 2: July 16 through July 26, two chinook (hatchery or wild) per day between 62 cm and 77 cm.

Fraser River tidal waters and non-tidal waters of Region 2:

- January 1 through July 15, no fishing for salmon.
- Zone 1: July 16 through July 26, no fishing for salmon.
- Zone 2: July 16 through July 26, one chinook per day between 30 cm and 77 cm.

Fraser River, Regions 3 and 8
Fraser River:

- January 1 through July 15, no fishing for salmon.
- Zone 1: Closed to fishing for salmon until August 21st.
- Zone 2: July 15 to September 16: 4 per day, 0 over 50cm.

Tributaries:

- Zone 1:
    - Thompson River from Kamloops Lake downstream to the confluence of the Fraser River: Closed to fishing for salmon until August 21st.
    - Clearwater and North Thompson Rivers: No fishing for salmon.

    - South Thompson River: No fishing for salmon to August 15th.
    - Mabel Lake and Shuswap River: July 25th to August 15th: 1 chinook per day 77cm or greater monthly limit of 4/month. July 15th to August 15th: No fishing for salmon at the mouth of Bessette Creek.

- Zone 2:
    - Thompson River from Kamloops Lake downstream to the confluence of the Fraser River, July 16th to August 21st: 4 per day, 0 over 50cm, no fishing for Salmon at the mouth of Nicola River.
    - Clearwater and North Thompson Rivers: August 1st to August 21st: 1 chinook per day.
    - South Thompson River: No fishing for salmon to August 15th.
    - Mabel Lake and Shuswap River: July 25th to August 15th: 1 chinook per day 77cm or greater monthly limit of 4/month. July 15th to August 15th: No fishing for salmon at the mouth of Bessette Creek.

Fraser River, Region 5A

- January 1 to July 15, no fishing for salmon.
- Zone 1: January 1 to December 31, no fishing for salmon.
- Zone 2: 1 chinook per day between 30cm and 77cm at the following dates and locations: July 15 to Sept 01 (Quesnel River); July 25 to Aug 16 (Chilko River); July 27 to Aug 18 (Cariboo River).

Fraser River, Region 7

- January 1 to July 15, no fishing for salmon except from July 10 to July 25, from the power line crossing the Fraser River near College Heights, upstream to the Northwood bridge crossing the Fraser River,.
- Zone 1: January 1 to December 31, no fishing for salmon.
- Zone 2: 1 chinook per day between 30cm and 77cm at the following dates and locations: July 10-25 (Fraser River at Prince George); July 15 to Aug 15 (Bowron River).

Please refer to the 2013-2015 Sport Fishing Guide for the exact descriptions of these opportunities.

6.4 Coho

Interior Fraser River

Conservation measures to protect coho will be similar to those implemented in 2012. There will be no retention of wild coho, with the exception of some terminal areas which have an identified surplus.

Selective hatchery marked coho fishing opportunities will be similar to those provided in 2012. That is, you may retain two hatchery marked coho per day from June 1 to December 31 in tidal waters unless otherwise specified in the final plan or by fishery notice. Increased opportunities for the recreational fishery on hatchery marked coho will be determined in-season. A hatchery marked coho is defined as one that has a healed scar in place of an adipose fin.

Interior Fraser River coho are present in the lower Fraser River from late August until mid-October. Conservation measures are necessary during the time period when much of the run passes through an area. These dates are adjusted slightly each year to commence on the Tuesday following Labour Day. Conservation measures, including no fishing for coho and a bait ban, will be in place in the portion of the river listed during the times listed below:

Fraser River - Below Mission	September 3 to October 4
Fraser River - Mission to Hope	September 5 to October 7
Fraser River - Hope to Sawmill Creek	September 7 to October 12
Fraser River - Sawmill Creek to Lytton	September 16 to December 31
Fraser River - Lytton to Williams Lake	September 23 to December 31
Fraser River - Upstream of Williams Lake	October 1 to December 31

Thompson River –

Downstream of the confluence with the North and South Thompson Rivers
September 23 to December 31
Upstream of the confluence with the North and South Thompson Rivers
October 1 to December 31

Opportunities for selective hatchery marked coho in the tidal and non-tidal waters of the Fraser River after the closures noted above can be found in the *2013-2015 British Columbia Sport Fishing Guide.*

Decisions with respect to management actions deemed necessary to address conservation concerns will be made in consideration of the objectives listed in Section 4 of this plan.

West Coast Vancouver Island

The current exploitation on WCVI coho stocks remains below 20%. Consistent with an abundant outlook for WCVI coho there is consideration for increasing the retention of wild coho in portions of Areas 23, 25 to 27 inside of the surfline (with the exception of Area 26 where limits will include no more than 2 wild coho per day). In addition,

management measures are being considered to allow retention of wild and hatchery coho to 4 per day after September 15 in the offshore of Areas 125 to 127 after September 15.

Management measures are also being considered for increasing the retention of wild coho in Area 20-1 from one to two per day starting October 1 to December 31.

6.5 SOCKEYE

Measures are required in order to meet conservation objectives for stocks of concern such as the Fraser River Early Stuart and Late Run timing groups, Cultus Lake, Sakinaw Lake and Nimpkish River sockeye stocks.

For southern B.C. tidal waters, it is anticipated that sockeye non-retention will be in effect during those times and in those areas when stocks of concern are present. For example, in inside waters (Johnstone Strait, Strait of Georgia, Strait of Juan de Fuca) sockeye retention is unlikely to be permitted until late July or early August when more abundant stocks are migrating through the area. In non-tidal waters, sockeye non-retention is in effect year-round except where harvestable surpluses are identified and potential impacts on stocks of concern are within management constraints. For 2013, if abundance permits opportunities can be anticipated to begin in late July in tidal waters or early August in non-tidal waters subject to identification of a total allowable catch.

The sockeye return to the Somass River is expected to provide fishing opportunities for all sectors in Area 23.

6.6 Pink

In most south coast tidal waters, the daily limit will be four pink salmon.

6.7 Chum

In most south coast tidal waters the daily limit will be four chum.

7 APPENDIX 7: SOUTHERN B.C. / FRASER RIVER COMMERCIAL FISHING PLAN

7.1. Catch Monitoring and Reporting Initiatives

Since 2011, the Department has been working with the Commercial Salmon Advisory Board as part of a Catch Monitoring Working Group to review catch monitoring requirements consistent with the "Strategic Framework for Fishery Monitoring and Catch Reporting in the Pacific Fisheries." A set of minimum requirements has been developed for commercial salmon catch monitoring programs. Minimum catch monitoring requirements identified by DFO and the Commercial Salmon Advisory Board Catch Monitoring Working Group (CSAB CMWG) include:

Independent verification of fishery specific effort
Independent verification of landed catch
Independent verification of at-sea releases
Fishery specific minimum biological sampling standards
Independent verification of compliance with fishery rules

For 2013, a number of catch monitoring pilot programs are being developed to address deficiencies that have been identified with the minimum requirements. While all fisheries will be required to meet catch monitoring requirements overtime, a number of key fisheries have been identified for pilots for 2013. Competitive (full-fleet) fisheries will be expected to implement pilot catch monitoring programs in the following areas:

Area D Gill net: sockeye (Johnstone Strait) Area E Gill net: sockeye (Fraser River) Area G Troll: chinook (WCVI).

7.2. Coded Wire Tag (CWT) Sampling of Freezer Troll Catch

The importance of adequately CWT sampling this catch has increased as the portion of landings frozen at sea has increased. There are three on-going concerns with CWT sampling of freezer troll catch which will continue to be addressed in 2013.

The first concern results from the removal of heads from the catch at sea when trollers freeze their catch. For commercial landings chosen for CWT sampling, sampling activity must examine 100% of the landed fish, and collect all heads that are suspected to contain a CWT. Therefore, trollers removing heads at sea are required by Condition of Licence to keep all heads from retained chinook and coho and deliver them to processing plants when landing their catch. However, heads are not always delivered, and when they are delivered, many deliveries have to be excluded from the CWT sample because they contain fewer heads than the body count in the landing.

The second concern also results from the removal of heads before sampling. Recognizing that freezer trollers may have space limitations for retaining heads, the Department allows the alternative of retaining only the portion of the head likely to

contain the CWT, referred to as the 'snout'. Unfortunately, many deliveries of snouts have to be excluded from the CWT sample because the snouts have been cut too small, making it likely that CWTs actually present in the fish are not included in the sample.

To help address these concerns, the Department:

i) Has standardized the requirements regarding head retention and delivery from all retained coho and chinook in the Conditions of Licence for all troll Licence Areas;

ii) Has specified, as a Condition of Licence, the minimum portion of each head that must be retained;

iii) Will provide instructions regarding these conditions, via troll Fishery Notices, this document (Appendix 11), and other routes.

The third concern results because freezer trollers often land two or more weeks' worth of catch during one landing. The Mark Recovery Program (MRP) is required to estimate the catch of CWTs by week. Ice trollers land often enough that CWTs detected in their catch can be attributed to the week they were caught in. However, when freezer trollers land after a trip lasting two or more weeks, and deliver heads for the entire fishing trip duration, it is unknown which week each discovered CWT was caught in; thus, such samples cannot contribute to the estimates of CWT catch by week (but are still useful for improving estimates of CWT catch in each fishery).

To address this concern, the Department has implemented a program in which special purpose bags and labels are provided to freezer trollers for use in storing and labelling head samples separately according to the week they were caught. For 2013, locations where freezer trollers will be able to pick up packages of bags and labels will be announced via Fisheries Notice. Vessel masters unable to pick up bags from licensing offices should contact the Department toll-free at 1-866-483-9994 to arrange delivery.

7.3. Implementation

Due to uncertainty of both timing and size of returning salmon runs, many commercial openings are not confirmed until a few days prior to the actual opening. Also, the management plan for any area may change in-season. Fishing Areas, Subareas or portions thereof, provisions for extensions, opening patterns and the duration of the fishing season can all be adjusted based on factors such as weak stock concerns, target stock abundance, fishing effort, rate of gear selectivity, domestic allocations and other factors.

This fishing plan is designed to minimize the incidental harvest and by-catch of a range of stocks of concern (see section 5.3 – Management Objectives for Stocks of Concern). Fisheries that occur on the South Coast may be required to release all non-target species to the water with the least harm, depending on local stock concerns.

In 2013, DFO will continue to encourage the development of demonstration fisheries that promote biologically sustainable and economically viable fisheries. Fishery managers are working with fleet advisors to develop demonstration fisheries that experiment with meeting a range of objectives including matching fleet size to the available stock, pacing fisheries to maximize value of the harvest and developing more cooperative fishing arrangements between harvesters. Reports on previous demonstration fisheries can be found on-line at: http://www.pac.dfo-mpo.gc.ca/species/salmon/policies/default_e.htm. See Section 7.18 for further details for 2013 projects.

Catch monitoring improvements continue to be a priority in the management of all salmon fisheries. DFO in consultation with harvest sectors and First Nations will focus efforts on improvements to current catch monitoring and reporting requirements and standards.

7.4. Commercial Salmon Allocation Implementation Plan

The commercial allocation implementation plan is developed annually based on discussions with the Commercial Salmon Advisory Board. For details on the North Coast allocation implementation plan, please see the 2013 Northern BC IFMP.

This section describes anticipated commercial licence area allocations for each gear type and for each species of salmon. These anticipated licence area allocations are intended to guide fishing arrangements at the local level and are not fixed entitlements. Application of these sharing arrangements is subject to meeting all conservation objectives, First Nations obligations, international commitments, deliverability and manageability constraints and other management considerations including all conservation measures currently in effect. Where appropriate the potential harvest identified is a range that reflects the most recent approved forecasts for each stock grouping. In other cases, the potential harvest represents the informed point estimate of fisheries managers based upon historic average return rates and/or available analysis.

Although best efforts will be made to achieve these coast-wide allocation targets, no guarantees are offered that target allocations will actually be achieved in any given year. The achievement of these targets will depend upon the ability to fish selectively and the conservation needs of the resource. In the event that target allocations are not achieved, no compensatory adjustments will be made to future allocations. "Catch up/make up" adjustments to future target allocations will not be considered in the event that a gear type does not meet its target allocation.

The following operational guidelines also apply:

- Individual licence holders and groups of licence holders will not be permitted to make their own allocation transfer arrangements unless agreed to by DFO under Demonstration Fisheries arrangements.
- As in recent years, there will be no directed commercial fisheries for Fraser River sockeye or Fraser River pink salmon in the north (i.e. area licence categories A, C and F).

- Harvest from commercial assessment fisheries intended to obtain information that will benefit a specific fleet will be considered part of the allocation of the fleet conducting the fishery.
- The target allocations for gill net D and gill net E area licences will attempt to equalize the relative average catch per licence in sockeye equivalents.
- The target allocations for troll G and troll H area licences will attempt to equalize the relative average catch per licence in sockeye equivalents.
- If after spawning escapement objectives are met, and despite best efforts, it becomes apparent that an area licence group is unable to achieve its target allocation, subject to conservation requirements, uncaught balances will be given first to the same gear type in a different licence area and, second to different gear types in a manner that reflects their relative target allocations.

It is noted that these are not fixed entitlements but are a projection of available fishing opportunities given present forecasts of stock abundance and best efforts to achieve coast-wide target allocations by gear type. These represent the intentions of fisheries management if abundance is as expected and all other things are equal. However, in many cases in-season adjustments will be necessary to address conservation concerns or other unforeseen events.

7.4.1. South Coast Sockeye

Areas	Potential Harvest (Pieces)	Seine B	Gill Net D	Gill Net E	Troll G	Troll H
Area 23	19,000 K	60%	40%	0%	0%	0%
Fraser River Sockeye	675,000 K	48.5%	22%	25.5%	0%	4%

Notes on sockeye allocations:

Fraser River sockeye: The potential harvest for Fraser River sockeye is based on pre-season p50 forecast information. Measures will be implemented to address uncertainty about returns, environmental conditions and conservation concerns for Sakinaw Lake, Cultus Lake and Late Run sockeye. These factors could substantially reduce opportunities to harvest the full TAC. The Fraser River sockeye TAC will be established based on in-season information.

Barkley sockeye: The current estimate of potential harvest is based on a pre-season estimate of a 350K return. Sockeye abundance will be reforecast in-season and as a result actual catch available could change.

7.4.2. South Coast Pink

Areas	Potential Harvest (Pieces)	Seine B	Gill Net D	Gill Net E	Troll G	Troll H
Fraser River	2,000,000 K	69%	11%	11.5%	0%	8.5%
Mainland Inlets (A12)	5,000 K	73%	9%	0%	0%	18%

Notes on pink allocations:

2013 is a dominant cycle year for Fraser River pink salmon; the potential harvest is based on pre-season p50 forecast information. Fisheries will be planned and managed consistent with Fraser River sockeye, Interior Fraser coho, Fraser River steelhead, and Fraser River pink management objectives.

Potential harvests of Mainland Pinks will be determined in-season.

7.4.3. South Coast Chum

Areas	Potential Harvest (Pieces)	Seine B	Gill Net D	Gill Net E	Troll G	Troll H
11 to 19, 28 to 29	685,000 K	63%	20%	12%	0%	5%
21 to 22	20,000 K	49.5%		49.5%	1%	
23 to 27	1,000 K	0%	98%	0%	2%	0%

Notes on chum allocations:

Anticipated catch in Johnstone Strait is approximately 600K with an additional 85K estimated in the Strait of Georgia and the Fraser River. There will be minimal opportunities for chum fishing in Area 23 and 24 and no fishing opportunities anticipated for Area 25.

For Area 21 and 22, given expected low return of chum in 2012 of 20K the Area B and Area E sharing arrangements were adjusted to reflect expected 50:50 harvest split between net fleets at lower run size. At larger returns the allocations are expected to be approximately 70% Area B and 29% Area E and 1% Area G.

For Fraser River chum, harvest opportunities will be constrained by conservation concerns for Interior Fraser River steelhead.

7.4.4. South Coast Coho

Areas	Potential Harvest (Pieces)	Seine B	Gill Net D	Gill Net E	Troll G	Troll H
11 to 20, 29	0 K	55%	15%	15%	0%	15%
21 to 27, 121, 123 to 127	500 K	0%	0%	0%	100%	0%

Notes on coho allocations:

Inside coho - no coho retention fisheries planned.

WCVI coho - It is anticipated that retention of adipose clipped coho will be permitted in offshore troll fisheries in the latter half of September.

7.4.5. South Coast Chinook

Areas	Harvest Forecast (Pieces)	Seine B	Gill Net D	Gill Net E	Troll G	Troll H
11 to 20, 29	0 K	0%	0%	100 %	0%	0%
21 to 27, 121 to 127	48,000 K	0%	3.1%	0%	96.9%	0%

Notes on chinook allocations:
AABM Chinook - WCVI area includes G WCVI AABM harvest of 46.5K and 1.5 Area D harvest in Area 25. A poor forecast will likely preclude seine or gill net fisheries for Somass (Robertson Creek) chinook in 2013. Area B and D allocations were updated to reflect expectation for Area D harvest only in Area 25. Allocations used for planning purposes for 2013 only are 3.1% Area D (1.5K/48K) and 96.9% Area G (46.5K/48K). Somass sharing between Area B and D in a year of commercial TAC would be 33% SN: 67% GN.

The Area G WCVI AABM TAC if for planning purposes only and may be adjusted in-season if observed First Nation and recreational catches differ from anticipated levels. In addition, conservation concerns for other stocks the expected harvest may be less than this level.

7.5. Test Fishing

DFO uses a range of methodologies to determine in-season stock abundance and composition. Historically, test fisheries have played an essential role in collecting the data necessary to set user TACs and to ensure that conservation objectives are met. Since the 1980's, the Minister of Fisheries and Oceans regularly assisted industry to

finance their part of collaborative science and management activities through use-of-fish arrangements. This ended in June 2006 when the Federal Court of Appeal ruled that the Minister of Fisheries and Oceans did not have this authority under the existing Fisheries Act. To avoid significant disruption of the most critical collaborative science activities (where allocation of fish had been a key component), 58 Million of relief funding over 5 years (2007-2012) was provided while a new legislative authority was established. In 2012, an amendment to the Fisheries Act granted the Minister the authority to allocate fish for financing purposes.

DFO has adopted a two track approach and will collaborate with stakeholders to implement the new regulatory authority.

Track one includes a transition, where feasible for existing projects previously funded by Larocque relief funding to the new use-of-fish authority for a period of one year (starting April 1, 2013 to March 31, 2014 pending completion of Track 2.

Track two includes the development of a national policy framework to provide a standardized, rigorous and transparent process for all existing and new project evaluations and approvals.

DFO will work in close collaboration with resource users to ensure that the fisheries data collections necessary to set TAC's and to ensure conservation will continue to be undertaken.

Consultations with First Nations, commercial and recreational harvesters, the marine conservation caucus and other interested parties will take place once a draft of track 2 guidelines is available and prior to implementation for the 2014-2015 season. Details of meetings will organized through the Salmon Integrated Harvest Planning Committee, First Nations Salmon Coordinating Committee and others as needed.

7.6. Licence Application and Issuance

The 2013/2014 salmon licensing period will encompass April 1, 2013 to March 31, 2014. Applications must be completed and submitted by March 31, 2014 along with the required fee to maintain the licence eligibility whether fishing will take place or not. Please see p. 16 for details of the new online licensing system.

Prior to annual licence issue, vessel owners must ensure that:

a) Any Ministerial conditions placed on the licence eligibility have been met
b) Any conditions of the previous year's licence have been met, such as:
    i. Submission of all harvest logs or a nil report for 2012 (for further information contact the Salmon Catch Monitoring Unit at (250) 756-7279 or 250-729-8385); and
    ii. Submission of all fish slips for 2012 (for further information contact the Regional Data Unit at (604) 666-2716).

For further licensing information see:
http://www.pac.dfo-mpo.gc.ca/fm-gp/licence-permis/index-eng.htm

7.6.1. Fisher Identification Number

Unique Fish Harvester Identification Numbers (FIN's) are assigned to all Pacific commercial harvesters. Once the FIN is issued to a fish harvester, it does not change from year to year. More information on FIN's may be obtained from your DFO fisheries manager or a Pacific Fishery Licensing Unit (PFLU): in Vancouver (604) 666-0566; in Nanaimo (250) 754-0400; in Prince Rupert (250) 627-3413.

7.7. Mandatory Log-Book and In-season Catch Reporting Program

7.7.1. Commercial Harvest Logs and Electronic Logbooks (E-Logs)

There is a mandatory log-book and in-season reporting program for catch information for all commercial fisheries. Commercial salmon harvesters shall maintain a harvest log of all harvest operations. Harvest logs are a record of fishing activities and are required to be kept under commercial conditions of licence and applies to both hard copy (paper) versions and electronic (E-Log) versions unless otherwise specified. To facilitate reporting of information, harvesters may enlist the services of an approved third party service provider or as an alternative, make arrangements to participate in the Department's Electronic Logbook (E-log) program. Participants in the E-Log program will not be required to also have a log book.

For the 2013 fishing season, Fisheries and Oceans Canada will be continuing a co-management arrangement with commercial salmon fishermen on the Electronic Logbook system (now termed DFO E-Log). The E-Log software will be promoted from a pilot phase to production phase where it will be available to all commercial salmon fishers that meet the hardware requirements. The PC based software application has been designed following the current paper versions of the commercial salmon logbooks for gill net, seine and troll. The ultimate goal of this initiative is to improve efficiency and compliance of reporting catch to the Department.

Currently, there may be as many as 100 commercial salmon fishing vessels from all the licence groups employing the DFO E-Log along the Pacific Coast. Catch data and other fishing information will be transmitted to the Department in the manner outlined in their conditions of licence, with respect to electronic logbooks. Participants in this pilot will not be required to purchase the salmon logbook service or be required to phone in their catch and fishery information to the service provider. Authority for continuing to use or start to use the DFO E-Log will be determined by DFO and will be based on the previous season or season's compliance for reporting catch and other fishing information to DFO.

For more information please contact Ron Goruk at 250-756-7392, Carmen McConnell at 250-756-7272.

7.8. Non-retention Species

There will be non-retention of chinook and coho in most southern B.C. commercial fisheries with the exception of some Area E (Fraser River) and Area G (WCVI) fisheries where retention of chinook may be permitted, in addition to some terminal opportunities in areas such as the WCVI where surpluses of coho and chinook may be identified. Given the Outlook for Fraser 4_1 and Fraser Late chinook there will likely be non-retention in any Area E sockeye and / or chum directed fisheries. Non-retention of steelhead will be in effect in all commercial fisheries.

There are also local and at times seasonal restrictions on various other salmon species. Please refer to the Fishery Notice that is released prior to every commercial fishery to determine any locally restricted species, or any in-season updates to the above**.**

7.9. Revival Tanks

Revival tanks conforming to the conditions of licence will be required for all vessels participating in commercial salmon fisheries. All prohibited species captured incidentally must be either revived in the revival tank and released, or released directly to the water in a manner that causes the least harm.

Revival tank construction drawings and additional details are available from the Fisheries and Oceans Canada website at:
http://www.pac.dfo-mpo.gc.ca/ops/fm/selective/default_e.htm.

7.10. Gill Net Construction

Gill nets of two different constructions may be used in all South Coast areas except for Areas 20 and 22, where net construction must be of the 30 filament type (multi-strand). Net construction in all other areas may either be of the 30 filament type (multi-strand) or Alaska Twist (six strands).

The use of Alaska Twist gill nets with four or five filaments of equal diameter in each twine of the web will be permitted in certain gill net fisheries, (excluding Areas 20 and 22) in 2013, providing that an approved study has been undertaken.

Specific restrictions, such as the specifications for net construction and revival tanks, are found in the conditions attached to individual licences. Fish harvesters are urged to read these conditions carefully to ensure that their vessel and fishing techniques are in accordance with their licence.

7.11. Retention of Lingcod by Salmon Troll

To help meet the conservation and sustainability objectives under groundfish integration, an individual quota (IQ) system has been established for the Lingcod fishery. Initial allocation of quota was based on catch history from 1996 to 2003 as this time period coincided with the Dockside Monitoring Program. For those who have fished Lingcod in

conjunction with salmon during the qualifying years, fish slips were used to determine catch.

Implementation of a commercial groundfish integrated fishery has management implications for those wishing to retain Lingcod while salmon trolling. Similar to previous years, all vessels wishing to retain any amount of Lingcod must have their fish validated through the established Dockside Monitoring Program. In addition to this, any vessel wishing to land Lingcod must acquire sufficient quota to do so.
Requirements include the following (less than 500 lbs. of Lingcod per trip):

- Vessel must have sufficient IVQ.
- Transportation requirement – All Lingcod must be transported by the licensed vessel either directly to land or to a fish pen.
- Hail in and Hail out requirements through the designated service provider - Archipelago Marine Research Ltd (AMR).
- Specific locations and times at which landing of fish is permitted.
- Landing requirements – The landing of any fish of any species is not permitted unless a designated observer is present to authorize the commencement of weight verification.

Vessels wishing to retain and land **more than 500 lbs.** per trip of Lingcod must, in addition to all of the above, meet the new electronic monitoring requirements. For more information on these requirements please refer to the 2011/2013 Groundfish Integrated Fisheries Management Plan.

The salmon troll fishery is currently permitted to retain 20 rockfish per day (excluding Yelloweye, Quillback, China, Tiger and Copper), as by-catch to salmon fishing (i.e. during salmon troll open times and when salmon are retained on board the vessel). This allowance will continue in 2013. There are no additional monitoring requirements.

7.12. Selective Fishing / Conservation Measures

In 2013, the Department will work with Area Harvest Committee representatives to continue to implement selective fishing measures to avoid non-target fish or, if encountered, to release them alive and unharmed. These measures include but are not limited to: the use of troll plugs, Alaska twist gill nets, maximum gill net set time and net length, gill net mesh size, gill net depth, brailing for seine vessels, and revival tanks.

7.12.1. Other Conservation Measures

In 2013, Fisheries and Oceans Canada will once again be seeking the co-operation of harvesters in minimizing fishing activities in Robson Bight. This is part of a long-term management plan to afford protection to the killer whale populations that frequent this area during periods from mid-May to early October. Fish harvesters are requested not to moor in the Robson Bight area until 24 hours prior to any fishery being announced for that respective gear type. Information on this management initiative can be obtained

from Department charter vessels on the grounds and from Fisheries and Oceans Canada offices.

7.13. Catch Monitoring Standards

Effective fishery monitoring and catch reporting programs are important to support fishery planning by First Nations, stakeholders, all levels of government and to meet Canada's international and other reporting obligations on fisheries. Further, timely and accurate information on harvest and harvesting practices is essential to properly assess the status of fish stocks and to support resource management for the conservation and the long term sustainability of fish resources. .

The Department finalized the "Strategic Framework for Fisheries Monitoring and Catch Reporting in the Pacific Fisheries" in 2012. The paper outlines a consistent approach to determining the level of monitoring required for all fisheries. Key components of the framework include the development of standardized criteria to be used to determine the required level of monitoring for all Pacific fisheries. The application of the criteria is based on the level of risk the fishery presents to the resource and management regime.

The proposed criteria will be used in discussions with commercial, aboriginal and recreational fisheries harvesters to determine specific monitoring objectives.

For 2013, the following changes will be implemented in fisheries identified for catch monitoring pilots (Area A Seine: sockeye/pink Area C Gill net: sockeye/pink Area D Gill net: sockeye (Johnstone Strait) Area E Gill net: sockeye (Fraser River) Area G Troll: chinook (WCVI)):

- Designated landing sites (list to be developed based on recommendations from the Area Harvest Committees)
- Catch estimates to be communicated prior to any offload
- 20% independent verification of landed catch through a designated service provider

Additional details on the catch monitoring pilots are being finalized and will be communicated via Fisheries Notices, be included within the 2013 Conditions of Licence and summarized within a hand-out provided at time of licence issuance.

For additional information on the framework see the DFO Consultation website: http://www.pac.dfo-mpo.gc.ca/consultation/picfi-ipcip/monrep-survdecl/index-eng.htm

7.14. South Coast Net

Opportunities for targeted Fraser River sockeye fisheries will be determined based upon in-season assessment and abundance of Fraser River sockeye stocks. Fishing opportunities will also be subject to achieving fisheries management objectives for Early Stuart, Late Run and Cultus Lake sockeye, Nimpkish sockeye, Sakinaw sockeye and Interior Fraser River coho in areas where these stocks are present. The Summer stock group is expected to be the dominant component of this year's return.

In 2013, Fraser River sockeye returns are highly uncertain. There may be some harvest opportunities for all harvesters

The 2013 return is a dominant cycle year for Fraser River pink salmon and an above average return is expected at the midpoint of the forecast. Fisheries will be planned and managed consistent with Fraser River sockeye, Interior Fraser River coho, Fraser River steelhead, and Fraser River pink management objectives.

7.14.1. Juan de Fuca Strait, Strait of Georgia and Fraser River (Areas 18, 20 and 29)

Subject to in-season information, Area B seine opportunities will be considered in Juan de Fuca (Area 20), in Area 18, and in Area 29 off the Fraser River mouth. Opportunities and fishing locations will be confirmed based on in-season information.

Area B is considering a coho release mortality study during an Area 20 seine fishery to evaluate coho release mortality rates for seines in Juan de Fuca. Currently a 70% coho release mortality rate is applied based on a study conducted in 2002. The study may also be designed to address some or all of the following including: release mortality rates for sockeye and coho, coho stock composition (e.g. DNA sampling) and seine bunt mesh comparisons.

In the lower Fraser River, Area B has proposed a limited effort demonstration seine fishery, similar to 2011 to explore Fraser sockeye and pink harvest opportunities in 2013. This proposal is being considered again for implementation in 2013, subject to addressing any potential gear group conflicts, in-season information and available Area B TAC. Refer to Appendix 7 section 7.18 for further details.

The Fraser River Panel in conjunction with Fisheries and Ocean Canada will develop and implement Fraser River sockeye fishing plans for these areas, as they fall within Fraser River Panel management responsibilities.

Early to Late July – Areas 18, 20 and 29

- No fisheries anticipated prior to late-July in order to protect Fraser River Early Stuart and Early Summer sockeye stocks.

Late July to Mid-August - Area 20

- Sockeye returns to the Fraser River are uncertain at this time; fishing plans will be based on in-season estimates of abundance.
- Avoidance of coho, Cultus and Late Run sockeye constraints, TAC and diversion rate will be factors determining available harvest opportunities during this period.

Late Run

Late August to early September – Area 20

- Area B is considering a coho release mortality study during an Area 20 seine fishery to evaluate coho release mortality rates for seines in Juan de Fuca.

Interior Fraser River coho

Chum

Mid October to Early November - Area 29

- Gill net and seine fishing opportunities for chum salmon will be confirmed in-season, based upon in-season assessment of the abundance of the chum salmon return and management objectives for Interior Fraser River steelhead.

Early November to Late November - Area 29

- Potential gill net and seine fishing opportunities will be determined in-season, based upon in-season assessment of the chum salmon return.

7.14.2. Johnstone Strait (Areas 11 to 13)

Sockeye

Early to Late July - Areas 11 to 13

- No fisheries are anticipated prior to late July in order to protect Sakinaw Lake sockeye and Fraser River Early Stuart and Early Summer sockeye. No fishing opportunities are available above Lewis Point prior to late July to protect returning Nimpkish River sockeye.

Pink

Late August to Mid-September - Areas 11 to 13

- Directed Fraser River pink fisheries are anticipated subject to available TAC and constraints for Cultus Lake and Late Run sockeye, and Interior Fraser River coho concerns.

Late July to early September - Areas 12 and 13 (Mainland Inlets)

- Mainland Inlet pink – Although this is the off-cycle year for most mainland inlet pink stocks, odd-year returns have shown an improving trend in recent years. Returns are expected to be low to near target abundance. There will be no fishing opportunities unless surpluses are identified in-season.

Chum

- Terminal Summer Run Chum – Area D gill net is exploring limited effort opportunities in terminal areas where returns may be abundant. Discussions are continuing regarding potential opportunities. Any fishing opportunities will be confirmed in-season.

Early October to Late October - Areas 12 and 13 (Johnstone Strait mixed stock chum fishery)

- The 2013 chum outlook indicates low to near target returns based on below average parental brood abundance in 2009, the indications of stable to slightly reduced marine survival in 2010, and high variability in chum returns. The fixed harvest rate strategy which was implemented starting in 2002 is planned to continue in 2013. For seines, two fisheries are anticipated and will be scheduled for before and after the peak of the run. Area B is also exploring options for a demonstration ITQ fishery (See Section 7.18 of Appendix 7). Gill net fisheries will be scheduled during the October time period.
- Specific fishing plans will be determined pre-season following consultation with the chum working group. A chum working group meeting will be scheduled during the May – June time period to begin this planning process.

Late November to early December

- No fishing opportunities directed at Nimpkish River chum are anticipated due to recent trends of poor returns. In-season assessment will confirm the potential for any harvest opportunities.

7.14.3. Strait of Georgia (Areas 14 to 19)

Sockeye and Pink

Consideration may be given in-season for Fraser River sockeye and pink fisheries in Sabine Channel if warranted and will be subject to Sakinaw Lake sockeye constraints as well as constraints for other stocks of concern.

Chum

The 2013 outlook for Strait of Georgia chum is below average for Area 14 and the Sunshine Coast and near target for more southerly systems based on near target escapements from the primary brood year (2009) and average survival rates for most stocks. Chum fishing opportunities in terminal areas will be determined in-season and discussed through pre-season meetings and the in-season chum advisory process. The following opportunities may be available:

Early October to Late-November - Area 16 (Sabine Channel)

- Consideration may be given in-season for limited small fleet seine and gill net chum fisheries in Sabine Channel subject to Sakinaw Lake sockeye constraints as well as constraints for other stocks of concern.

Early October to Late-November - Area 14

- Possible Area D gill net openings starting in early October. Further gill net openings are subject to overall abundance in Area 14 and escapements in the Puntledge, Little Qualicum and Big Qualicum Rivers. Limited effort Area B seine opportunities may be available in late October dependent on escapement levels, abundance and allocation status. Full fleet opportunities may also be available.

Late-October to Mid-November - Area 16 (Jervis Inlet)

- Commercial opportunities are not anticipated due to the recent trend of poor returns; however, this will be confirmed in-season.

October to Early November - Area 17

- Possible Area E gill net opening. Openings are subject to in-season abundance estimates of Nanaimo River chum. Area B seine opportunities will depend on abundance and licence area allocation status.

Late-October to Early December - Areas 18 and 19

- Possible commercial fisheries in Satellite Channel and Saanich Inlet. Openings are subject to in-season abundance estimates for the Cowichan and Goldstream Rivers.

7.14.4. West Coast Vancouver Island (Areas 21 to 27)

All opportunities will be determined based on pre-season assessment and allocation guidelines. Preliminary 2013 forecast for AABM WCVI chinook salmon is 115K. The 2013 forecast for Somass chinook and sockeye is 16K and 350K, respectively.

Sockeye

Mid June to Late July/Early August - Area 23

- Preliminary forecast for Barkley Sound sockeye is at low levels but support limited fishing opportunities for all sectors in Area 23.

Chinook

Mid-August – Early September Area 23

- Gill net and seine opportunities in Alberni Inlet are unlikely at this time. When abundances are available then opportunities are dependent on the pre-season forecast and allocation guidelines.

Mid-August - Area 25

- Gill net opportunities in Tlupana Inlet are dependent on the pre-season forecast and allocation guidelines.

Chum

Mid-September to Late October - Area 23

- Limited small fleet gill net opportunities in Barkley Sound dependent on the pre-season forecast and allocation guidelines.

Mid-September to Late October - Area 24

iii. Limited small fleet gill net opportunities in Clayoquot Sound dependent on the pre-season forecast and commercial allocation guidelines.

Mid-September to Late October - Area 25

- Net fisheries are not planned in Area 25 due to persistent low returns.

October – Area 21 and 121

- Dependent on pre-season forecast Area E gill net fishery possible for two days per week starting October 01-08 (daylight only) inside one mile boundary and north of Dare Point.
- Dependent on pre-season forecast seine fisheries possible October 01-08 inside one mile boundary and north of Dare Point.
- Further fisheries dependent on reaching escapement milestones into Nitinat Lake and indications of abundance through commercial fishing, test fishing and stream enumeration.

7.15. Area G Troll

7.15.1. Sockeye

Opportunities to harvest Barkley Sound or Fraser River sockeye in 2013 are not planned based on proposed allocation arrangements (Section 7.4).

7.15.2. Fraser River Pink

Opportunities to harvest Fraser River pink salmon in 2013 are not planned based on proposed allocation arrangements (Section 7.4).

7.15.3. Chum-West Coast Vancouver Island

Troll opportunities will be dependent on abundance and allocation guidelines. Consultations with Area G troll may be conducted to discuss possible terminal chum opportunities. There may be opportunities available to Area G Troll in areas such as Nootka Sound (Area 125) and Nitinat (Areas 21 and 121). This will be determined in-season based on escapement and coast-wide gear allocation. Terminal chum opportunities usually occur in early October. Chum salmon may also be retained as incidental catch in other directed fisheries, such as the chinook fishery in Areas 23 to 27, and 123 to 127.

7.15.4. Coho

Management measures to protect stocks of concern, including Interior Fraser and Strait of Georgia coho, will constrain WCVI fisheries in the offshore area. After September 15th, there may be opportunities provided for retention of wild and hatchery marked coho during directed chinook fisheries in North West Vancouver Island; retention of wild coho

will not be permitted in South West Vancouver Island (i.e. only retention of hatchery marked coho may be permitted) to minimize impacts on Interior Fraser coho.

7.15.5. Chinook

Under the PST, WCVI chinook fisheries are based on an Aggregate Abundance Based Management (AABM) model. Fisheries occur on an aggregate of United States and Canadian chinook stocks. For management purposes, the chinook fishery year encompasses the period October to September.

For the 2012/2013 season, which ends September 2013, pre-season fishing plans could be subject to change pending the results of consultations focussing on the conservation and protection of Fraser River, Lower Georgia Strait and WCVI chinook stocks. The consultation process begins in the early spring period as part of the IFMP planning process.

For planning purposes, the preliminary Area G harvest level is determined by subtracting the anticipated First Nations FSC (approx. 9,000), Ahousaht Plaintiffs' Demonstration Fishery (approx. 6,339), and recreational (approx. 60,000) catches from the total TAC of 115,300. The preliminary WCVI commercial Area G troll fishery harvest level is approximately 40,034 chinook for the 2013/2014 season. Adjustments to this harvest level may be made in-season based upon observed First Nations and recreational catches. The allocations in this section will change once the Chinook Technical Committee (CTC) releases the final calibration of the Chinook Model for the upcoming 2013 fishing season.

Within the bounds of the PST provisions, Area G troll chinook fisheries will be managed to limit impacts on domestic stocks of concern, including Fraser River Spring 4_2 chinook, Fraser River Spring 5_2 and Summer 5_2 chinook, WCVI chinook, Lower Strait of Georgia (LGS) chinook, and Interior Fraser River coho.

Fraser River Spring 4_2 chinook, Fraser River Spring 5_2 and Summer 5_2 chinook stocks are present off the WCVI during the spring and summer period, most prevalently when they landfall on their migration back to the Fraser River.

Given the poor pre-season outlook for Fraser River Spring 5_2 and Summer 5_2 chinook, the Department is planning to begin the season with management actions based on returns being less than 45,000 (zone 1). The management zone may be updated in mid-June based on an in-season of the abundance of chinook at the Albion test fishery and management zones for Spring 5_2 and Summer 5_2 as outlined in Section 5.1.4.

If required beyond mid-June, Zone 1 management actions are intended to further reduce overall exploitation rates by 50% or more from the early 2000's on Spring 5_2 chinook while also providing additional protection to later timed Summer 5_2 chinook. For the West Coast of Vancouver Island (Area G) troll fishery Zone 1 management will include:

- The Area G troll fishery will be closed during June and July. Management during April and May will include a combination of closed times, monthly effort restrictions and catch limits. This fishery opened April 19th in the northwest portions of Vancouver Island. From April 19th to May 31st monthly effort restrictions and catch limits will also be in place to limit total harvest rates. Effort (e.g. boat days) from the June period will be moved to either, May, August or September.

In the event that the Albion chinook test fishery indicates that Spring 5_2 and Summer 5_2 chinook returns to the Fraser River are larger than 45,000 the Department intends to implement management zone 2 or 3. These actions will be in addition to previously developed management actions for Spring 4_2 chinook.

LGS chinook identified by coded-wire tagged Cowichan River stock are broadly distributed in time and area in the WCVI. A number of management approaches have been utilized in previous troll fisheries to limit impacts on LGS chinook. For 2013, it is anticipated that the substantial reduction in Area G harvest rate under the 2009 PST agreement should provide sufficient protection for LGS chinook. In addition, the fishery will be managed to disperse harvests throughout the fishery year to afford further protection to this stock of concern.

WCVI wild chinook continues to be a stock of concern. As a result, management measures consistent with the previous year will be implemented to protect this stock. The objective for Area G in 2012/2013 will be to avoid encounters with WCVI chinook by restricting the troll fishery to offshore areas during the summer period. Specifically, there will be a 5 nautical mile inside boundary in South West Vancouver Island and a 2 nautical mile boundary in North West Vancouver Island (Areas 126-4 and 127) during the period when WCVI chinook return to the West Coast of the island. The 5/2 nautical mile boundary may be reduced to 1 nautical mile as the WCVI chinook migration comes to an end. If further restrictions were required for conservation purposes, zone/area and time closures could be implemented.

Anticipated Chinook Opportunities for Area G Troll

Management actions are planned to limit the annual exploitation rate on LGS chinook, Fraser River Spring 4_2 chinook, Fraser River Spring 5_2 and Summer 5_2 chinook, WCVI chinook and Interior Fraser River coho. The following fishing plan is subject to change if the status of a domestic stock passing the WCVI changes to a "stock of concern". Fishery openings are planned to distribute harvests proportionately over all fishery periods subject to constraints to protect stocks of concern.

The Department is reviewing the implications of adjusting the minimum size limit of chinook for this fishery.

October to March

Stock composition data indicate the majority of fish harvested during this period are US origin stocks rearing off the WCVI. With the exception of LGS chinook, which may also rear off the WCVI, other Canadian chinook stocks of concern are not vulnerable to the fishery during this period.

During the period from October 1 to March 15, a precautionary harvest level will be set to reflect the preliminary nature of the TAC and the low catch per unit effort that typically occurs at this time of year.

March 16 to April 18

Stock composition data indicate the relative abundance of Fraser bound chinook in the fishery begins to increase in March and April. The status of Fraser River Spring 4_2 chinook is stock of concern. Fraser River Spring 4_2 chinook appears to migrate off the continental shelf seaward of the WCVI troll harvest area, rather than along the vicinity of the shoreline. However, a portion of the stock is vulnerable to the offshore troll fishery on their return migration.

A time-area closure will be maintained from March 15 to April 18 to avoid interception of Fraser River Spring 4_2 chinook.

April 19 to June 15

Stock composition data indicate the relative abundance of Fraser and Columbia chinook in the fishery increases during this period. Many of the Fraser and Columbia origin stocks vulnerable to the fishery during this period are relatively abundant. With the exception of LGS chinook and Fraser River Spring 4_2 chinook in SWVI though early May, other Canadian chinook stocks of concern are not generally vulnerable to the fishery at this time. However, from mid-to-late June, there is increasing potential for interception of stocks of concern including Fraser River Spring 5_2 and Summer 5_2 chinook and Interior Fraser River coho.

During the period from April 19 to June 15, the harvest is managed by an effort based model. From April 19 through April 30 the boat day cap is 250 boat days. In addition, Area 124 does not open for fishing until May 1 while Area 123 opens May 7. These management actions are implemented in order to avoid interception of Fraser River Spring 4_2 chinook and reduce release rates for sub-legal chinook. For May 1 through May 30 the boat day cap is 1000 boat days.

In the event management zone 1 is required to protect Fraser River Spring 5_2 and Summer 5_2 chinook, the fishery will be closed from the June 1 through June 15 time period. The boat day cap of 650 boat days from the June period will be moved to May, August or September.

June 16 to late July

Through July, stock composition data indicate the relative abundance of Fraser and US bound chinook (Puget Sound, Columbia, Oregon stocks) in the fishery remains high during this period. Many of these stocks are relatively abundant. However, opportunities for harvest in July are limited due to increasing interception of Interior Fraser River coho. As well, starting in 2007/08, a time–area closure for the WCVI troll was implemented from June 16 to July 31 to provide protection for Fraser River spring 5_2 and Fraser River Summer 5_2 chinook. In 2011 an impact assessment on Fraser River Spring 5_2 and Fraser River summer 5_2 chinook was undertaken to determine if troll fisheries could be scheduled in the last week of July in WCVI areas. The assessment supported troll opportunities in Areas 125-127, commencing July 24.

For the June 16 through July 31 time period, the fishery is proposed closed to protect Fraser Spring 5_2 and Summer 5_2 chinook unless returns to the Fraser are assessed at greater than 45,000 chinook. If an in-season assessment of the returns are above 45,000 chinook (i.e. management zone 2 or 3), then the fishery may be permitted to open in the last week of July.

Late July to early August

Through August, stock composition data indicate the relative abundance of Fraser and US bound chinook (Puget Sound, Columbia, Oregon) in the fishery remains high during this period. Many of these stocks are relatively abundant. Fraser River spring 5_2 and Fraser River summer 5_2 chinook are less vulnerable to the fishery at this time. However, opportunities for harvest in August are limited due to increasing interception of Interior Fraser River coho.

The harvest level may be adjusted to ensure sufficient WCVI AABM TAC remains for First Nation and recreational fisheries. In addition, the fishery will be managed to minimize mortality on Interior coho through: i) a maximum interception of coho and ii) the mandatory use of plugs. As well, the fishery will be managed to minimize mortality of WCVI origin chinook through the use of closures during time and areas where WCVI chinook stocks are prevalent.

September 2013

Stock composition data indicate the majority of chinook stocks vulnerable to the fishery during this period are bound for the Fraser River, Puget Sound and the Columbia River. Vulnerable stocks of concern include Interior Fraser River coho and WCVI chinook, which are present until about mid-September. After mid-September, Interior Fraser River coho are not vulnerable to the fishery and retention of adipose fin clip (AFC) coho has been permitted in recent years effective September 15. In addition, September may be utilized to harvest any remaining available WCVI AABM harvest as the chinook model calendar year ends on September 30th.

The harvest level may be adjusted based on the available WCVI AABM TAC remaining after accounting for First Nation and recreational fisheries. Any harvest opportunities prior to September 15 must be managed to avoid interception of Interior Fraser River coho and WCVI chinook.

7.16. Area H Troll

7.16.1. Sockeye

Actual opportunities for targeted Fraser River sockeye fisheries will be determined based upon in-season assessment and abundance of Fraser River sockeye stocks and also subject to achieving fisheries management objectives for Late Run and Cultus Lake sockeye, Nimpkish sockeye, Sakinaw sockeye and Interior Fraser River coho. Fishing opportunities will be planned and managed consistent with Fraser River sockeye management objectives.

If an opportunity is available, the following Subareas are expected to open in late July to mid-August: 12-1, a portion of 12-2, 12-3, 12-4, 13-7 (excluding Deepwater Bay), 13-8, 13-9 and 13-27 to 13-32. Additional Subareas may open in upper Area 12 subject to the development of a fishing strategy for all gear types in that area. A staggered opening (from North to South) or closure (from South to North) may be considered if it results in increased fishing time without increased impacts on stocks of concern.

In addition, Areas 18 and 29 may open in relation to the abundance and timing of Early Summer and Summer run stocks which may not be timed with opportunities in Johnstone Strait. Fishing opportunities in the lower Strait of Georgia will be confirmed in-season following consultation with industry and will depend on run size, diversion rate and remaining Area H allocation.

7.16.2. Pink

Fraser River Pink

2013 is a dominant cycle year for Fraser River pink salmon; above average returns are expected. Fisheries will be planned and managed consistent with Fraser River sockeye, Interior Fraser River coho, Fraser River steelhead, and Fraser River pink management objectives.

Mainland Inlet Pink

Odd years are typically off-cycle years for most mainland inlet pink systems. Fishing opportunities in 2013 are not anticipated but will be confirmed in-season based on abundance assessments (e.g. over flights, escapement counts and possibly assessment fisheries). Boundaries will be determined in-season. Coho sensitive areas will remain closed. Fishing opportunities may be considered in mid to late August to mid-September if stocks appear to be returning in sufficient abundance. Details will be determined in-season.

7.16.3. Chum

Early October/Late October - Area 12 and 13

- The 2013 chum outlook indicates low to near target returns, based on below average parental brood abundance in 2009, the indications of stable to slightly reduced marine survival in 2010 and high variability in chum returns.
- Chum fishing opportunities are anticipated to commence in the last week of September. The "mixed-stock harvest strategy" chum fishing plan will be finalized pre-season following consultations with stakeholders.

October/November – Area 14-17

- Chum fishing opportunities in terminal areas will be determined in-season and discussed through pre-season meetings and the chum advisory process.

Mid to Late October/Early November - Area 29

- Potential fishing opportunities for chum in Area 29 will be determined in-season based on in-season abundance assessments.

7.16.4. Coho

There will be no coho retention opportunities in 2013; however, limited terminal assessment fishery opportunities may be considered subject to in-season information but are not anticipated.

7.16.5. Chinook

Due to concerns for Lower Strait of Georgia stocks, no directed chinook fisheries are planned for 2013 and there will be non-retention in fisheries directed at other stocks. Limited terminal assessment fishery opportunities may be considered subject to in-season information.

7.17. Demonstration Fisheries

The Department has conducted extensive consultations with the commercial salmon industry and First Nations concerning fisheries reform and renewal. Changes in the fishery will be designed to improve biological and economic performance of the fishery.

In an ever-changing environment such as resource conservation, a group may want to explore special harvesting initiatives or new management approaches to develop flexible fisheries with greater harvester control that improve product quality, increase value to the fleet and have better catch monitoring and compliance with catch limits.

To contribute to the Pacific Fisheries Reform vision, the Department will consider demonstration projects that support alternative management strategies that:

- Maintains or improves management control and conservation performance in the fishery;

- Promotes the use of clearly defined shares to improve manageability and industry viability; and
- Increases the ability of harvesters to work cooperatively to harvest available surpluses and to take on greater responsibility for control and monitoring of their fishery.

The Department is considering the following demonstration fishery concept proposals that have been submitted by the Area Harvest Committees, for implementation in 2013:

7.17.1. Area B Seine Fraser River Sockeye/Pink Experimental Demonstration (ITQ) Fishery in the Lower Fraser River

This demonstration fishery proposal is similar to the proposal that was provided by Area B to DFO in 2009-2012.

The purpose of this experimental fishery project is to demonstrate the effectiveness of harvesting Fraser River sockeye and/or pink salmon within the confines of the Fraser River employing the selective capabilities of a purse seine and secondly to capitalize on the ability to continue the harvest of sockeye and/or pink salmon that may not be available in marine areas due to other constraints.

This fishery would be managed as part of the Area B and H demonstration ITQ fishery for Fraser River sockeye and pink salmon.

REGION - Lower Fraser River Area

PARTICIPANTS - All Area B licence holders will be eligible however as this is an experiment; effort controls will be in place to limit participation to a maximum of eight to ten vessels fishing on any given day.

LOCATION OF FISHERY - Area 29 In-river, Area B has indicated there are a number of potential locations around New Westminster, Glenrose, the Cement Plant and down to the Deas Tunnel that would be suitable for seining and would for the most part, be out of the shipping lanes.

GEAR TYPE - Seine gear using shallow seine nets, the use of power skiffs and selective fishing measures are mandatory and are specified by licence conditions.

TIME FRAME - This fishery is planned to occur when Fraser River sockeye and/or pink Canadian Commercial TAC is identified. It is anticipated that this experimental fishery would take place sometime within the time period of mid-August to late September.

Consideration of other fisheries in the area will be taken into account when planning Area B in-river fishing activities. Specific fishing times would be confirmed in-season through an integrated planning process. The amount of available fishing days for this experiment will be confirmed in-season.

ALLOCATION - For this experimental fishery to proceed, it will require available Fraser River sockeye and/or pink Area B TAC. The harvest from this fishery will be part of the Area B and H Fraser River sockeye/pink demonstration ITQ fishery. The quota share will be expressed as a percentage of the TAC.

As this is an experimental fishery, there will be a cap on the total allowable harvest in this fishery and the amount will be confirmed in-season. The target species is sockeye and/or pink salmon, retention of chum is permitted; there will be non-retention of all other species.

MONITORING PLAN - As per the Area B and H Fraser River sockeye and pink demonstration ITQ fishery, start, end, pause and daily catch reports will be required by phone-in or electronic logbook. There is a requirement for 100% dockside validation of the catch at designated off-loading locations.

There will be a requirement for observer coverage on all vessels participating in this fishery. In addition to monitoring catch, observers will be available to collect any DNA sampling that is required and identified.

CONTACTS - Barbara Mueller, Resource Management – Lower Fraser Area
(Phone: 604-666-2370 / Email: barbara.mueller@dfo-mpo.gc.ca)

AHC – Chris Ashton, Area B Seine,
Phone: 604-725-0137, Email: areab@telus.net

7.17.2. Area B Seine Johnstone Strait Chum Demonstration Fishery

Note: This proposal is tentative and currently under discussion between the Department and the Area B Harvest Committee.

The Area B Harvest Committee has expressed an interest in continuing to further explore options for a share based approach to the Johnstone Strait chum seine fishery.

In addition to evaluation work that was done in 2008, a thorough review was also conducted in 2012 to explore the option of a two-tier fishery based on a full-fleet competitive opening early in October, and a subsequent quota fishery (based on the test-fishery and the competitive opening) for the remainder of October. This fishery did not take place in 2012; however the review is still on-going and may be an option for 2013. Considerable planning and modelling work will be required to further explore what options might be available for a full or partial effort share based approach to this fishery that can adequately meet the Johnstone Strait chum fixed harvest rate management objectives (20% harvest rate). As well as Area B harvest interests in this fishery. Abundance based shares may be considered pending further analysis.

REGION - South Coast

PARTICIPANTS - All Area B licence holders.

LOCATION OF FISHERY - The fishing area that will be considered is Johnstone Strait (portions of Areas 12 and 13).
GEAR TYPE - Seine gear and selective fishing measures are mandatory and are specified by licence conditions.

TIME FRAME - The fishery would occur during the October time period.

ALLOCATION - Allocation would be based on the assumption that effort or individual quotas shares can be identified and managed without exceeding the fixed 20% harvest rate objective. Further work is required to explore options and possibilities of an effort share based approach to this fishery.

The target species is chum, retention of pink is permitted. There will be non-retention of sockeye, coho, chinook and steelhead.

MONITORING PLAN - Start, end, pause and daily catch reports will be required by phone-in or electronic logbook. There is a requirement for 100% dockside validation of the catch at designated off-loading locations. Over flights will be conducted and charter patrol will monitor the fishery.

CONTACTS - DFO – Matt Mortimer, Resource Management,
Phone: 250-286-5886, Email: matt.mortimer@dfo-mpo.gc.ca

AHC – Chris Ashton, Area B Seine,
Phone: 604-725-0137, Email: areab@telus.net

7.17.3. Area B Seine Area 29 Chum Fishery

The Area B Harvest Committee has expressed an interest in continuing to further explore an Area 29 directed chum seine fishery similar to that of 2012.

REGION - South Coast

PARTICIPANTS - All Area B license holders.

LOCATION OF FISHERY - The fishing area that will be considered is portions of Area 29 off the Fraser River mouth.

GEAR TYPE - Seine gear using both regular seine and shallow seine nets, the use of power skiffs is permitted and selective fishing measures are mandatory; specified by licence conditions.

TIME FRAME - The fishery would occur between mid-October and early November.

ALLOCATION – Fishing opportunities will be based on catch levels in relation to the overall allocation of Southern Inside chum and on some portion of the available Fraser River chum commercial TAC.

The target species is chum, retention of pink is permitted. There will be non-retention of sockeye, coho, chinook and steelhead.

MONITORING PLAN - Start, end, pause and daily catch reports will be required by phone-in or electronic logbook. There will a requirement for observer coverage on all vessels participating in this fishery. In addition to monitoring catch, observers will be available to collect any DNA sampling that is required and identified.

CONTACTS - DFO – Matt Mortimer, Resource Management,
Phone: 250-286-5886, Email: matt.mortimer@dfo-mpo.gc.ca

AHC – Chris Ashton, Area B Seine,
Phone: 604-725-0137, Email: areab@telus.net

7.17.4. Area B Seine Fraser River Chum Demonstration Fishery in the Lower Fraser River.

The purpose of this experimental fishery project is to demonstrate the effectiveness of harvesting Fraser River chum salmon within the confines of the Fraser River employing the selective capabilities of a purse seine, and secondly to capitalize on the ability to continue the harvest of chum salmon that may not be available in marine areas due to other constraints.

REGION - Lower Fraser River Area

PARTICIPANTS - Area 29 In-river, all Area B licence holders will be eligible however as this is an experiment; effort controls will be in place to limit participation to a maximum of eight to ten vessels fishing on any given day.

LOCATION OF FISHERY - Area B has indicated there are a number of potential locations around New Westminster, Glenrose, the Cement Plant and down to the Deas Tunnel that would be suitable for seining and would for the most part, be out of the shipping lanes.

GEAR TYPE - Seine gear using shallow seine nets, the use of power skiffs and selective fishing measures are mandatory and are specified by licence conditions.

TIME FRAME -
The fishery would occur between mid-October and early November.

Consideration of other fisheries in the area will be taken into account when planning Area B in-river fishing activities. Specific fishing times would be confirmed in-season through

an integrated planning process. The amount of available fishing days for this experiment will be confirmed in-season.

ALLOCATION - Fishing opportunities will be based on catch levels in relation to the overall allocation of Southern Inside chum.

The target species is chum, retention of pink is permitted. There will be non-retention of sockeye, coho, chinook and steelhead.

MONITORING PLAN - Start, end, pause and daily catch reports will be required by phone-in or electronic logbook. There will a requirement for observer coverage on all vessels participating in this fishery. In addition to monitoring catch, observers will be available to collect any DNA sampling that is required and identified.

CONTACTS - Barbara Mueller, Resource Management – Lower Fraser Area
(Phone: 604-666-2370 / Email: barbara.mueller@dfo-mpo.gc.ca)

AHC – Chris Ashton, Area B Seine,
Phone: 604-725-0137, Email: areab@telus.net

7.17.5. Area B Seine and Area H Troll Fraser River Sockeye Individual Transferable Quota (ITQ) Demonstration Fishery

This demonstration fishery will be similar to the quota based ITQ Fraser River sockeye fishery that was planned for 2009-2012.

REGION - South Coast and Lower Fraser River Areas

PARTICIPANTS - All Area B and H licence holders

LOCATION OF FISHERY - Seine fishing areas that will be considered in the fishery include; Johnstone Strait (portions of Area 12 and 13), Juan de Fuca (portions of Area 20), portions of Area 18 and portions of Area 29 off the Fraser River mouth, including in depths shallower than 45 m. Note that a separate demonstration fishery proposal is provided for a demonstration – experimental seine fishery in the lower Fraser River. In Area 20, additional measures will be in place to minimize impacts on coho. Consideration for seine fishing opportunities in Area 20 will also be dependent on diversion rate estimates.

Troll fishing areas that will be considered in the fishery include; Johnstone Strait (portions of Area 12 and 13), portions of Area 18 and portions of Area 29 off the Fraser River mouth.

In Areas 12, 13 and 20 additional restrictions will be identified around test-fishing locations to minimize impacts on test-fishery assessment requirements.

GEAR TYPE - Seine and Troll gear, selective fishing measures are mandatory and are specified by licence conditions.
Power skiffs would be permitted as per conditions of licence. Shallow seine nets may be used in areas off the mouth of the Fraser.

TIME FRAME - This fishery is planned to occur when Fraser River sockeye Canadian Commercial TAC is identified. It is anticipated that this fishery will take place within the time period of late July to early September.

The Area H troll fishery is anticipated to be open on a 7 day per week basis as TAC permits. The Area B seine fishery is expected to be open 5 to 7 days per week and will be dependent on the amount of available TAC and the available time frame for the fishery.

It is expected that Area B seine fishing opportunities in Area 20 will also be limited in boat days due to impacts on coho. Area B is exploring the option of conducting a coho release mortality study in 2013.

ALLOCATION - The fishery will be based on available Fraser River sockeye commercial TAC. Shares between licence areas will be based on the 2013 commercial allocation plan.

The Fraser River sockeye quota (ITQ) will be determined by DFO by dividing the respective Area B and Area H Fraser River sockeye allocations by the total number of licences for Area B and Area H multiplied by the available commercial Fraser River sockeye Total Allowable Catch (TAC) determined in-season. The quota share will be expressed as a percentage of the TAC and the percentage will remain fixed in-season subject to amendments for seasonal quota transactions. The TAC may be distributed over the course of the fishery in increments. The TAC will be announced by fishery notice and adjusted if necessary following Fraser River Panel meetings (usually Tuesday and Friday) depending on abundance and stock composition.

Quota will be transferable within each licence area (e.g. Area B to Area B or Area H to Area H) as well as between licence areas (e.g. Area B to Area H or Area H to Area B).

The target species is sockeye, by-catch retention of pink and chum is permitted (except chum retention is not permitted in Area 20). There will be non-retention of coho, chinook and steelhead.

MONITORING PLAN - Start, end, pause and daily catch reports will be required by phone-in or electronic logbook. There is a requirement for 100% dockside validation of the catch at designated off-loading locations. Over flights will be conducted and charter patrol will monitor the fishery.

Additional on-grounds observer coverage/monitoring will be required to assess the encounter rates of sockeye in Area B and H pink fisheries (see the Monitoring Plan in

7.18.6 Area B Seine and Area H Troll Fraser River Pink Individual Transferable Quota (ITQ) Demonstration Fishery)

Additional monitoring requirements are required and in place for the Area 20 seine fishery including on-grounds management, set by set reporting in established grid zones and observer coverage.

CONTACTS - DFO – Matt Mortimer, Resource Management,
Phone: 250-286-5886, Email: matt.mortimer@dfo-mpo.gc.ca

ABHC – Chris Ashton, Area B Seine,
Phone: 604-725-0137, Email: areab@telus.net

AHHC – Peter Sakich, Area H Troll
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7.17.6. Area B Seine and Area H Troll Fraser River Pink Individual Transferable Quota (ITQ) Demonstration Fishery

This demonstration fishery will be similar to the Area B and Area H quota based ITQ Fraser River pink that was planned for 2009 and 2011.

REGION - South Coast and Lower Fraser River Areas

PARTICIPANTS - All Area B and H licence holders

LOCATION OF FISHERY - Seine fishing areas that will be considered in the fishery include:
Johnstone Strait (portions of Areas 12 and 13), portions of Area 18
Juan de Fuca (portions of Area 20) and portions of Area 29 off the Fraser River mouth, including in depths shallower than 45m. Note that a separate demonstration fishery proposal is provided for a demonstration – experimental seine fishery in the lower Fraser River. In Area 20, additional measures will be in place to minimize impacts on coho. Consideration for seine fishing opportunities in Area 20 will also be dependent on diversion rate estimates.

Troll fishing areas that will be considered in the fishery include: Johnstone Strait (portions of Area 12 and 13), portions of Area 18 and portions of Area 29 off the Fraser River mouth.

In Areas 12 and 13 additional restrictions will be identified around test-fishing locations to minimize impacts on test-fishery assessment requirements.

GEAR TYPE – Seine and Troll gear, selective fishing measures are mandatory and are specified by licence conditions. Power skiffs would be permitted as per conditions of licence. Shallow seine nets may be used in areas off the mouth of the Fraser.

TIME FRAME - This fishery is planned to occur when Fraser River pink Canadian Commercial TAC is identified. It is anticipated that this fishery will take place within the time period of mid-August to mid-September.

The Area H troll fishery is anticipated to be open on a 7 day per week basis as TAC permits. The Area B seine fishery is expected to be open 5 to 7 days per week and will be dependent on the amount of available TAC and the available time frame for the fishery.

It is expected that Area B seine fishing opportunities in Area 20 will also be limited in boat days due to impacts on coho. Area B is exploring the option of conducting a coho release mortality study in 2013.

ALLOCATION - The fishery will be based on available Fraser River pink commercial TAC. Shares between licence areas will be based on the 2013 commercial allocation plan.

The Fraser River pink quota (ITQ) will be determined by DFO by dividing the respective Area B and Area H Fraser River pink allocations by the total number of licensed vessels for Area B and Area H multiplied by the available commercial Fraser River sockeye Total Allowable Catch (TAC) determined in-season.

The quota share will be expressed as a percentage of the TAC and will remain fixed in-season subject to amendments for seasonal quota transactions. The TAC may be distributed over the course of the fishery in increments. The TAC will be announced by fishery notice and may be adjusted if necessary following Fraser River Panel meetings (usually Tuesday and Friday) depending on abundance.

Quota will be transferable within each licence area (e.g. Area B to Area B or Area H to Area H) as well as between licence areas (e.g. Area B to Area H and/or Area H to Area B).

The target species pink and by-catch retention of chum is permitted (except in Area 20 retention of chum is not permitted). Sockeye retention will be subject to pre-season management decisions regarding use of available sockeye TAC. If sockeye TAC is available, individual licence holders will have the flexibility to decide how to use their available quotas (ITQs) of sockeye and pink salmon. Accounting for ITQs of Fraser River sockeye will be based on total mortalities, including retained catch and assessed release mortalities. Two examples of how sockeye mortalities are calculated are provided below. For a detailed explanation on how sockeye total mortalities are assessed please refer to the ***2013 Area B and Area H Fraser Sockeye and Pink ITQ Demonstration Fishery Guidelines.*** There will be non-retention of coho, chinook and steelhead.

Examples of total sockeye mortally calculations:

1) A troll vessel landing 400 pink salmon and no sockeye from area 12 on August 20 with a fleet-wide sockeye encounter rate from observer data of 15% sockeye for that day and area would be assessed a release mortality of 6 sockeye against their quota as follows:

400 pinks × 0.15 encounter rate ×0.10 release mortality = 6 sockeye mortalities

2) A seine vessel landing 10,000 pink salmon and 400 sockeye from area 12 on August 28 with a fleet-wide sockeye encounter rate from observer data of 7% sockeye for that day and area would be assessed 475 sockeye against their quota as follows:

10,000 pinks x 0.07 encounter rate = 700 expected sockeye encounters
700 expected sockeye – 400 landed sockeye = 300 releases
300 releases x 0.25 release mortality = 75 sockeye release mortalities
400 landed sockeye + 75 sockeye release mortalities = 475 total sockeye mortalities.

MONITORING PLAN - Start, end, pause and daily catch reports will be required by phone-in or electronic logbook. Verification of sockeye encounter rates in this fishery is essential. Encounter rate data will be collected by third party, on-grounds observers. An observer plan will be developed pre-season to estimate the fleet-wide sockeye encounter rates, by area fished, for Area B and Area H vessels similar to the approach used in 2011. When developing a pre-season plan, the Department will determine the levels of observer coverage for Area B and Area H, based on information collected during the 2011 fishery. There is a requirement for 100% dockside validation of the catch at designated off-loading locations. Over flights will be conducted and charter patrol will monitor the fishery.

CONTACTS - DFO – Matt Mortimer, Resource Management,
Phone: 250-286-5886, Email: matt.mortimer@dfo-mpo.gc.ca

DFO – Beth Pechter, Resource Management,
Phone: 250-286-5880, Email: beth.pechter@dfo-mpo.gc.ca

ABHC – Chris Ashton, Area B Seine,
Phone: 604-725-0137, Email: areab@telus.net

AHHC – Peter Sakich, Area H Troll
Phone: 250-247-8380, Email: sakich@island.net

7.17.7. Area B Seine harvesting of pinks salmon in Area 12 with a shallow seine net

This was a new demonstration fishery which occurred on a limited basis in 2011. It may be considered again in 2013.

7.17.8. Area D Gill Net Pooled Sockeye Demonstration Fishery

Note: This proposal is tentative and currently under discussion between the Department and the Area D Harvest Committee. If this demonstration fishery does take place it will likely be structured as follows:

The objective of conducting this fishery is to test the feasibility and explore the potential benefits of changing the management of the fishery when available TAC is at levels insufficient for a full fleet fishery. In this situation, limited fleet pool fishery would be conducted such that small amounts of TAC can be accessed by the Area D fleet. The implementation of this demonstration directly controls the total harvest by limiting participation in the fishery.

REGION – South Coast Area

PARTICIPANTS – Voluntary pool concept where all Area D licence holders with a valid 2013 salmon licence will be eligible to register for pools. Area D licence holders will have an opportunity to voluntarily organize into pools and identify a designated catcher vessel for each pool. Pools will be organized prior to any commercial fishing in 2013.

LOCATION OF FISHERY – Johnstone Strait, Area D (including portions of Area 11, 12 and 13)

GEAR TYPE – Gill net gear, selective fishing measures are mandatory and are specified by licence conditions.

TIME FRAME - This fishery is planned to occur when insufficient Fraser River sockeye Canadian Commercial TAC is identified to have full fleet fisheries. It is anticipated that this fishery will take place within the time period of late July to late August.

ALLOCATION - The fishery will be based on available Fraser River sockeye commercial TAC and shares will be assigned based on the number of vessels in a pool. The minimum pool size will be 5 vessels with no maximum number of vessels.

MONITORING PLAN - Start, end, pause and daily catch reports will be required by phone-in or electronic logbook. There is a requirement for 100% dockside validation of the catch at designated off-loading locations.

CONTACTS - DFO – Greg Hornby, Resource Management – South Coast Area
Phone: 250-286-2886 / Email: greg.hornby@dfo-mpo.gc.ca

AHC – contacts to be determined

7.17.9. Area D Gill Net Area 14 Fraser River Sockeye Fishery for 2013

Note: This proposal is tentative and currently under discussion between the Department and the Area D Harvest Committee. If this demonstration fishery does take place it will likely be structured as follows:

The objective of conducting this fishery is to test the feasibility and explore the potential benefits of accessing Fraser River bound sockeye salmon in the Strait of Georgia. Once this demonstration fishery has successfully demonstrated that Fraser River sockeye can be caught in the Strait with minimal by-catch, the number of vessels may be expanded. This will benefit the whole Area D fleet by lengthening the time window that specific stocks can be targeted or avoided.

REGION – South Coast Area

PARTICIPANTS –
All Area D licence holders will be eligible to participate, however as this is an experiment; effort controls will be in place to limit participation to a maximum of eight to ten vessels fishing on any given day. Approximately 8 licensed vessels will be required to participate on any given day in order to share observer costs.

SELECTION – The Area D harvest committee will work in concert with the DFO in vessels from the Area D fleet to participate in this fishery. Participation in this fishery will require fishermen to support an Observer and/or Validation process.

LOCATION OF FISHERY – Strait of Georgia, Area D (Subareas 14-6, 14-9, 14-12, 14-13)

GEAR TYPE – 90 mesh, 200 fathoms (same as Johnstone Strait sockeye net)

TIME FRAME – This fishery is planned to occur between late July and late August.

TARGET STOCK – This fishery will target Fraser River Sockeye.

ALLOCATION – This will be a defined share fishery, with the share determined as a portion of the overall Area D Fraser Sockeye Allocation. The share will be determined by the AHC, DFO, and the Fraser Panel. The intention is not to appreciably impact the length of the full fleet fisheries in Johnstone Strait.

SELECTIVITY – This fishery uses various selective fishing techniques, including; mesh size restrictions, hang ratio restrictions, dropped weedline, short set times, and revival boxes to minimize mortality on potential by-catch.

MONITORING PLAN – Start, end, pause and daily catch reports will be required by phone-in or electronic logbook. There is a requirement for 100% dockside validation of the catch at designated off-loading locations. There will be one mobile observer to circulate through the 8 vessels over the duration of the fishery. The selection and coordination of the service provider will be handled by the Area D AHC. The cost for the observer, and catch validation will be shared by the participants.

CONTACTS – **DFO** – Greg Hornby, Resource Management – South Coast Area
Phone: 250-286-2886 / Email: greg.hornby@dfo-mpo.gc.ca

AHC – Ryan McEachern, Area D Gill Net Phone: 604-219-0014/ Email: ryanmceachern@shaw.ca

7.17.10. Area H troll Johnstone Strait Chum Individual Transferable Effort demonstration fishery

It is anticipated that this fishery will be similar to the effort based ITQ fishery that occurred in 2009-2012.

REGION- South Coast

PARTICIPANTS- All Area H troll licence holders.

LOCATION OF FISHERY- Johnstone Straits (portions of Area 12 and 13). Restrictions will be in place on weekends and holidays to restrict the fishery above Subarea 13-6 (Deepwater Bay).

GEAR TYPE - Troll, barbless hooks and revival tanks are mandatory.

TIME FRAME OF FISHERY - The fishery is anticipated to commence during the last few days in September until the first few days in November and will be divided into two fishing periods. The timing of the two fishing periods and a potential 1 to 2 day closure between fishing periods is under review. There will be potential closures on seine fishing days depending on the structure of the seine fishery. Fishing plans and start dates will be confirmed prior to the season through the chum working group consultation process.

ALLOCATION - Boat day allocations are based on the anticipated amount of effort and the distribution of that effort in order to stay within Area H's share of the harvest rate.

The allocation of 5 boat days per licence (3 days in fishing period 1 and 2 days in fishing period 2) provided in 2012 is under review and will be confirmed prior to the start of the 2013 season. Boat days will be permitted to be transferred between other Area H licence holders within fishing periods but not between periods. The carry-over rule between periods is currently under review.

The target species is chum, retention of pink is permitted. There will be non-retention of sockeye, coho, chinook and steelhead.

MONITORING PLAN - Start, end, pause and daily catch reports will be required by phone-in or electronic logbook. Over flights will be conducted and charter patrol will monitor the fishery. There will be a continuation of the Vessel Monitoring System pilot.

CONTACTS
DFO – Beth Pechter, Resource Management
Phone: 250-286-5880, Email: beth.pechter@dfo-mpo.gc.ca

AHC – Peter Sakich, Area H Troll,
Phone: 250-247-8380, Email: sakich@island.net

7.17.11. Area E Gill Net Chinook Pooled Demonstration Fishery

The objective of conducting this fishery is to test the feasibility and explore the potential benefits of changing the management of the fishery to a pooled quota style, thereby demonstrating the use of defined shares and the ability to access TAC that a full fleet fishery would not be able to access. The implementation of this demonstration directly controls the total harvest by limiting participation in the fishery and setting limits on the harvest amounts of Fraser chinook. The chinook Pooled Demonstration fishery occurred for the first time during the 2011 salmon season; this fishery did not occur in 2012 but is planned for 2013 and will be dependant on in-season information.

REGION - Lower Fraser Area

PARTICIPANTS - Voluntary pool concept where all Area E licence holders with a valid 2013 salmon licence will be eligible to register for pools. Area E licence holders will have an opportunity to voluntarily organize into pooled fisheries and identify a designated catcher vessel for each pool. Pools will be organized prior to any commercial fishing in 2013 and will apply to all Area E pooled demonstration fisheries in 2013.

LOCATION OF FISHERY - Area 29 – Lower Fraser River Main stem

GEAR TYPE - Gill net gear -minimum 8 inch (203mm) mesh size

TIME FRAME - Target dates are mid-August to early September

ALLOCATION - The target species for this demo fishery is Fraser River chinook (Summer Run 4_1 chinook– i.e.: South Thompson). The amount available for harvest in 2013 will be reviewed based on pre-season information and subject to in-season constraints. The minimum pool size will be 5 vessels with no maximum number of vessels; shares will be assigned based on the number of vessels in a pool.

Note: The prospects for a commercial chinook harvest opportunity are tempered by the reduced Outlook for 2013. Further to this - in-season assessment information will be used to consider whether there is sufficient abundance for commercial demonstration fisheries for South Thompson 4(1) Chinook to proceed.

MONITORING PLAN - In addition to requirements outlined in the Area E Condition of Licence, there is a requirement for 100% dockside validation of the catch at designated off-loading locations.

CONTACTS - DFO - Barbara Mueller, Resource Management – Lower Fraser Area (Phone: 604-666-2370 / Email: barbara.mueller@dfo-mpo.gc.ca)

AHC – Bob McKamey, Area E Gill net (AEHC)
Phone: 604-826-2658 / Email: aehc@shaw.ca

7.17.12. Area E Gill Net Sockeye Pooled Demonstration Fishery

The objective of conducting this fishery is to test the feasibility and explore the potential benefits of changing the management of the fishery to a pooled quota style, thereby demonstrating the use of defined shares and the ability to access available TAC at levels insufficient for a full fleet fishery to access. In this situation, a limited participation fleet pooled fishery would be conducted to provide an opportunity for small amounts of TAC to be accessed by the Area E fleet. The implementation of this demonstration fishery directly controls the total harvest by limiting participation in the fishery.

REGION - Lower Fraser Area

PARTICIPANTS - Voluntary pool concept where all Area E licence holders with a valid 2013 salmon licence will be eligible to register for pools. Area E licence holders will have an opportunity to voluntarily organize into pooled fisheries and identify a designated catcher vessel for each pool. Pools will be organized prior to any commercial fishing in 2013 and will apply to all Area E pooled demonstration fisheries in 2013.

LOCATION OF FISHERY – Lower Fraser River, Area 29

GEAR TYPE - Gill net gear specifications for sockeye-targeted fisheries. Selective fishing measures are mandatory, as specified by licence conditions.

TIME FRAME – This fishery is planned to occur when insufficient Fraser River sockeye Canadian Commercial TAC is identified to conduct full fleet fisheries. It is anticipated that this fishery will take place within the traditional sockeye fishery season during the August to early September time frame.

ALLOCATION - The target species for this demo fishery is Fraser River sockeye. The amount available for harvest will be determined in-season and based on available Fraser River sockeye Canadian Commercial TAC. Shares will be assigned based on the number of vessels in a pool; the minimum pool size will be 5 vessels with no maximum number of vessels.

MONITORING PLAN - In addition to requirements outlined in the licence conditions there is a requirement for 100% dockside validation of the catch at designated off-loading locations.

CONTACTS - DFO - Barbara Mueller, Resource Management – Lower Fraser Area (Phone: 604-666-2370 / Email: barbara.mueller@dfo-mpo.gc.ca)

AHC – Bob McKamey, Area E Gill net (AEHC)
Phone: 604-826-2658 / Email: aehc@shaw.ca

7.17.13. Area E Gill Net Gulf of Georgia Chum Demonstration Fishery for 2013

The objective of conducting this fishery is to test the feasibility and explore potential benefits of accessing Fraser-bound chum in the Gulf of Georgia, while minimizing interception of co-migrating stocks of concern.

REGION – South Coast Area

PARTICIPANTS –8 Area E licensed vessels.

SELECTION – The Area E Harvest Committee will coordinate selection of up to 8 vessels from the Area E fleet. Participation in this selection will require fishermen to provide for observer coverage.

LOCATION OF FISHERY – Gulf of Georgia, Area E. (Area 29-2, 3,4,6,7, and portions of 29-9, 10)

GEAR TYPE – 90 mesh, dropped weed-line, 5 7/8 inch mesh size, 200 fathoms (i.e. same gear used in the Nitinat Chum Fishery)

TIME FRAME –October

TARGET STOCK – This fishery would target Fraser River Chum.

ALLOCATION – The fishery would be based on a limited portion of the available Area E Fraser River chum commercial TAC. This limited portion will become a defined share for the Demonstration Fishery, and be determined pre-fishery by the AHC and the DFO.

SELECTIVITY – This fishery would explore various selective fishing techniques, including; mesh size restrictions, hang ratio restrictions, dropped weedline, short set times, and revival boxes to minimize mortality on potential by-catch.

MONITORING PLAN – Start, end, pause and daily catch reports would be required by phone-in or electronic logbook. There would be a requirement for 100% dockside validation of the catch at designated off-loading location(s) in addition to partial roving observer coverage over the duration of the fishery. The selection and coordination of the

service provider would be coordinated by the AEHC. Expenses for the observer, and catch validation is planned as a cost-sharing arrangement amongst demonstration fishery participants.

CONTACTS – **DFO** - Barbara Mueller, Resource Management – Lower Fraser Area Phone: 604-666-2370 / Email: barbaramueller@dfo-mpo.gc.ca
AHC – Darrel McEachern, Area E Gill Net Phone: 604-240-9690 / Email: grandpadarrel@hotmail.com

7.17.14. Area E Gill Net Chum Selective Net Demonstration Fishery

The objective of conducting this fishery is to test the feasibility and explore the potential benefits of accessing Fraser chum in Fraser River, while minimizing interception of co-migrating stocks of concern.

REGION - Lower Fraser Area

PARTICIPANTS - A minimum of 12 Area E licensed vessels.

SELECTION – The Area E Harvest Committee will work in concert with the DFO in selecting 12 vessels from the Area E fleet, as well planning and prosecuting the fishery. Participation in this selection will require fishermen to support an Observer and/or Validation process.

LOCATION OF FISHERY – Lower Fraser River mainstem, Area 29. This demonstration fishery would divide the pooled vessels into 4 distinct geographical areas to explore possibilities of potential by-catch area specific. (Note: there will be a box closure around the Albion Test Fishery traditional drift area to prevent any potential interference with test fishing results.

GEAR TYPE – Demonstration selective gill net only. The total depth of the special net will be similar to the standard Fraser River Chum net, except that the top half of the net will be large mesh net (8" minimum mesh size). Further modifications to net configuration including hang ratio may be considered.

TIME FRAME –October

TARGET STOCK – This fishery will target Fraser River Chum.

ALLOCATION – The fishery will be based on a defined portion of the available Area E Fraser River chum commercial TAC. The catch will be pooled, and monitored by detailed set logs. The fishery will proceed until the target catch for the pool is caught, or for a reasonable length of time, to be pre-determined.

SELECTIVITY - This fishery will explore the implementation of various selective fishing techniques, including; variable mesh size, mesh size restrictions, hang ratio

restrictions, short net length (100 fathoms), short set times, and revival boxes to minimize mortality on potential by-catch.

MONITORING PLAN - Detailed set-to-set reporting to a designated DF co-ordinator will be required. Start, end, pause and daily catch reports would be required by phone-in or electronic logbook. There is a requirement for 100% dockside validation of the catch at designated off-loading locations and a provision for roving observers to be deployed during the duration of the fishery. The selection and coordination of the service provider will be coordinated by the AEHC. The cost for the observers, and catch validation would be shared a shared responsibility of pooled demonstration fishery participants.

CONTACTS - DFO - Barbara Mueller, Resource Management – Lower Fraser Area
(Phone: 604-666-2370 / Email: barbara.mueller@dfo-mpo.gc.ca)

AHC – Darrel McEachern, Area E Gill net (AEHC)
Phone: 604-240-9690 / Email: grandpadarrel@hotmail.com

7.17.15. Area H and First Nations Communal Commercial Fisheries, Fraser River Sockeye and Pink Transferable Quota (ITQ) Demonstration Fishery

Note: This proposal is tentative and currently under discussion within the Department as well as between the Department, the Area H Harvest Committee and First Nations with communal commercial licences. If this demonstration fishery does take place in 2013 it will likely be structured as follows.

This demonstration fishery will be similar to the Individual Transferable Quota (ITQ) Fraser River sockeye fishery that was conducted between the Area B seine and Area H troll fleets in 2011 and that is proposed for 2013.

LICENCE AREA Area H (Troll)

REGION South Coast and Fraser River areas.

PARTICIPANTS All Area H licence holders and participating First Nations (FN) with communal commercial licences

LOCATION OF FISHERY Troll fishing areas that will be considered in the fishery include Johnstone Strait (portions of Areas 12 and 13), portions of Area 18 and portions of Area 29 off the Fraser River mouth. FN fishery areas in those areas of the Fraser River watershed in which communal commercial sockeye and pink salmon fisheries are conducted.

GEAR TYPE Gill net and beach seine for the FN fisheries and troll gear for the Area H fishery with mandatory selective fishing measures specified by licence conditions.

TIME FRAME This fishery is planned to occur when Fraser River sockeye and pink salmon Canadian commercial TAC is identified. It is anticipated that this fishery will take place within the time period of late July to early September.

ALLOCATION The fishery will be based on available Fraser River sockeye and pink salmon commercial and FN communal commercial TAC. Shares between the Area H troll and FN fisheries will be based on the 2013 allocation plan.

The Area H troll Fraser River sockeye and pink salmon quotas (ITQs) will be determined by DFO dividing the Area H Fraser River sockeye and pink salmon allocations by the total number of licences for Area H multiplied by the available commercial Fraser River sockeye and pink salmon Total Allowable Catch (TAC) determined in-season. The quota share will be expressed as a percentage of the TAC and the percentage will remain fixed in-season subject to amendments for seasonal quota transactions. The TAC may be distributed over the course of the fishery in increments. The TAC will be announced by Fishery Notice and adjusted if necessary following Fraser River Panel meetings (usually Tuesday and Friday) depending on abundance and stock composition.

Quota will be transferable between Area H and participating FN communal commercial fisheries where pre-season arrangements have been made.

The target species are sockeye and pink salmon, with by-catch retention of other salmon species not permitted unless otherwise approved.

MONITORING PLAN Start, End, Pause and Daily Catch reports will be required by phone-in or electronic logbook. There is a requirement for 100 per cent dockside validation of the catch at designated off-loading locations. Over flights will be conducted and charter patrols will monitor the fisheries.

Additional on-grounds observer coverage/monitoring may be required to assess the encounter rates of sockeye.

CONTACTS

DFO, Beth Pechter, Resource Management Coordinator – Salmon
Phone: 250-286-5880
Email: beth.pechter@dfo-mpo.gc.ca

AHHC, Peter Sakich, Area H Troll
Phone: 250-247-8380
Email: sakich@island.net

7.18. Interim Guidelines for Temporary Commercial Salmon Share Transfers

The Department is proposing the following operational guidelines for the temporary transfer of commercial salmon shares for 2013. Transfers of commercial salmon fleet

allocations within regular commercial fishing areas will continue to be guided by *An Allocation Policy for Pacific Salmon 1999* (Allocation Policy).

The following types of commercial salmon share "transfers" are addressed by this guidance:

1) Transfer of salmon shares between any of the following groups:
   - marine Demonstration Fishery participants;
   - in-river Demonstration Fishery participants;
   - First Nations with communal licences allowing sale; and/or
   - First Nations with Harvest Agreements for salmon,

   when there is an arrangement between the original share-holders and the recipient. Requests have involved transfer from downstream to upstream locations, and vice versa.
2) Transfers of uncaught commercial Total Allowable Catch allocations from regular commercial fleets, to First Nations who have in in-river Demonstration Fisheries, communal licences allowing sale that year, or a Harvest Agreement for salmon, or vice versa, where there is no arrangement between the original allocation holders and the recipient. Requests have been made for DFO to licence additional temporary allocations for the recipient.

Requests for temporary transfers of commercial salmon shares involving watershed areas upstream of regular commercial fishing areas will be reviewed with consideration to the following general principles and the operational considerations identified below.

A. Guiding Principles for Temporary Transfer of Salmon Shares Involving In-river Areas:

1) Result in improvement of management control and/or conservation performance in the fishery;
2) Consistent with conservation measures for stocks of concern, including by-catch species/stocks;
3) Respect existing aboriginal and treaty rights, including Food, Social and Ceremonial access.
4) Consistent with international obligations;
5) Consistent with objectives outlined in Salmon Integrated Fishery Management Plans;
6) Consistent with *An Allocation Policy for Pacific Salmon (1999)* in areas where the allocation policy applies, including respecting recreational priorities as identified in the policy.

7) Respect the Common property nature of the fisheries resource: access to the resource does not imply ownership of the resource or any portion of the resource.

8) Support opportunities to utilize Canadian commercial total allowable catch while respecting conservation requirements.

9) Commercial fishery arrangements for First Nation and regular commercial fisheries will be managed under common and transparent rules; accordingly, commercial category "F" licences will be managed in accordance with the same rules as the regular commercial fishing fleet which they are part of.

10) Affordable to implement i.e. would not result in incremental costs to DFO.

B. Operational Considerations Regarding Requests for Temporary In-River Transfers:

- Transfers of commercial salmon allocation shares will only occur when there is a Canadian commercial Total Allowable Catch (TAC) (i.e. harvestable surplus) identified for the target stock or species which is available for harvest.
- Transfers of commercial salmon shares between parties will only be considered for commercial fisheries and commercial participants with a clearly defined percentage share of the Canadian commercial total allowable catch.
    - Only First Nations with a defined percentage share of salmon TAC for the given year (i.e. Economic Opportunity agreement, Harvest Agreement (Treaty) and Demonstration Fishery access) and regular commercial licence holders with a defined percentage share of TAC (i.e. via a commercial marine Demonstration Fishery) can participate in a share transfer arrangement.
    - If after spawning escapement objectives are met, and despite best efforts, it becomes apparent that an existing commercial share holder is unable to harvest its share and no mechanisms are in place that would permit the transfer of the share to another commercial harvest group, the Department may consider transfers of uncaught commercial harvest shares to in-river First Nations holding a clearly defined percentage share of the Canadian commercial total allowable catch, on a case by case basis.
- For share transfers between commercial fisheries, individual salmon share holders or groups of salmon share holders; the mechanism (e.g. tracking, management and accounting of shares) for facilitating transfers needs to be agreed upon pre-season. Individual licence holders and groups of licence holders will not be permitted to make their own allocation transfer arrangements unless agreed to by DFO.
- In most cases transfers will be based on a percentage share of the available commercial TAC and not a fixed number of salmon, to account for in-season changes in the TAC. The number of pieces of salmon comprising a share will usually fluctuate in-season based on changes in abundance and other factors which will influence the amount of commercial TAC available. Alternate approaches for calculating a share may be considered as indicated in this

management plan or with approval from the RDG.

- For commercial salmon licences held by the Department, individual licence allocations will be based on an equal percentage allocation of the commercial TAC for all licences in that commercial licence area (i.e. Areas A to H).
- Transfers of commercial salmon allocations must consider shares of all stocks that will be harvested in the recipient area. For stocks or management units of concern or where little or no Commercial TAC has been identified, transfers will need to consider and/or mitigate potential impacts.
- Harvest of commercial salmon allocations is not guaranteed and actual harvest opportunities may be limited by constraints to protect species or stocks of concern. Commercial fishery participants that demonstrate an ability to fish selectively may be able to access a greater amount of their harvest share.
- Enhanced fisheries monitoring and catch reporting programs must be in place for all participants to ensure that harvests do not exceed defined shares.
- If shares are exceeded, any party exceeding their share could face enforcement actions.
- Transfers of commercial salmon shares will not be permitted when this may adversely affect First Nations Food, Social and Ceremonial harvest opportunities in the area.
- Surpluses of salmon in terminal areas (i.e. ESSR fisheries) will continue to be managed using existing ESSR guidelines.
- All decisions regarding temporary salmon share transfers are one-time only to address a specific set of circumstances.

8 APPENDIX 8: COMMERCIAL SALMON LICENCE AREAS

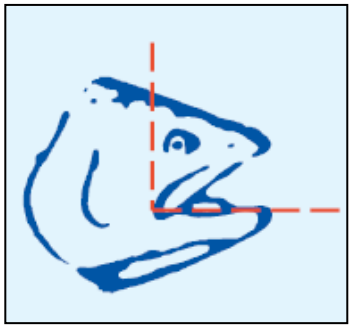
Pacific Salmon Fishing Area	Gear	Corresponding Pacific Fisheries Management Areas (PFMA)
Salmon Area A	Seine	Areas 1 to 10, Subarea 101-7
Salmon Area B	Seine	Areas 11 to 29 and 121
Salmon Area C	Gill net	Areas 1 to 10, Subarea 101-7
Salmon Area D	Gill net	Areas 11 to 15 and 23 – 27
Salmon Area E	Gill net	Areas 16 to 22, 28, 29 and 121
Salmon Area F	Troll	Areas 1 to 10, 101 to 110, 130 and 142
Salmon Area G	Troll	Areas 11, 20 to 28, 111, 121, 123 to 127 and Subareas 12-5 and 12-6
Salmon Area H	Troll	Areas 12 to 19, 28 and 29

For south coast PFMA's please see Figure 1-1 of this IFMP

9 APPENDIX 9: CHINOOK AND COHO HEAD RETENTION REQUIREMENTS FOR FREEZER TROLLERS

9.1 Head Retention

Troll vessel masters that are freezing their catch at sea must retain all heads from all chinook and coho kept. At a minimum, the portion of each head retained must include the upper portion of the head extending from the tip of the snout to a cut travelling from the top of the head, passing 1 centimetre behind the eye, and ending at the back corner of the mouth. The figure to the right indicates the minimum portion of each head that must be retained



9.2 Head Storage

Heads must be stored using special purpose bags and labels available free of charge from the Department. These bags and labels are supplied free of charge by the Department and can be obtained in three ways:

a) Pick them up at Pacific Fishery Licensing Unit offices in Nanaimo, Prince Rupert, and Vancouver.
b) Make arrangements for delivery by contacting the Department toll-free at 1-866-483-9994.
c) Get them from coded-wire tag samplers at fish plants.

Each bag must contain only the heads from a single week of fishing (where weeks run from Sunday to Saturday). This requirement had been added to maximize the run timing information obtained through coded wire tag sampling of the heads.

Finally, heads must be kept frozen until delivery.

9.3 Head Delivery

The vessel master shall ensure that all bags containing heads are offloaded at the first designated fish landing station at which chinook and/or coho catch is offloaded. All bags must be securely closed, and labeled with vessel name and V.R.N., the first and last day of fishing on which the heads contained in the bag were caught, and the Management Area(s) in which those salmon were caught. Contact J O Thomas & Assoc. for sampling and collection details: phone toll-free 1-800-663-3344. Please call one day in advance of offload.

For exact head retention requirements, trollers freezing their catch should refer to their Conditions of Licence.

10 APPENDIX 10: LOGBOOK SAMPLES

SALMON TROLL Logbook I.D. # **T** ***SAMPLE*** **Report Catch to: 1-(888) 387-0007** Record all catch in pieces **Page #**

Vessel Name: ***Pacific Blue*** VRN (CFV#): ***12346*** Vessel Master Name: ***Dan Doe*** [1] FIN: ***######***

Date Day	Date Mon	Mgmt. Area	Zone ☐ or Subarea ☒	Hours fished	Catch frozen or iced?	[2] Kept or Released	Sockeye	Coho	Pink	Chum	[3] Legal Sized Chinook	[3] Sublegal Sized Chinook	[4] Grilse	Atlantic	[5] Rockfish	[6] Other Species
15	*Jul*	*4*	*9*	*3*	F or I	Kept	*25*	*0*	*12*	*0*	*0*			*3*	*0*	*0*
Trip ID #:	***FOS-12345***					Rel.	*0*	*0*	*0*	*0*	*3*	*3*	*5*	*0*	*8 Yellowtail, 3 Canary, 6 Silvergrey*	*4 L, 2 D*
Comments:	***8 Hake released, lots of seals around***														Confirmation #:	***FOS-12346***
15	*Jul*	*4*	*5*	*8½*	F or I	Kept	*42*	*0*	*8*	*0*	*0*			*0*	*0*	*0*
Trip ID #:	***FOS-12345***					Rel.	*0*	*0*	*0*	*0*	*2*	*5*	*1*	*0*	*8 Yelloweye, 6 unknown rockfish*	*0*
Comments:															Confirmation #:	***FOS-12346***
16	*Jul*	*5*	*1*	*10*	F or I	Kept	*12*	*0*	*0*	*0*	*0*			*0*	*0*	*0*
Trip ID #:	***FOS-12345***					Rel.	*0*	*0*	*0*	*0*	*0*	*1*	*2*	*0*	*2 Chilipepper, 2 unknown rockfish*	*0*
Comments:															Confirmation #:	***FOS-12349***
18	*Jul*	*5*	*1*	*6*	F or I	Kept	*0*	*0*	*0*	*0*	*8*			*0*	*0*	*0*
Trip ID #:	***FOS-12398***					Rel.	*0*	*6*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*1L*
Comments:	***1 Coho dead, 5 released in good condition***														Confirmation #:	***FOS-12402***
18	*Jul*	*5*	*3*	*5½*	F or I	Kept	*0*	*0*	*0*	*0*	*12*			*0*	*0*	*0*
Trip ID #:	***FOS-12398***					Rel.	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*2D*
Comments:															Confirmation #:	***FOS-12402***
19	*Jul*	*5*	*3*	*11*	F or I	Kept	*0*	*0*	*0*	*0*	*7*			*0*	*0*	*0*
Trip ID #:	***FOS-12398***					Rel.	*0*	*1*	*0*	*0*	*0*	*1*	*3*	*0*	*3 Canary*	*0*
Comments:															Confirmation #:	***FOS-12491***

1. Enter the vessel master's Fisher Identification Number.
2. **Kept** are species retained on board; **Released** are species returned to the ocean.
3. As defined in the applicable Fishery Notice.
4. **Grilse** are juvenile salmon under 30 cm.
5. If possible, rockfish are to be identified by species (using names in accompanying guide); if unsure of species, record as Unknown Rockfish.
6. Other Species: L= Lingcod, H=Halibut, D=Dogfish, M= Mackerel, S= Steelhead, B=Bird.

2012

SALMON SEINE Logbook I.D. # **S** ***SAMPLE*** **Report Catch to: 1-(888) 387-0007** Record daily catch in pieces **Page #**

Vessel Name: ***Pacific Blue*** VRN (CFV#): ***12346*** Vessel Master Name: ***Dan Doe*** [1] FIN: ***######***

Daily Catch Records

Date Day	Date Mon.	Mgmt. Area	Sub-area(s)	Hours fished	# of sets	[2] Kept or Released	Sockeye	Coho	Pink	Chum	*Adult* Chinook	[3] *Jack* Chinook	Steel-head	Atlantic	[4] Other Fish	[5] Non-fish
14	*Aug*	*3*	*3-3, 3-2*	*8*	*5*	Kept	*42*	*0*	*431*	*0*	*0*	*0*	*0*	*6*	*0*	(Yes)
Trip ID #: [7]		***FOS-12281***				Rel.	*0*	*3*	*0*	*12*	*2*	*0*	*0*	*0*	*0*	No
Comments:		***2 scoters released alive at 10 AM,1 coho clipped, 2 coho dead, 1 alive at release***											DCR Confirmation #: [6]		***FOS-12346***	
15	*Aug*	*4*	*4-5*	*5½*	*2*	Kept	*38*	*0*	*850*	*0*	*0*	*0*	*0*	*0*	*0*	(Yes)
Trip ID #: [7]		***FOS-12281***				Rel.	*0*	*0*	*0*	*2*	*1*	*0*	*1*	*0*	***4 D, 1 L, 1 salmon shark***	No
Comments:		***1 harbour seal released, steelhead revived in tank, then released in good condition***											DCR Confirmation #: [6]		***FOS-12358***	
19	*Aug*	*4*	*4-5*	*9*	*4*	Kept	*53*	*0*	*560*	*0*	*0*	*0*	*0*	*0*	*0*	Yes
Trip ID #: [7]		***FOS-12403***				Rel.	*0*	*2*	*0*	*17*	*4*	*12*	*0*	*0*	*0*	(No)
Comments:		***Both coho rel'd in good condition. 12 jack chinook squishers all dead.***											DCR Confirmation #: [6]		***FOS-12428***	

Offload Catch Records

Dates Fished First date Day	First date Month	Last date Day	Last date Month	# Days fished	Date offloaded Day	Date offloaded Month	Sockeye	Coho	Pink	Chum	Chinook	(Other)	Complete if catch pooled with that of another vessel: Received from:	Offloaded to:	Vessel
							☐ Pieces ☒ Lbs ☐ Kgs	☐ Pcs ☐ Lbs ☐ Kgs	☐ Pieces ☒ Lbs ☐ Kgs	☐ Pieces ☐ Lbs ☐ Kgs	☐ Pieces ☐ Lbs ☐ Kgs	☐ Pcs ☒ Lbs ☐ Kgs			
14	*Aug*	*15*	*Aug*	*2*	*15*	*Aug*	*471*	*0*	*3958*	*0*	*0*	*42*	☐	☐	Name:
Business and port offloaded to: ***Canfisco, Pr. Rupert***								Fish slip #: ***79768***			OCR Confirmation #: 6 ***FOS-12380***				VRN (CFV#):
19	*Aug*	*19*	***Aug***	*1*	*20*	*Aug*	*310*	*0*	*1692*	*0*	*0*	*0*	☐	☑	Name: ***Home Run II***
Business and port offloaded to:								Fish slip #: ***79801***			OCR Confirmation #: 6 ***FOS-12482***				VRN (CFV#): ***12347***

1. Enter the vessel master's Fisher Identification Number.
2. Kept are species retained on board; Released are species returned to the ocean.
3. **Jack Chinook** are all chinook smaller than 67 cm fork length. Note that 67cm is approximately 26 inches.
4. **Other Fish**: M= Mackerel, L= Lingcod, H= Halibut, D= Dogfish, R=Rockfish. Give full name for other species.
5. Circle Yes or No as appropriate if any **birds**, **marine mammals**, or **turtles** were encountered. Give time of capture and species details in comments.
6. **DCR Confirmation #** is the confirmation number received upon completion of the Daily Catch Report. **OCR Confirmation #** is the confirmation number.
7. Fill in if Start Fishing Report is required by Licence Condition.

2012

SALMON GILLNET Logbook I.D. # **G** ***SAMPLE*** **Report Catch to: 1-(888) 387-0007** Record all catch in pieces **Page #**

Vessel Name: ***Pacific Blue*** VRN (CFV#): ***12346*** Vessel Master Name: ***Dan Doe*** FIN: ******

Net Details Type[1]: ***A*** # Strands[2]: ***6*** Length: ***200*** (fathoms) Weedline Depth[3]: ***30cm*** Hang Ratio: ***3*** :1 Mesh Size[3]: ***4 7/8"*** # Meshes: ***90***

Date Day	Date Mon	Mgmt. Area	Sub-area(s)	Hours fished	# of sets	[4] Kept or Released	Sockeye	Coho	Pink	Chum	Chinook	Steel-head	Atlantic	Dogfish	Sturg-eon	[5] Other Fish	[6] Non-fish
3	*Aug*	*4*	*4-12*	*5.5*	*5*	Kept	*4*	*0*	*23*	*127*	*0*	*0*	*0*	*0*	X	*0*	Yes
Trip ID #:[7]	*FOS-12345*					Rel.	*0*	*9*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	No
Comments:	*2 birds killed in 10AM set, kept for research program. Probably surf scoters.*															Confirmation #: *FOS-12346*	
5	*Aug*	*4*	*4-12, 4-15*	*4*	*3*	Kept	*73*	*0*	*245*	*4*	*0*	*0*	*1*	*0*	X	*0*	Yes
Trip ID #:[7]	*FOS-12480*					Rel.	*0*	*2*	*0*	*0*	*0*	*0*	*0*	*2*	*0*	*2M, 1 salmon shark*	No
Comments:	*Both coho put in rev. tank, one died, one released in good condition*															Confirmation #: *FOS-12367*	
5	*Aug*	*5*	*5-1*	*2*	*3*	Kept	*88*	*0*	*116*	*7*	*0*	*0*	*2*	*0*	X	*0*	Yes
Trip ID #:[7]	*FOS-12480*					Rel.	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*11 M, 2 R*	No
Comments:	*Steelhead released in good condition. 2 sea lions released alive around 11AM.*															Confirmation #: *FOS-12372*	
8	*Aug*	*29*	*29-13*	*6*	*6*	Kept	*163*	*0*	*328*	*0*	*0*	*0*	*0*	*0*	X	*0*	Yes
Trip ID #:[7]	*FOS-12773*					Rel.	*0*	*0*	*0*	*0*	*3*	*1*	*0*	*0*	*0*	*0*	No
Comments:	*4 coho put in rev. tank, 2 of them died, 2 released in good condition*															Confirmation #: *FOS-12502*	
9	*Aug*	*29*	*29-13*	*6*	*6*	Kept	*205*	*0*	*493*	*0*	*0*	*0*	*0*	*0*	X	*0*	Yes
Trip ID #:[7]	*FOS-12773*					Rel.	*0*	*0*	*0*	*0*	*1*	*1*	*0*	*0*	*0*	*0*	No
Comments:	*Net changed this AM to one with weedline at 0" (otherwise the same).*															Confirmation #: *FOS-12521*	
						Kept									X		Yes
Trip ID #:						Rel.											No
Comments:																Confirmation #:	

1. **Net Types**: enter '*A*' for Alaska Twist, '*M*' for Multi Strand or '*C*' for Combination.
2. Enter number of strands if net is 'Alaska Twist' type mesh.
3. Give measurement units (*in* or " = inches, *cm* = centimeters, *mm* = millimeters).
4. **Kept** are species retained on board; **Released** are species returned to the ocean.
5. **Other Fish**: M= Mackerel, L= Lingcod, H= Halibut, R= Rockfish. Give full name for other species.
6. Circle Yes or No as appropriate if any **birds, marine mammals,** or **turtles** were encountered. Give time of capture and species details in comments.
7. Fill in if Start Fishing Report is required by Licence Condition.

2012

11 APPENDIX 11: SALMON ENHANCEMENT OBJECTIVES

DFO's Salmonid Enhancement Program (SEP): major hatchery and spawning channel facilities undertake salmon production to support vulnerable stocks and to provide harvest opportunities through sustainable fisheries. DFO also works with hatcheries operated by volunteers, community and First Nation groups under contract to DFO to meet shared objectives for cooperative fisheries, public stewardship, habitat conservation and fish production.

For the 2013 brood year, targets are included for: major DFO Operations (OPS) facilities, contracted Community Economic Development Program hatcheries (CEDP), and larger or more complex Public Involvement Projects (Designated Public Involvement or DPI) operated by volunteers. Not detailed are smaller Public Involvement Projects (PIPs) that are focused toward stewardship, stock rebuilding or educational activities and do not release large numbers of fish that would affect fisheries. Facilities may also enhance steelhead and cutthroat trout; however, targets are not included as management of these species is under the authority of the Province of British Columbia. The proposed targets dataset is preliminary, and the final version will be available May 1, 2013.

Refer to the link below for information regarding 2013 brood proposed targets:
http://www.pac.dfo-mpo.gc.ca/sep-pmvs/index-eng.htm

12 APPENDIX 12: GLOSSARY

A comprehensive glossary is available online at:

http://www.pac.dfo-mpo.gc.ca/fm-gp/species-especes/salmon-saumon/gloss-eng.htm

List of acronyms used in this plan:

AABM	Aggregate Abundance-Based Management
AAROM	Aboriginal Aquatic Resource and Oceans Management
AHC	Area Harvest Committee
AFS	Aboriginal Fisheries Strategy
ATP	Allocation Transfer Program
COHO ABM	Coho Abundance-Based Management
COSEWIC	Committee for the Status of Endangered Wildlife in Canada
CPUE	Catch Per Unit Effort
CSAB	Commercial Salmon Advisory Board
CWT	Coded Wire Tag
ESSR	Excess Salmon to Spawning Requirements
FRP	Fraser River Panel
FSC	Food, Social and Ceremonial
IHPC	Integrated Harvest Planning Committee
ISBM	Individual Stock-Based Management
MCC	Marine Conservation Caucus
MVI	Mid Vancouver Island
PICFI	Pacific Integrated Commercial Fisheries Initiative
PSARC	Pacific Scientific Advice Review Committee
PSC	Pacific Salmon Commission
PST	Pacific Salmon Treaty
RCA	Rockfish Conservation Area
SARA	Species at Risk Act
SEP	Salmonid Enhancement Program
SFAB	Sport Fishing Advisory Board
SHMF	Selective Hatchery Mark Fishery
TAC	Total Allowable Catch
WCVI	West Coast Vancouver Island
WSP	Wild Salmon Policy (*Canada's Policy for Conservation of Wild Pacific Salmon)*