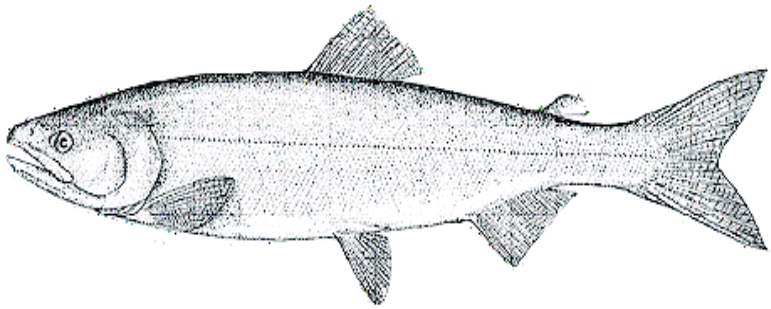
PACIFIC REGION

INTEGRATED FISHERIES MANAGEMENT PLAN

SALMON
NORTHERN B.C.
JUNE 1, 2014 - MAY 31, 2015



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:
www.pac.dfo-mpo.gc.ca/ops/fm/toppages/contacts_e.htm

24 Hour Recorded Information (Commercial)	Vancouver	(604) 666-2828
	Toll Free	(888) 431-3474
Pacific Salmon Commission (PSC) Office		(604) 684-8081
PSC Test Fisheries (Recorded, In-Season Information)		(604) 666-8200

Recreational Fishing: www.pac.dfo-mpo.gc.ca/fm-gp/rec/index-eng.htm
Commercial Fishing: 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
Salmon and PICFI Director	Lisa Kerr	(604) 666-0208
Regional Resource Manager - Salmon	Jeff Grout	(604) 666-0497
Regional Salmon Officer	Kelly Binning	(604) 666-4902
Regional Recreational Fisheries Co-ordinator	Devona Adams	(604) 666-3271
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 Fishery Licence Unit (By appointment only) Toll-Free 1-877-535-7307
200-401 Burrard Street Email: fishing-peche@dfo-mpo.gc.ca
Vancouver, B.C. V6C 3S4

North Coast Area

Area Director	Mel Kotyk	(250) 627-3416
Area Chief, Conservation and Protection	Andy Lewis	(250) 615-5362
Area Chief, Salmon Stock Assessment	Dave Peacock	(250) 627-3467
A/Salmon and Herring Section Head	Sandra Davies	(250) 627-3426
Resource Manager - Haida Gwaii AFS and Commercial	Victor Fradette	(250) 559-4467
Assistant Resource Manager – Haida Gwaii	Peter Katinic	(250) 559-8330
Resource Manager - Nass/Skeena (Areas 3 to 5)	Corey Martens	(250) 627-3425
Assistant Resource Manager - (Areas 3 to 5)	Diana Freethy	(250) 627-3421
Resource Manager - Inland Demonstration Fisheries	Sandra Davies	(250) 627-3426
Resource Manager - Central Coast commercial, rec	Dan Wagner	(250) 799-5345
Resource Manager - Central Coast AFS	Kristen Wong	(250) 799-5346
Resource Manager - Northern Troll	Peter Katinic	(250) 559-8330
A/Resource Manager - Recreational Fisheries	Angela Mahboubi	(250) 627-3409
Salmon Management Biologist, North Coast	Peter Hall	(250) 627-3457

Resource Manager, AFS North Coast coastal	Karen Kimura-Miller	(250) 627-3020
Resource Manager, AFS North Coast interior	Melanie Anthony	(250) 847-5108

Aquaculture Management:

Regional Marine Finfish Coordinator – IMAPs	Brenda McCorquodale	(250) 949-6434
Senior Finfish Coordinator – Licensing	Bernie Taekema	(250) 754-0398
Finfish Officer	Shirley Choi	(250) 754-0408
Senior Freshwater Coordinator – Licensing	Gabrielle Kosmider	(250) 754-0363
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, Navigation 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.html

Reports and Discussion Papers, New Directions Policy Series, Agreements

Oceans Program (http://www.pac.dfo-mpo.gc.ca/oceans/index-eng.html)

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) or http://www.pac.dfo-mpo.gc.ca/abor-autoc/index-eng.html or http://www.dfo-mpo.gc.ca/fm-gp/aboriginal-autochtones/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.html

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 BC Tidal Waters Sport Fishing Guide and Freshwater Supplement; Rockfish Conservation Areas, Shellfish Contamination Closures; On-line Licencing

Commercial Fisheries http://www.pac.dfo-mpo.gc.ca/fm-gp/index-eng.html

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

Licencing (http://www.pac.dfo-mpo.gc.ca/fm-gp/licence-permis/index-eng.htm)

Contact information; Recreational Licencing 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/BC Interior Area Resource Management and Stock Assessment

http://www.pac.dfo-mpo.gc.ca/fm-gp/fraser/index-eng.html

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/fm-gp/northcoast-cotenord/index-eng.html

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.html

Fisheries Management; Recreational fisheries; Habitat; Licencing; Contacts

PACIFIC REGION - SALMONID ENHANCEMENT PROGRAM

Main Page http://www.pac.dfo-mpo.gc.ca/sep-pmvs/index-eng.html

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.html

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 Northern 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 2014/2015

Key Changes for the 2014/15 North Coast Salmon IFMP

Nass Sockeye Decision Guidelines: coho retention (section 7.4)
Skeena Sockeye Seine ITQ Demonstration fishery: industry funded at-sea observers (section 7.5)
North Coast Troll Decision Guidelines: in-season WCVI chinook harvest rate estimation (section 7.13)
Nass Chum Rebuilding Plan (Appendix 13)
Skeena Chum Rebuilding Plan (Appendix 14)

Fraser River Spring and Summer 5_2 Chinook Management Approach

No changes are planned for 2014. Please refer to Section 5.1.4 for more information.

Catch Monitoring

Commercial Pilots:

Commercial pilot programs initiated under the Strategic Framework for Fishery Monitoring and Catch Reporting in the Pacific Fisheries (see Section 1.6.3) in 2013 are planned to continue in order to address the minimum catch monitoring requirements identified by DFO and the Commercial Salmon Advisory Board Catch Monitoring Working Group (CSAB CMWG). The pilots programs will occur in competitive (full-fleet) fisheries in Area A seine for pink and sockeye (PFMA 3 and 6); Area C gill net for sockeye (Skeena and Nass), Area D gill net for sockeye (Johnstone Strait), Area E gill net for sockeye (Fraser River) and Area G troll for chinook (WCVI). Please see Appendix 7, section 7.1 for more information.

Recreational:

The Sport Fishing Advisory Board (SFAB) and the recreational fishing sector strongly support effective fishery monitoring and catch reporting programs in recreational fisheries. The SFAB has been working with DFO on initiatives to strengthen fishing monitoring and catch reporting in the recreational fishery for a number of years and has developed a plan to meet the objectives of the Strategic Framework for Fishery Monitoring and Catch Reporting in the Pacific Fisheries (see Section 1.6.3).

As of 2013, recreational harvesters are required as a condition of the Tidal Waters Sport Fishing License to report information on their recreational fishing activity and catch to DFO representatives when requested. Commonly, recreational harvesters may be requested by a Fishery Officer or designated DFO representative at the dock or through a creel survey to provide important catch and effort information. A recreational phone survey is also conducted nationally by DFO every 5 years. In 2012, a new internet survey was initiated to provide monthly estimates of effort for all methods of recreational fishing, including angling, trapping, beach collecting and diving, and to provide monthly estimates of catch for all sport caught species.

Information on the internet recreational survey is available at:
http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/irec/index-eng.html

First Nations:

The Strategic Framework for Fisheries Monitoring and Catch Reporting in the Pacific Fisheries (see Section 1.6.3) is being applied in First Nation FSC fisheries across the region including assessing current monitoring practices, programs and gaps much like what was done initially in the commercial salmon process, in collaboration with the First Nations Fishery Council (FNFC) and other area aggregate groups to communicate the requirements of the Framework and importance of improving catch information. In addition, a significant focus has been on the development of integrated and coordinated data management and data entry systems within DFO and First Nation Band offices.

Licencing Service Changes

Fisheries and Oceans Canada (DFO) introduced the web-based National Online Licensing System (NOLS) in the spring of 2013. This web-based system replaces in-person counter service at Pacific Fishery Licencing Units. Fish harvesters/Licence Holders/vessel owners will now use the new online system to view, pay for and print their commercial fishing licences, licence conditions and/or receipts.

Fish harvesters must log into the National Online Licencing System to register and activate their accounts, using the DFO Passcode that has been mailed to them, in order to pay the fees and request issuance of a licence.

Licence renewal and payment of fees is mandatory on an annual basis prior to the expiry date of each fishery, in order to maintain the eligibility to be issued the licence in the future. Please note the licence eligibility will cease if it is not renewed annually.

In early 2014, forms will continue to be necessary where a designated vessel is required. No forms will be sent to Salmon licenced vessel owners. Forms will be provided to communal commercial licence holders/vessel owners by mail and the payment required will be processed through the National Online Licencing System.

Upon the Department receiving the required payment, documentation and all necessary information (i.e. logbook clearance), the licence will be issued and notification will be sent via email to advise Licence Holders/vessel owners that a change has been made to the licence holder's online account. The licence documents, licence conditions and receipt will be available to be printed at that time.

Later in 2014, a "request" feature to collect designated vessel details will be available through the National Online Licensing System and forms will no longer be required. Licence holders/vessel owners will need to submit the fee payment and option/vessel information online.

Until such time, fish harvesters will continue to submit the form to the Pacific Fishery Licence Unit while making the fee payments through the National Online Licensing System.

For transactions that are not yet available in the National Online Licensing System (e.g. Vessel replacements and nominations), licensing services will continue to be available either through telephone (1-877-535-7307), email (fishing-peche@dfo-mpo.gc.ca) or fax (604-666-5855). Please be sure to visit the Pacific Region Licensing website and subscribe to fishery notices for updates on the National Online Licensing System and licensing services: http://www.pac.dfo-mpo.gc.ca/fm-gp/licence-permis/index-eng.html

Information on the new system may be found on the DFO internet site at: http://www.dfo-mpo.gc.ca/fm-gp/sdc/cps/licence-permis-eng.htm

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. 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 (starting April 1, 2013 to March 31, 2015 pending completion of Track 2).

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.

Salmon projects planned for 2014 include: Pacific Salmon Commission projects (9 Fraser Panel projects; Albion chinook/chum gillnet; Skeena gillnet; Johnstone Strait chum seine); Barkley Sound seine; and Cowichan/Saanich seine.

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.

See Appendix 7, Section 7.5

1. OVERVIEW

1.1 Introduction

This 2014/2015 Northern B.C. Salmon Integrated Fisheries Management Plan (IFMP) covers the period June 1, 2014 to May 31, 2015.

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, whiles 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 provided in the IFMP provide information such as the post season review, and the fishing plans for the 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. These magnificent fish have been an important part of both the diet and culture of First Nations people. Since the late 1800s, salmon have supported a vibrant commercial fishing industry, vital to the establishment and well being of many coastal communities. Salmon, particularly chinook and coho, also play a key role in the west coast recreational fishery.

1.3 Types of Fishery and Participants

This plan describes the management of First Nations, recreational and commercial fisheries for Pacific salmon in northern 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 is designed to describe the approach to fisheries in tidal and non-tidal waters from Cape Caution north to the B.C./Alaska border, including the Skeena River watershed (Figure 1-1).

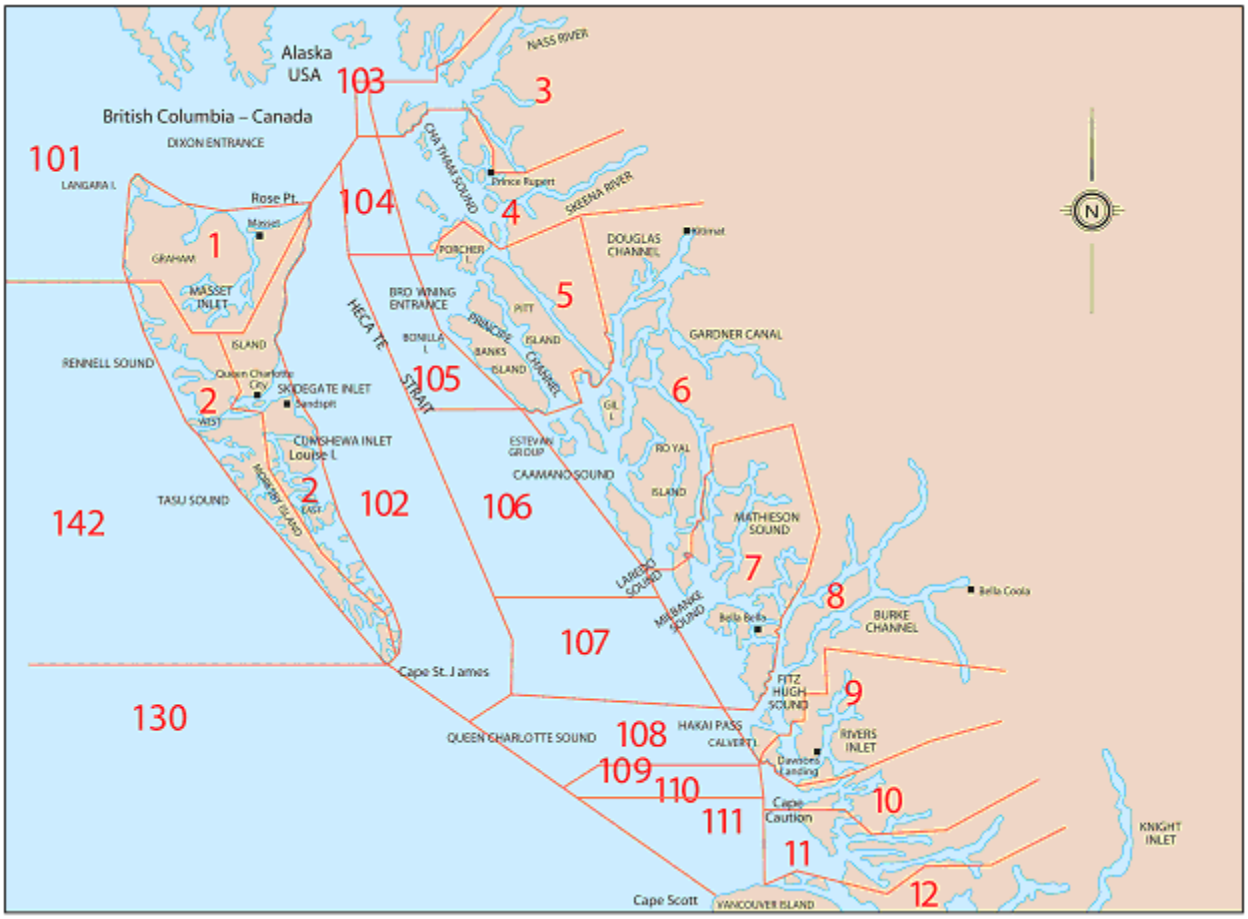


Figure 1-1. Management Areas for Northern B.C.

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*. 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.
- Inland demonstration fisheries (Nass River and Skeena River) to date are supported through licences relinquished from the commercial salmon fleet from the ATP and PICFI programs and private business arrangements from industry.
- 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. Tidal licences are issued by DFO. Non-tidal licences are issued by the Province. 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 reduces impacts on non-target species. 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.

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 all 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, and 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, 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 or WSP) 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 6 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, and 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 1990 Supreme Court of Canada's *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.

In addition to fishing opportunities for FSC purposes, DFO acknowledges that in *Ahousaht Indian Band et al. v. Canada and British Columbia*, the courts have found that 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 "aboriginal rights to fish for any species of fish within their Fishing Territories and to sell that fish, with the exception of geoduck". The Department is working with the First Nations pursuant to the rights found by the courts, to find "the manner in which their rights can be accommodated and exercised without jeopardizing Canada's legislative objectives and societal interests in regulating the fishery."

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. For 2014-2015, there are 20 AAROM agreements in the Pacific Region. The 20 AAROM Organizations are Aboriginal Aquaculture Association, A-Tlegay Fisheries Society, Canadian Columbia River Inter-Tribal Fisheries Commission, First Nations Fishery Council, Fraser River Aboriginal Fisheries Secretariat, Central Coast Indigenous Resource, Q'ul'lhanumutsun Aquatic Resources Society, Island Marine and Aquatic Working Group (IMAWG), Sumas First Nation (LFFA), Nlaka'pamux Nation Tribal Council, North Coast Skeena FNs Stewardship Society, Nuu-chah-nulth Tribal Council, Okanagan Nation Alliance, Pacific Salmon Commission – FNFC, Secretariat of the Haida Nation, Shuswap Nation TC (Secwepemc), Skeena Fisheries Commission, Sto:lo Nation, Sto:lo Tribal Council, and Upper Fraser Fisheries Conservation Alliance.

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 as well as improving the overall management of Fisheries. 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 years. PICFI has supported fisheries reforms by targeting on the following outcomes: 1) greater stability of access for commercial harvesters through increasing FN participation in commercial fisheries; 2) increased compliance with fishing rules and greater confidence in catch data through strengthened fisheries monitoring , catch reporting and enforcement and improved collection, storage of catch information; 3) collaborative management mechanisms for all harvest sectors, including the growing aboriginal commercial participants. To continue to build on the progress achieved to date and to continue promoting the integration of commercial fisheries, Economic Action Plan 2014 announced a two year renewal of the Pacific Integrated Commercial Fisheries Initiative, until the end of 2015-16.

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 the 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. More information is available at: http//www.pac.dfo-mpo.gc.ca/fm-gp/docs/framework_monitoring-cadre_surveillance/page-1-eng.html

1.7 Consultation

This plan incorporates the results of consultations and input from the Integrated Harvest Planning Committee (IHPC), composed of First Nations, and recreational and commercial advisors, and the Marine Conservation Caucus (MCC), which represents a coalition of "conservation" organizations.

Fisheries and Oceans Canada will continue to consult with First Nations (through the First Nations Salmon Coordinating Committee (SCC) 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.

The Integrated Harvest Planning Committee (IHPC) for salmon is composed of First Nations, recreational and commercial interests (as represented by the SFAB and the CSAB), and the MCC. This committee is recognized to be a primary source of input into Salmon Integrated Fisheries Management Plans.

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, southwestern 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 accounts for about 75% of the total salmon numbers.

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 1 week to 2 years. Most then go to sea for 1-5 years, undertaking a large ocean-feeding migration, although sockeye have also developed a land-locked form (kokanee). In the ocean, the 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: 1-3 kg, pink; 5-7 kg, chum; 3.5-7 kg, coho; 2-4 kg, sockeye; 6-18 kg, chinook (the largest recorded chinook was 56.8 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 kilometres. Chum, coho and pink usually spawn closer to the sea.

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 kilometres 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 2-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 kilometres 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 generally 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 3 to 6 years. Sockeye that live exclusively in fresh water are called kokanee.

Chum salmon generally spawn in the fall usually in the lower tributaries along the coast, rarely more than 150 kilometres inland. Fry emerge in the spring and go directly to sea. Chum generally mature in the 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 B.C. 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. Salmon are also a major part of First Nations, commercial, and recreational fishing in British Columbia.

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.
- 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 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 Initiative
- http://www.pac.dfo-mpo.gc.ca/science/oceans/detroit-Georgia-strait/index-eng.htmlFraser River Watershed Watch,
- monitoring of physical and chemical ocean conditions, and
- chlorophyll and phytoplankton timing and abundance.
- 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/Traditional Ecological Knowledge:

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 gathered over time 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 aquatic environments, and biodiversity.

In the Pacific Region, salmon stock assessment advice is provided by the Stock 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:

1. 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 457 discreet Conservation Units.
2. 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 be determined based on a CU's biological status relative to these benchmarks. Management will focus on conservation measures for CUs 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).
3. 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 Science 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/science/psarc-ceesp/index-eng.html

2.5 Data Sources

Existing reports on the status of salmon and the environmental and ecosystem overviews are available from CSAP web site:

http://www.isdm-gdsi.gc.ca/csas-sccs/applications/Publications/index-eng.asp

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/outlook-perspective/salmon_outlook-perspective_saumon-2014-eng.html

Formal salmon abundance forecasts are generally completed by April.

DFO is continuing to implement WSP Strategy 1.2, determination of biological benchmarks and assess status. Benchmarks for Fraser Sockeye Conservation Units were developed in 2010 and Status of Fraser River Conservation Units were reviewed in 2011, both through Canadian Science Advisory Secretariat (CSA) Regional Peer Review (RPR) processes. DFO completed a CSAS RPR review of WSP benchmarks and status for Southern BC Chinook in February 2014, and an assessment of WSP benchmarks and status is planned for Interior Fraser Coho in the fall of 2014.

Additional information about CSAS, the CSAS schedule of RPRs and publications can be found at http://www.dfo-mpo.gc.ca/csas-sccs/index-eng.htm.

2.6 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 continuation of the 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 Coho Conservation Strategy, Cultus Lake Sockeye Conservation Strategy) and international (e.g. Pacific Salmon Treaty) processes.

2.7 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 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.
- 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.
- Ongoing research related to improving forecasting ability for salmon stocks and CU's 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.htmlThe 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/index-eng.html
- DFO scientists and in collaboration with other organizations (North Pacific Anadromous Fish Commission (NPAFC), 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 program is a five-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 stocks in Canada and U.S. 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 ECONOMIC, SOCIAL AND CULTURAL 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 North 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 in the economic opportunities offered by fisheries. Also, five Nuu-chah-nulth First Nations have aboriginal rights

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[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.

[2] DFO internal analysis. Note that values paid for final goods (such as angler expenditures on fishing trips) should not be considered measures of economic impact of a sector.

to fish for any species of fish within their Fishing Territories and to sell that fish, with the exception of geoduck.

Appendix 5 provides background and details with regard to the Northern BC/Skeena 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 arrangement, these are evaluated against a common set of criteria. 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 in 2013-2014, there were 84 AFS agreements, representing 165 First Nations that contain provisions relating to salmon management including, but not limited to, FSC fishery arrangements. Among the areas, BC Interior had 18 agreements, Lower Fraser had 14, North Coast had 17, South Coast had 32, and the Yukon had 3. 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 2013-2014, there were 19 AAROM agreements in the Pacific Region, 4 of which were in the North Coast.

3.2 Recreational Sector

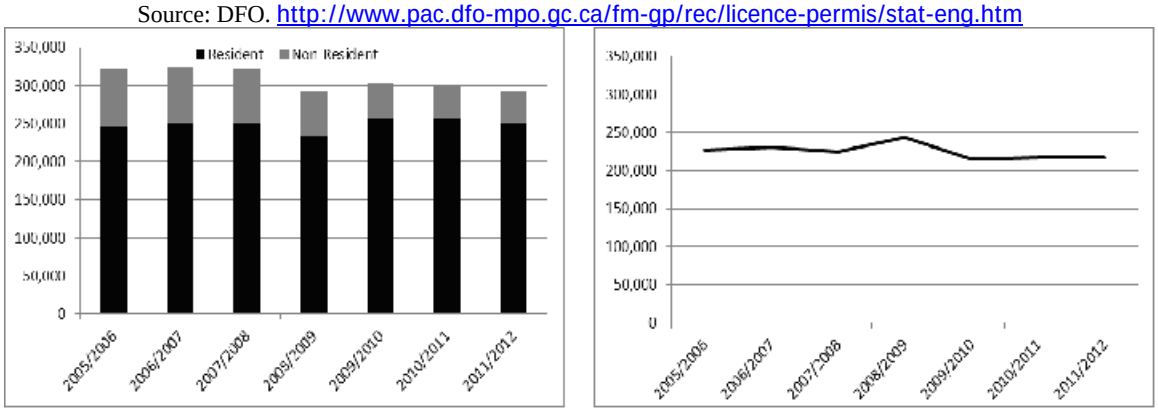
Recreational fishing for salmon may occur to provide food for personal use, as a leisure activity, or as a combination of the two. These activities provide a range of benefits to the participants as well as contribute directly and indirectly to the economy. Based on the 2010 Survey of Recreational Fishing 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. Recreational fishing effort for North Coast salmon accounted for roughly 15% of angler expenditures in 2010, or $107 million[2].

[2] DFO internal analysis. Note that values paid for final goods (such as angler expenditures on fishing trips) should not be considered measures of economic impact of a sector.

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 the 2005 survey, 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 starting in the 2008/09 season (Figure 3-1, below). 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). 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 B.C. 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[3]. Fishing opportunities in B.C.'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[4]. A further 19% would have shortened their stay in the province.

[3] 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.

[4] 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	$ 132,541,159.85	$ 21,316,825	$ 238,863,192	$ 392,721,177
Canadian nonresident	$ 28,954,992	$ 24,803,927	$ 29,504,129	$ 83,263,048
Other nonresident	$ 62,584,071	$ 51,397,057	$ 14,775,795	$ 128,756,923
Total	$ 224,080,223	$ 97,517,809	$ 283,143,116	$ 604,741,147
	2005			
	Direct Expenses	Packages	Investments	Total
Resident	$ 157,375,516.04	$ 44,316,442	$ 274,110,155	$ 475,802,113
Canadian nonresident	$ 35,432,857	$ 41,459,989	$ 13,025,827	$ 89,918,674
Other nonresident	$ 50,783,457	$ 66,195,312	$ 8,509,694	$ 127,488,463
Total	$ 243,591,830	$ 153,971,744	$ 295,645,676	$ 693,209,250
	2010			
	Direct Expenses	Packages	Investments	Total
Resident	$ 197,927,777	$ 50,135,233	$ 314,717,439	$ 562,780,448
Canadian nonresident	$ 32,843,079	$ 24,942,920	$ 18,536,662	$ 76,322,661
Other nonresident	$ 33,003,549	$ 28,721,219	$ 4,992,473	$ 66,717,241
Total	$ 263,774,405	$ 103,799,372	$ 338,246,574	$ 705,820,350

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 2010 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. North Coast salmon are a significant draw for fishing lodges and other businesses offering fishing packages, accounting for 42% of package expenditures in 2010[5].

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/consultation/smon/sfab-ccps/docs/rec-vision-eng.pdf

3.3 Commercial Sector

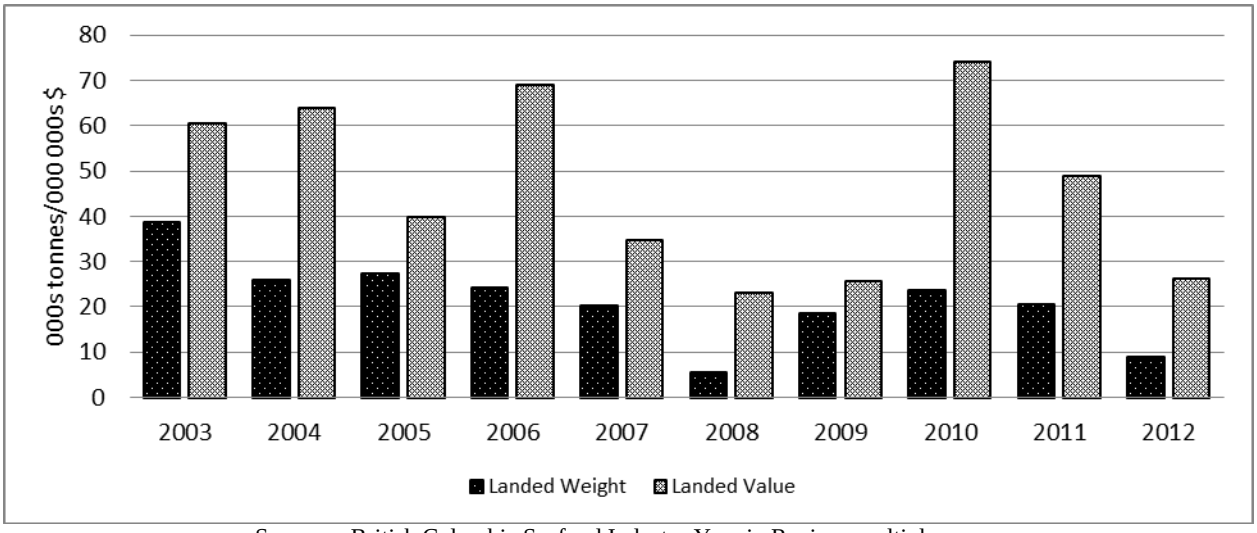
In B.C., the salmon fishery is a limited access, competitive fishery[6]; however, several parts of the fishery have operated under individual quotas during the past five years. Since 2005, five areas using seine, troll and gill net troll gear participated in demonstration fisheries with alternative

[5] DFO Internal analysis
[6] Other names for this style of fishery include derby and Olympic style fishery.

implementations of individual quotas or pooling arrangements. In addition, there have been several commercial First Nations Economic Opportunity and demonstration fisheries in inland areas. Commercially-harvested salmon supports B.C.'s seafood processing sector, much of which is ultimately exported, bringing new money into the province. BC Stats (2013) estimates that the commercial salmon fishery directly contributed $15.2 million to the gross domestic product (nominal) in 2011[7].

During the last decade, salmon contributed an average of 12.5% of the landed value and 10.8% of the volume of B.C. wild caught seafood (Figure 3-3 below). In 2012 dollars, the value ranged from a high of $74.0 million in 2010 to a low of almost $23.0 million in 2008. BC-wide, sockeye was the most important species in terms of landed value, followed by chinook and then chum.

Figure 3-3: Salmon landed value (2012 dollars) and harvest

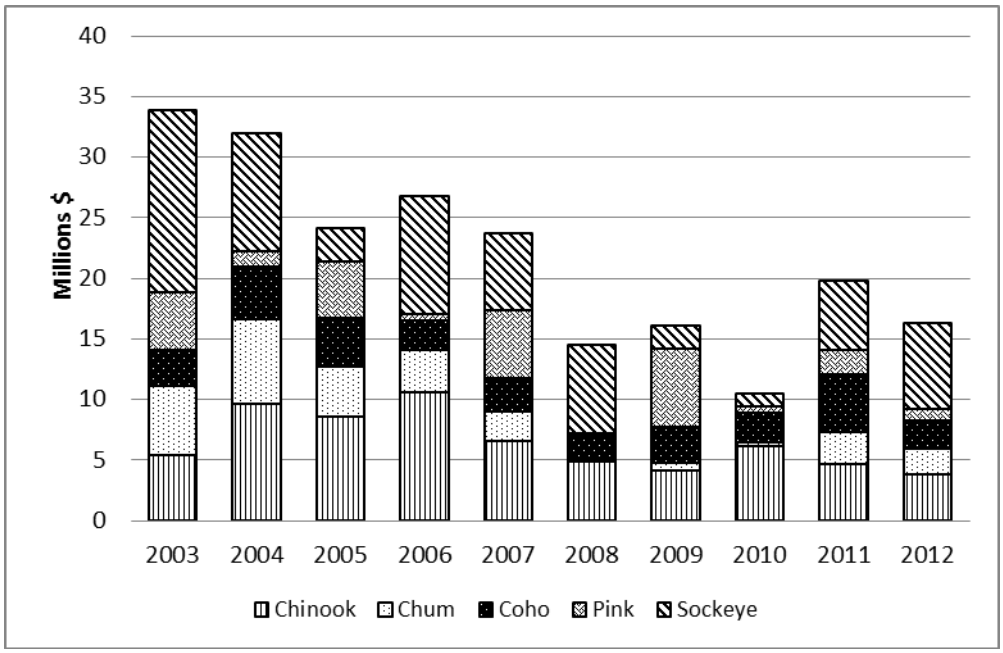


Source: British Columbia Seafood Industry Year in Review, multiple years.
Note: "Wild Salmon" here refers to salmon harvested by commercial fisheries and does not include aquaculture production.

In the decade preceding 2010, the North Coast fishery was responsible for an average of 65% of the volume of salmon landings and 60% of the landed value. The landed value of the North Coast salmon harvest shows an overall decline prior to 2010 (Figure 3-4 below), which closely mirrors the decline in landings. There was growth in the value of chinook until 2006; however, this did not offset the decline in sockeye revenues.

[7] BC Stats (2013). British Columbia's Fisheries and Aquaculture Sector, 2012 edition. Prepared for the Department of Fisheries and Oceans by BC Stats.

Figure 3-4. North Coast salmon value by species, 2003-12 (2012 dollars)



Source: DFO Pacific, Regional Data Unit.

Salmon licence values declined steadily from 2005 to 2010, reflecting poor returns to the fleet.[8] 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. Seine licences have continued to increase in value, while gillnet and troll licences have been steady. 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;[9] this was reiterated in the 2009 financial snapshot.[10] The results also suggested a positive financial performance for the troll fleet, which was enhanced further by participation in other fisheries.[11] 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 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.

The Department's general approach is that Aboriginal commercial harvest opportunities are managed using similar rules to the commercial fishery. The landings and value attributable to

[8] Nelson, Stuart. Various years. West Coast Fishing Fleet: Analysis of Commercial Fishing Licence, Quota, and Vessel Values. http://waves-vagues.dfo-mpo.gc.ca/waves-vagues/

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

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

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

Aboriginal commercial harvest are included in the values reported for the commercial sector below. Participation in the fisheries 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 gill net licences (Category N), of which 193 were in the North Coast in 2013. Of the 477 F salmon licence allocated in 2012, 190 were for the North 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. From 2005-2012, an average of 14% of A licences in the North Coast were reduced fee licences.

Since 1994, DFO has acquired a total of 477 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 2013 season, 155 communal commercial salmon licence eligibilities were issued to First Nations under the AFS and ATP, 45 were issued under PICFI, 254 were used to offset southern and northern First Nations Inland Demonstration Fisheries projects and Economic Opportunity Fishery arrangements with First Nations in the lower Fraser and Somass Rivers, and 23 were used for treaties or other contingencies. The Demonstration Fisheries proposed for 2014 are described in sections 7.4.3 and 7.5.3.

The Nisga'a are provided commercial fisheries covered by a Harvest Agreement outside of the Nisga'a Final Agreement. The Harvest Agreement came into effect in May 2000.

3.4 Processing Sector

Since 2000, salmon accounted for an average of 25% of the total wholesale value from seafood processing in B.C.[12]. Processing wild caught salmon provided about 1,394 positions in 2011, or about 30% of the B.C. total[13]. A 2008 report estimates that approximately 80% of this employment was to process domestic landings, with processing occurring primarily in the Greater Vancouver (47%) and the Skeena-Queen Charlotte (38%) regional districts.[14] Most

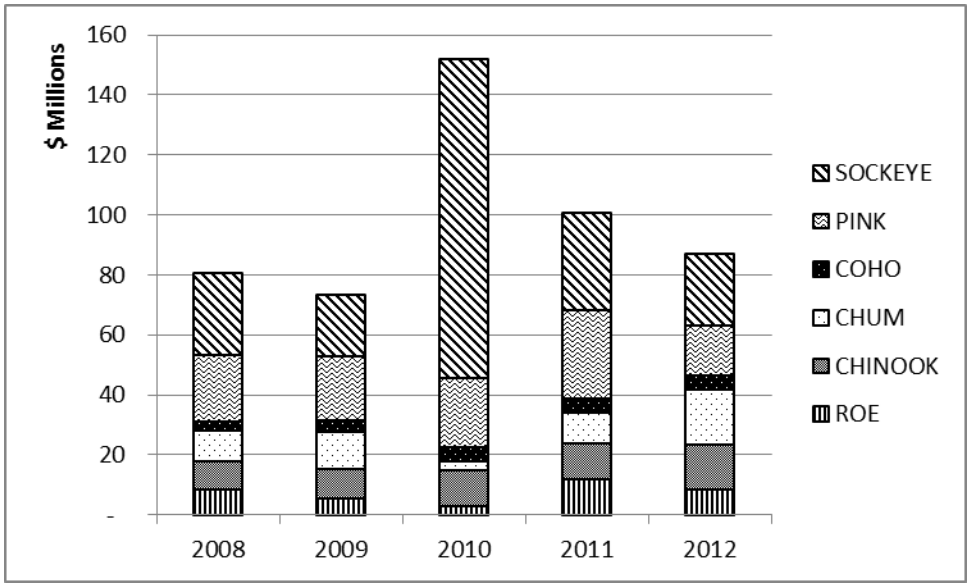
[12] British Columbia Seafood Industry Year in Review. Various years. BC Ministry of Environment.
[13] BC Ministry of Environment. 2011. 2008 British Columbia Seafood Processing Employment Survey Results. http://www.env.gov.bc.ca/omfd/fishstats/proc/employ-05.html
[14] Fraser and Associates. 2008. Linkages Between the Primary Fish Production and Fish Processing Sectors in British Columbia.

salmon harvested in the North Coast areas went to processing facilities in the Skeena-Queen Charlotte Regional District, ranging from 76% of pink landings to 56% of chinook landings; however, there appeared to be an increasing trend toward processing northern salmon in southern districts.

3.5 Export Market

British Columbia benefits from a strong seafood exports sector, valued at $870M[15] in 2012, which is supplied by the domestic wild harvest, aquaculture and raw imports. The BC Year in Review further reports that pink and sockeye salmon are among the most widely exported seafood products in 2012, being shipped to 24 and 17 countries, respectively. Over the five-year period from 2008 to 2012, B.C. exported wild salmon to some 53 countries. On average over this period, the United States accounted for 27% of the export value ($27.6 million in 2011 dollars), followed by Japan (20% and $20.4 million) and the United Kingdom (18% and $17.8 million). Japanese imports of BC salmon closely follow trends in sockeye production, Japan absorbing much of the windfall arising from the record harvest of Fraser sockeye in 2010.

Figure 3-5. Salmon Export Value by Species, 2008-12 (2012 dollars)



Source: Statistics Canada. January 2014.

The export value of wild caught salmon averaged $100 million in 2012 dollars from 2008 to 2012. On average, sockeye accounted for 42% of this value, with pink accounting for 22%. Of this value, 7% was from the sale of salmon roe, which is often produced from pink salmon.

[15] British Columbia Seafood Industry Year in Review. (2012).

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 behavior 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.

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, their habitat and ecosystems, habitat status reports in key watersheds, and strategic integrated planning initiatives for Barkley Sound, Cowichan and Southern BC chinook.

Additionally, the Department is preparing a new Wild Salmon Policy Implementation Plan, which was one of the recommendations from the 2012 Cohen Commission Final Report. This work will allow us to align with changes to legislation and programs since the policy was released in 2005, such as recent changes to the *Fisheries Act*, implementation of the Fisheries Protection Program, and Sustainable Fisheries Framework. Our intention is to start engaging First Nations and stakeholders on this work in 2014.

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.html

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. Various chapters in Annex IV of the Treaty have been renegotiated and ratified since 1985.

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 support 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 the 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. The new provisions in these 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. Before the December 31st deadline Canada and the US exchanged letters to allow for provisional approval of Chapter 4 while formal ratification processes are completed in both Canada and the United States. Provisional approval of the new Chapter 4 language means that the Fraser Panel can proceed with implementation of the new provisions for 2014.

All management regimes under Annex IV continue to be implemented by Fisheries and Oceans Canada and US agencies for the 2014 season. Key details from the chapters under Annex IV relevant to the North Coast are identified, below:

Chapter 2 (Northern Boundary): This chapter outlines the conservation and harvest sharing arrangements for Northern British Columbia and Southeast Alaska chum, sockeye and pink. This chapter along with Chapter 3: Chinook, govern fisheries covered in the North Coast Salmon Integrated Fisheries Management Plan

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"; and (iv) $1M from the US to improve the analytical models to implement the chinook agreement.

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 the three principles of 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

An integrated management plan for the Pacific North Coast Integrated Management Area (PNCIMA) has been developed to help coordinate various ocean management processes and to complement and link existing processes and tools including IFMPs. The PNCIMA is one of five national Large Ocean Management Areas identified in Canada's 2005 Oceans Action Plan, and the plan is the product of a collaborative process led through an oceans governance agreement between the Government of Canada, British Columbia and First Nations, and contributed to by a diverse group of organizations, stakeholders and interested parties. High level and strategic, the plan provides direction on and commitment to integrated, ecosystem-based and adaptive

management of marine activities and resources in the planning area as opposed to detailed operational direction for management.

The plan outlines a framework for ecosystem-based management (EBM) for PNCIMA that includes assumptions, principles, goals, objectives and strategies. This EBM framework has been developed to be broadly applicable to managers, decision-makers, regulators, community members and resource users alike, as federal, provincial and First Nations governments, along with stakeholders, move together towards a more holistic and integrated approach to ocean use in the planning area.

Implementation of the plan is the shared responsibility of all signatories to the planning process and will be undertaken within existing programs and resources.

An electronic copy of the plan will be available online at http://www.pncima.org/

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 by 2012. Regionally, the 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. Future networks of MPA's may overlap and/or include salmon fishing areas, depending on the type and nature of the MPA

More information on MPA Network Planning can be found at: http://www.dfo-mpo.gc.ca/oceans/planning/marineprotection-protectionmarine/index-eng.htm

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: http://www.pac.dfo-mpo.gc.ca/oceans/protection/mpa-zpm/index-eng.html

4.3.5 National Marine Conservation Areas

Gwaii Haanas

Gwaii Haanas National Park Reserve, National Marine Conservation Area Reserve, and Haida Heritage Site is a 5000 km^2 land-and-sea protected area in the southern portion of Haida Gwaii (formerly the Queen Charlotte Islands), approximately 100 kilometres off the north coast of British Columbia. The Haida Nation declared the area a Haida Heritage Site in 1985. The terrestrial part of Gwaii Haanas was designated a National Park Reserve by the Government of Canada soon after, and the two parties have been managing the area cooperatively since 1993. In 2010, following an extensive public consultation process, the marine area of Gwaii Haanas was given the designation of National Marine Conservation Area Reserve.

Gwaii Haanas is managed by the Archipelago Management Board, a cooperative body made up of equal representation from the Government of Canada (represented by Fisheries and Oceans Canada and Parks Canada) and the Council of the Haida Nation. The Gwaii Haanas marine area is currently managed under the Interim Management Plan and Zoning Plan, which includes "balancing protection and ecologically sustainable use" in its guiding principles. The Zoning Plan identifies six areas, that are closed to commercial and recreational fishing.

Development of a long-term management plan for the Gwaii Haanas marine area is underway and will be completed by 2015. This process will take place in consultation with the commercial and recreational fishing sectors through Fisheries and Ocean's established integrated fisheries

planning and advisory processes. Annual fishing plans will be developed in consultation with stakeholders.

Users of the Gwaii Haanas marine area should be aware that adjacent land is managed under the authority of the *Canada National Parks Act* and its regulations and, as specified in the *Gwaii Haanas Agreement* (1993), there is "no extraction or harvesting by anyone of the resources of the lands and non-tidal waters of the Archipelago for or in support of commercial enterprise" (s3.3). There are specific requirements for visiting the terrestrial portion of Gwaii Haanas, and advanced planning is necessary. Please contact the Gwaii Haanas administration office at 1-877-559-8818 for further information.

Southern Strait of Georgia

Parks Canada, in partnership with the Government of British Columbia, launched a feasibility assessment for an NMCA reserve in the southern Strait of Georgia in 2004. Since then, consultations with First Nations, key stakeholders, communities and the public have occurred. Informed by those discussions, a proposed boundary for consultation was announced by the provincial and federal Ministers of Environment in 2011. Since 2011, the two governments have been consulting with First Nations, local governments and industry. A preliminary concept is currently being developed to help advance consultations on the feasibility assessment. If the results of the feasibility assessment indicate that establishment of an NMCAR is practical and feasible, an establishment agreement between the Governments of Canada and British Columbia will be negotiated and an interim management plan developed. If the NMCAR is determined to be feasible, further consultations related to establishment agreements and Aboriginal rights will also take place with First Nations. Commercial and recreational fishing sectors, communities, landowners, recreation and environmental organizations and other stakeholders will also 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 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 being 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 http://www.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 Designated Unit – Endangered
- Eulachon - Central Pacific Coast Designated Unit– Endangered
- Eulachon - Nass/Skeena Rivers Designated Unit - Special Concern
- 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 Recovery Strategy has been developed for the four listed populations, which provides a recovery goal and population and distribution objectives, as well as 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. Humpback was re-assessed by

COSEWIC as Special Concern in 2013. Threats identified in the Recovery Strategy 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 list 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 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 http://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.pac.dfo-mpo.gc.ca/fm-gp/species-especes/salmon-saumon/conservation/docs/Sakinaw_conservation_jan08-eng.pdf

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

Shark Codes of Conduct

Out of the fourteen shark species in Canadian Pacific waters, three species are listed under SARA. The Basking Shark (Cetorinus maximus) is listed as Endangered, and the Bluntnose Sixgill Shark (Hexanchus griseus) and Tope Shark (Galeorhinus galeus) are listed as species of Special Concern. The primary threats to shark species have been identified as by-catch and entanglement. In order to address the conservation concerns with shark species, it is important that measures are taken to reduce the mortality of sharks resulting from these primary threats. As such, commercial fishing licences have been amended to include a Condition of Licence for Basking Sharks that specify mitigation measures in accordance with SARA permit requirements. Additionally, two 'Code of Conduct for Shark Encounters' documents have been developed to reduce the mortality of Basking Shark, as well as other Canadian Pacific shark species such as Bluntnose Sixgill and Tope Shark resulting from entanglement and bycatch in commercial, aquaculture and recreational fisheries. These guidelines include boat handling procedures during visual encounters with Basking Sharks as well as best practices for handling Canadian Pacific shark species during entanglement encounters.

These documents have been posted online and can be found at the following URL links.

Code of conduct for sharks: http://www.pac.dfo-mpo.gc.ca/fm-gp/species-especes/shark-requin/conduct_shark-conduite_requin-eng.html

Code of conduct for Basking Sharks: http://www.pac.dfo-mpo.gc.ca/fm-gp/species-especes/shark-requin/conduct_basking-conduite_pelerin-eng.html

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.bcreptiles.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

4.3.10 Northern and Southern Resident Killer Whales

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*. An Action Plan is being developed and near completion which identifies implementation priorities to reduce anthropogenic threats and address research needs for resident

killer whales. 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 chinook 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 scientists is actively participating in the workshop process. These experts were drawn from Canadian and U.S. 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 at: http://www.nwr.noaa.gov/Marine-Mammals/Whales-Dolphins-Porpoise/Killer-Whales/ESA-Status/KW-Chnk-final-rpt.cfm

Contaminants:
There are numerous chemical and biological pollutants that may directly or indirectly impact resident killer whale, 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. PCBs and certain fire-retardant persistent organic pollutants have been banned in Canada. Canada and US researchers continue to monitor resident killer whale populations.

Disturbance:
All cetaceans, including resident killer whales, are being subjected to increasing amounts of disturbance from vessels, aircraft and anthropogenic noise. Industrial activities such as: dredging, pile driving, construction, seismic testing, military sonar and other vessel use of low and mid-frequency sonars impact the acoustic environment. 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:

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 attributes. 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.

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. DFO link - http://www.pac.dfo-mpo.gc.ca/publications/marinemammals/depredation-4-2010-eng.pdf

If you experience depredation by whales, please report the incident by email MarineMammals@pac.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 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:
www.cosewic.gc.ca/
www.dfo-mpo.gc.ca/species-especes/home_e.asp
www.sararegistry.gc.ca/

Contacts for marine mammal inquiries:

Fisheries and Oceans Canada Contacts:
MarineMammals@pac.dfo-mpo.gc.ca
Paul Cottrell (604) 666-9965
John Ford (250) 729-8375

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 Fisheries and Oceans Canada, 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 or email: laurie.wilson@ec.gc.ca.

4.3.12 Aquaculture Management

Regulatory Regime:

In December 2010, the *Pacific Aquaculture Regulations* came into effect giving DFO the authority to govern the management and regulation of the aquaculture industry in BC, including marine finfish, shellfish, freshwater and enhancement facilities. The Province of British Columbia continues to have authority over land tenures and workplace safety related to aquaculture in BC. The new program requires more environmental monitoring to be undertaken by industry and additional public reporting to increase 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 and shellfish during 2013/14 and freshwater during 2014/15. 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 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 in a manner that is sustainable, consistent with the Department's mandate to manage fisheries and protect wild fish and fish habitat. Activities in the B.C. 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 new national policy entitled, *Access to Wild Aquatic Resources as it Applies to Aquaculture*. For the purposes of this policy, wild aquatic resources include wild salmon, as defined in 'Canada's Policy for Conservation of Wild Pacific Salmon' (the "Wild Salmon Policy").

Aquaculturists 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 intent of 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 ongoing 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 ensure and monitor compliance with the regulations and conditions of licence established for the industry. Within the B.C. 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 ongoing 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.

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, and 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. The outcome of production planning is a draft production plan that takes into account production priorities and the results of post-season reviews. This process operates on an annual planning cycle, while at the same time planning for the longer-term. Priorities are established annually based on the national and regional departmental 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 Pacific Aquaculture Regulation licence.

The risks of salmon enhancement to wild populations include undesirable genetic effects, disease implications, ecological interactions, harvest impacts and marine carrying capacity. DFO is aware of potential interaction of enhanced fish with wild stocks, and has developed and array of risk mitigation and management procedures, guidelines and practices. . Hatchery programs are designed to avoid or minimize these risks.

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 June 1, 2014 at: http://www.pac.dfo-mpo.gc.ca/sep-pmvs/ifmp-pgip-eng.html

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 Rivers and Smith Inlet Sockeye

The objective for Rivers and Smith Inlets sockeye salmon is to continue with rebuilding these stocks to reach escapement goals and achieve a sustainable stock that will support harvest.

For Smith Inlet sockeye, the Docee Fence provides an accurate in-season estimate of returns that can be used to provide in-season abundance estimates. To have a commercial sockeye opening

in Smith Inlet, Docee Fence counts will have to clearly indicate that the escapement goal will be achieved and a surplus is available.

For Rivers Inlet sockeye, commercial openings are unlikely until a clear trend towards higher productivity is established and documented by the annual surveys of spawning adults.

5.1.2 Skeena River Sockeye

The objective for Skeena River sockeye is to maintain sustainable stocks that will meet WSP objectives and support FSC, commercial and recreational harvests.

To achieve the objective, Canadian commercial harvest rates will be based on the forecasted aggregate Skeena sockeye return to Canada. DFO is continuing to consult on proposed changes to the abundance based harvest commercial rate.

5.1.3 Nass River Sockeye

The objective for Nass sockeye is to maintain sustainable stocks that will meet WSP objectives and support FSC and Treaty harvests, as well as commercial and recreational harvests.

Nass sockeye will be managed to achieve an aggregate spawning escapement target of 200,000. Returns in excess of the escapement target are harvested in FSC, Nisga'a Treaty and Commercial harvest opportunities. Management measures will be in place to reduce impacts to specific stocks of concern.

5.1.4 North Coast Chum

The objective for wild north coast chum is to rebuild weak wild runs, while providing opportunities to harvest surplus stocks.

North Coast wild chum stocks remain depressed and management actions in areas 3 to 6 will continue to be taken to maintain low fishery impacts. Specific chum rebuilding plans have been developed for Skeena and Nass stocks. |Please see Appendices 13 and 14 for more details.

5.1.5 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 two decades 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 consistent with the exploitation rate objective. For purposes of calculating the WCVI exploitation rate 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 manage commercial troll fisheries in the North Coast to a 3.2% exploitation rate ceiling on total WCVI chinook return to Canada. 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. The in-season exploitation rate will be estimated using the mean effort-harvest rate relationship developed from historical DNA analysis. The fishery will be further constrained by remaining closed during the first three weeks of June and the month of August as these periods are known to have higher proportions of WCVI chinook in the total catch. DNA analysis and coded-wire tag analysis of catch will be used to assess the 3.2% exploitation rate objective post season.

2014 is the sixth year that the Annex IV provisions of the 2008 PST agreement will be implemented. The 2014 allowable catches include a 15% reduction for the South East Alaska (SEAK), 0% reduction for Northern BC, and a 30% reduction for WCVI AABM fisheries from the allowable catches under the 1999 PST agreement.

5.1.6 Skeena Steelhead

DFO and the province of B.C. have renewed discussions on a joint approach to the management of steelhead returning to the Skeena watershed consistent with the 1999 fisheries management protocol between the federal and provincial governments. This work is intended to specify clear management objectives, management responses and mechanisms for technical support, management planning, communication and dispute resolution. Work on this approach will include consultations with First Nations and stakeholders.

5.1.7 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. Permitted fishing activities for commercial and recreational fisheries that have shown not to impact inshore rockfish is listed on the DFO's website at www.pac.dfo-mpo.gc.ca/recfish and in Appendix 3. 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 other locations to avoid the harvest of inshore rockfish in RCAs. DFO will work with First Nations to improve catch reporting and rockfish identification in 2014.

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 Haida Gwaii (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 may take decades. The strategy addresses four areas under the fisheries management and stock assessment regime:

- Protect a part of inshore rockfish populations from harvest through the use of Rockfish Conservation Areas;
- Collect information on total fishery mortalities through improved catch monitoring programs;
- Reduce harvests to levels that are less than the estimates of natural mortality; estimated at 2%; and
- 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: http://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 Northern Panel 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 constitutional protection provided to existing aboriginal and treaty rights, the *Allocation Policy for Pacific Salmon* and the 2013 Pacific Salmon Commercial Allocation Implementation Plan (See Appendix 7, Section 7.4).

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 commercial gear share is 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*.

DFO consults with Aboriginal groups when allocation decisions may potentially affect them in accordance with S. 35 of the *Constitution Act, 1982*, relevant case law, and consistent with Departmental policies and considerations.

Feedback from consultation sessions is relied on to measure the performance of First Nations objectives.

The Department is working with the FNFCs' Salmon Coordinating Committee to develop information summaries to inform specific performance measures for incorporation in the future. This information will be included in Appendix 5 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 target stocks. 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.

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 the fishing plan 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 Inland Demonstration Fisheries

For a more detailed description of Aboriginal commercial fishing opportunities please refer to sections 7.4.3 and 7.5.3.

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 compromised 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 Section 7.4.

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, inaccurate 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 Canadian 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 SFI and go2, the resource for people in tourism, have developed an Industry Training Authority approved Tidal Angling Guide (TAG) certification program. The 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 area 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	Note: When using the same gear and methods noted below the same mortality rates were applied.	Various – Depending on gear used and fishery. Gill net – 60% same as commercial below Beach seine – 5% for sockeye and coho in river Fraser Modified Shallow Seine – 10% for sockeye and coho in-river Fraser Tooth Tangle net – 3.5" mesh is 10% sockeye and 15% coho Fishwheel – 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	60% to 70%	60% with provision for rates as low as 26%* 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; 50%** Area 20 – coho; 25% all areas for sockeye
Commercial Troll – All Areas	26%	10% sockeye, 15% coho and chinook.
Commercial tangle tooth net 3.5" mesh	n/a	10% sockeye, 15% coho

*Revised from 40% to 26% for 2011 based on a study done specific to the Skeena in the North Coast
**Recent work by researchers from Carleton University and the University of British Columbia and the Area B Harvest Committee has been undertaken in 2012 and 2013 to re-evaluate the release mortality rates for coho caught using purse seine gear in Area 20. Results to date indicate that short-term release mortality rates are less than the current 70% estimate. For the 2014 fishery, the Department will use a 50% release mortality estimate for planning purposes subject to at-sea-observer coverage to assess coho encounter rates and fish condition during any commercial fishery openings.

7.2 Chinook – AABM/ISBM Management

Chinook salmon 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: www.psc.org/Index.htm.

Two types of fisheries are identified in the agreement: Aggregate Abundance Based Management (AABM) fisheries; and Individual Stock Based Management (ISBM) fisheries.
Three mixed-stock aggregate fisheries make up the AABM fisheries identified by the PST: 1) Southeast Alaska sport, net and troll; 2) Northern British Columbia Troll and Haida Gwaii (Queen Charlotte Islands) Sport; and 3) West Coast of Vancouver Island (WCVI) troll and WCVI outside sport. These fisheries are managed to an annual total allowable catch based on the forecast abundance of the aggregate of stocks that contribute to each fishery. Accounting of chinook salmon fisheries for the PST occurs from October 1 in one calendar year to September 30 in the next calendar year.

The Chinook Technical Committee (CTC) is responsible for completing a final calibration of the Chinook Model for the upcoming 2014 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 (NBC), and West Coast Vancouver Island troll and outside sport (WCVI). The AIs and the associated allowable catches are shown in Table 7-2. 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 7-2 reflect this change.

Table 7.2: Abundance indices and associated allowable catches for the 2014 AABM Fisheries

	SEAK	NBC	WCVI
Abundance Index	2.57	1.99	1.20
Allowable Catch	439,400	290,300	205,400

The remaining Canadian chinook salmon fisheries are considered ISBM fisheries. For Canadian ISBM fisheries the agreement identifies a general obligation that limits on the total adult equivalent mortality rate for individual stock groups to 63.5% of that which occurred in the 1979 to 1982 base period.

7.3 Haida Gwaii Chum and Pink Decision Guidelines

7.3.1 Background

Surplus pink salmon opportunities on Haida Gwaii occur only during even years; odd year returns are either minimal or non-existent in most streams. Pre-season predictions of pink salmon surpluses are not reliable. Therefore pink fisheries will be managed in-season.
In the past, terminal chum salmon opportunities have occurred in a variety of wild stock locations. However, in recent years, returns of chum have declined to levels where surpluses have frequently not been observed. Chum fisheries will be managed in-season on a local basis.

7.3.2 Constraints

Assessment of escapements to streams in and near the surplus to be harvested will need to be assessed. Conservation of smaller and/or weaker returning stocks that may be affected by a potential harvest opportunity may influence the timing and/or location of the fishery or may result in the forgoing of the fishery.

Coho by-catch may be a concern in some areas, and so brailing by seines and the use of revival tanks by both gill nets and seines are usually, but not always, required.

All fisheries are during daylight hours, generally 11 or 12 hour days during September reducing to 10 or 11 hour days in October. This reduces the amount of by-catch.

7.3.3 Decision Guidelines

Initial openings are based on fish observed to be schooling in front of the various systems. If a poor run is predicted, such that only enough salmon are expected to return to stock the creek, then no fishing will occur unless an actual surplus is identified in-season. Conversely, if a surplus is forecast, an initial opening may be held to confirm returning stock abundance with subsequent openings as appropriate. The size of the return will be estimated by the CPUE of the first few openings.

In-season Decisions

In Area 1, the Yakoun River in Masset Inlet and Naden River in Naden Harbour are the primary pink salmon producers, and the Ain and Awun River systems in Masset Inlet and the Naden River in Naden Harbour are the primary chum salmon producers.

The primary pink salmon production areas are Darwin Sound and Cumshewa Inlet in Area 2 East, and Rennell Sound, West Skidegate and Englefield Bay in Area 2W. Streams supporting wild chum returns which may present surplus harvest opportunities in Area 2 East are located in East Skidegate Inlet, Selwyn Inlet, and Darwin Sound, and in Area 2 West are located in West Skidegate Inlet, Englefield Bay and Tasu Sound. The size of the runs to these systems can

usually be determined by observations of fish holding in front of the streams, and the historic average run timing for that system.

All net fisheries are managed so that catch may be delivered within two days, at the request of the commercial industry.

7.3.4 Issues

- Coho by-catch may be a concern in some areas, and so brailing by seines and the use of revival tanks by both gill nets and seines are usually, but not always, required.
- All fisheries are during daylight hours, generally 11 or 12 hour days during September reducing to 10 or 11 hour days in October. This reduces the amount of by-catch.

7.3.5 Prospects

Chum salmon surpluses are expected to be limited in 2014. Monitoring to determine incoming runs throughout the season will be concentrated in Masset Inlet, on the east coast between Skidegate Inlet and Darwin Sound, and on the west coast between Dawson Inlet and Tasu Sound.

7.4 Nass River Decision Guidelines

7.4.1 Background

Seasonal management, assessment of Nass Area salmon stocks, and minimum and production-based salmon escapement goals are all discussed in the Nass Fisheries Operational Guidelines (FOG), developed to aid in the implementation of the Nisga'a Final Agreement.

Fisheries are managed to meet commitments in accordance with the Nisga'a Final Agreement (NFA), to meet Nass First Nation FSC goals, Pacific Salmon Treaty (PST) obligations, and to provide ocean commercial and inland commercial fisheries harvest opportunities.

The northern part of Chatham Sound in Area 3 is managed in conjunction with the Skeena River fishery because of the large numbers of Skeena sockeye and pink passing through Chatham Sound during the fishing season.

There are 14 sockeye streams in Area 3, all but two of which are tributaries to the Nass. The major producers are Bowser, Damdochax, Kwinageese, and Meziadin. Recent escapements to Meziadin have been near target but depressed for Damdochax and uncertain for Bowser. The management measures implemented by the Department over the past three years coupled with the Nisga'a fish passage improvement measures provided Kwinageese (Fred Wright Lake sockeye CU) river sockeye escapement of 10,273 in 2011, 3,688 in 2012 and 398 in 2013.

There is no single major chum producer in Area 3, but significant stocks return to the Kshwan, Stagoo, and Khutzeymateen Rivers.

The major pink stocks return to the Kwinamass, Khutzeymateen, and the Iknouk Rivers (odd years). Most Area 3 pink stocks arrive in the fishing area at approximately the same time, mid-July. The outer coastal stocks are an exception, arriving in August and early September.

7.4.2 Constraints

Kwinageese sockeye and Area 3 chum are stocks of concern and will require focused management planning.

A chum rebuilding plan for Area 3 can be found in appendix 13.

Commercial marine constraints this year include:

- Fishing is limited to daylight hours.
- Non-retention of steelhead is mandatory in all fisheries.
- Fisheries will continue to be managed to reduce impacts to Canadian chum. The rebuilding plan for the immediate future is to keep the Canadian average ER below 10%.
- Retention of chum in Area 3 will be permitted in times and areas coinciding with high abundances of US hatchery origin chum, while still meeting the objective of maintaining reduced impact on Canadian wild stocks. All other times and areas will remain non-retention/non-possession of chum in Area 3 fisheries. Otolith samples will be collected again in Area 3 to determine the presence of US hatchery chum in both retention and non-retention areas.
- Brailing and sorting, with the mandatory release of chinook will be in place for the seine fishery.
- Retention of chinook in the gill net fishery will be in place initially, but may revert to non-retention if chinook abundance is poor.
- Retention of coho is expected to be allowed initially, but may be modified depending on stock abundances.
- Gill nets have a 137 mm (5.39 in) maximum mesh restriction. This restriction is in place so that sockeye is targeted selectively and larger non-target species such as chum and chinook are impacted to a lesser degree.
- The management objective is to significantly reduce harvest impacts on Kwinageese and Damdochax sockeye. The majority of Kwinageese sockeye pass through the Area 3 commercial fishery areas from July 8th to July 28th with the peak occurring between July 12th and July 24th. Gill nets will be closed and seines will be non-retention sockeye from July 12 to July 24 in all of Area 3.
- Pink fishing opportunities will be managed to conserve weak stocks.
- A troll fishery for coho in the inner portions of Area 3 will be considered if stock strength permits.

7.4.3 Decision Guidelines

Nass sockeye will be managed to achieve an aggregate spawning escapement target of 200,000. Returns in excess of the escapement target are harvested in FSC, Nisga'a Treaty and Commercial harvest opportunities. Similar to the past two years, management measures will be in place to reduce impacts to specific stocks of concern

Opportunities for a gill net fishery are evaluated during the pre-season planning process based on predicted returns. The fishery is implemented to assess sockeye strength.

The seine fishery is usually a targeted sockeye and pink fishery with restrictions such as time, area and gear restrictions in place to pass stocks of concern through to the spawning grounds.

In-season Decisions

Weekly decisions are made from run size predictions based on:

- Catch and effort data from the Area 3 and Alaskan Tree Point commercial net fisheries.
- Escapement information from the Nisga'a Fishwheel Program conducted at test-fishing sites near Gitwinksihlkw on the Nass River and fish counts at the Meziadin fishway, and later from individual stream inspections for chum and pink.
- Pink stocks are managed to stream-specific escapement goals in Area 3 while keeping within the Pacific Salmon Treaty pink annex considerations. Targeted net pink fisheries will be based upon identified surpluses with consideration for stocks of concern.

Nass River Sockeye Inland Demonstration Fishery

The concept of the inland demonstration fishery is to transfer the catch of commercial gill net or seine licences to the inland portion of the Nass system. The inland sockeye allocation will depend on the number of licences obtained by the First Nation, and the commercial catch as determined, in-season from the Prince Rupert office. This inland demonstration fishery will only take place if the Nass sockeye run returns in sufficient strength to fish commercially in Management Area 3. This fishery will be managed with similar rules as the marine commercial fishery.

Gill net or seine licence shares set aside for the inland demonstration fishery will be based on each commercial licence having an equal share of the available commercial allocation (currently based on actual weekly catches), by gear type in the Management Area 3 commercial fishery. The total inland allocation will be equal to the gill net and seine shares multiplied by the number of licences set aside for the inland fishery. There are approximately 108 Area A seine licences and 633 Area C gill net licences in the commercial fleets (these numbers could vary slightly prior to the fishery). The licence share will be further adjusted to reflect the stock proportion available in a specific fishing area. For the inland demonstration fishery, the intent will be to continue the requirement for selective fishing methods. Gill nets will not be allowed. Sockeye may be retained, and all other species shall be returned to the water with the least possible harm.

All inland commercial sockeye salmon harvests shall be checked through a compulsory landing station. All appropriate records are to be kept for proper monitoring and enforcement. No FSC fishing or retention will be allowed while participating in the inland demonstration fishery.

Each First Nation engaging in an inland demonstration fishery must submit a demonstration fishery plan. This plan must be approved by the Department prior to harvesting.

The DFO contact for more information is Sandra Davies at (250) 627-3426.

Licence Set-aside rules:

DFO may contribute commercial licences that are currently held by the Department. In addition, commercial licences may also be solicited through private ventures, through an arrangement between Nass First Nations and individual licence holders.

All licences that will be used in the inland demonstration fisheries will have to be either Area C gill net or Area A seine, and annual renewal fees will be paid in full for the current season. These licences cannot have been fished in any Area C or A fisheries during the current year. Licence documents will be held in the DFO office. Catch share transfers will be calculated based on the number of licences as indicated above. Catch shares will not be provided for marine commercial fisheries that have been announced prior to the licence transfer. Licenses transferred inland may be used simultaneously in other inland watershed demonstration fisheries as approved by DFO.

7.4.4 Nass River Issues

Kwinageese sockeye have been identified as a stock of concern. The Department will continue to implement management measures to reduce impacts of Kwinageese sockeye.

Nass area chum remain a stock of concern.

Khutzeymateen and Kwinamass River chinook escapements have been very low in recent years. Management measures to protect chinook stocks in Portland Inlet will continue.

Seine fishery compliance with selective fishing measures will continue to be an important factor in management decisions.

7.4.5 Nass River Prospects

Nass River sockeye returns are forecasted to be average with an expected total return from 452,000 (90% probability) to 972,000 (10% probability) and a point estimate of 642,000 (50% probability) based on a composite of 5 different forecast models. Nass sockeye returns will be monitored carefully to take into account increasing uncertainty and recent trends towards lower survival.

Area 3 pink returns are expected to be average with limited harvesting opportunities anticipated. Area 3 chum returns are expected to be very poor. Fisheries will be managed to reduce harvest impacts on chum.

7.5 Skeena River Decision Guidelines

7.5.1 Background

Skeena salmon are taken in virtually all northern B.C. and southern Alaskan fisheries. In B.C., directed net fisheries on sockeye and pink salmon occur in Areas 3, 4 and 5. Troll fishing effort is directed on pink, chinook, and coho salmon in Areas 1 and 101. Chinook and coho are the

main targeted species for the recreational fisheries, and First Nations harvest all species of Skeena salmon.

Sockeye

The Skeena River is the second largest producer of sockeye in B.C. The largest producers of sockeye salmon in the Skeena system are the enhanced runs to the spawning channels at Fulton River and Pinkut Creek.

Sockeye from various streams migrate up the Skeena throughout the salmon season. These wild stocks are generally less productive and therefore cannot withstand the same exploitation rate as the enhanced Babine stocks of Pinkut Creek and Fulton River. Three wild sockeye stocks have been a specific concern in recent years, the Nanika-Morice, Kitwanga and Babine River. The Nanika-Morice sockeye peak through the fishing area in early July (early timing), and the Kitwanga and Babine River sockeye stocks peak through the fishing area in late July and early August.

Measures have been taken to reduce fishery impacts on Skeena River chum, steelhead, and wild sockeye stocks. These measures include non-retention of some species, gear and fishing modifications, and specific timing closures or sockeye harvest rate reductions when weak stocks are present.

Skeena River returns are harvested in Areas 4 and 5 and upper Chatham Sound in Area 3.

Steelhead

Steelhead retention throughout B.C. is prohibited in commercial fisheries. Any Skeena commercial gill net Sockeye fishery will incorporate weedlines on all 90 mesh nets, daylight fisheries and revival tanks. Short nets and short sets are required for gill net fisheries starting August 1. Seine net fisheries will use daylight fisheries, revival tanks, brailing and sorting.

Coho

There are 154 recorded coho streams in Management Area 4. Individual stock arrival timing at the Tyee test fishery varies, but generally it is the streams of the upper Skeena (Bulkley, Babine, and Interior Skeena stocks) which arrive first (from late July to early August), followed by middle Skeena stocks, and lastly coastal stocks.

Upper and middle Skeena coho have maintained a relatively high level of abundance in recent years. The status of the lower Skeena (late timing) coho stocks is less certain.

Pink

In the Skeena River, 128 systems have a recorded pink salmon presence. Tagging studies were conducted in 1982, 1984 and 1985. These studies were designed primarily to provide information on interception rates, but also provided information on stock abundance, migration and timing. Management stock groupings are upper Skeena, lower Skeena and coastal

Chum
Chums are the least abundant salmon species in the Skeena system and return to the fewest number of streams. There are 43 chum streams or rivers in Area 4. Chum stock status is poor and a Skeena chum rebuilding plan is detailed in Appendix 14.

Chinook
The Skeena is the second largest chinook producer on the B.C. coast. Skeena chinook are taken in all northern B.C. fishing areas as well as southern Alaskan troll and net fisheries. Returning adults tend to follow a north to south migration pattern. Peak timing of chinook past the Tyee test fishery is in the last week of June and first week of July, with escapements continuing into late August. Skeena River chinook have been relatively healthy in recent years.

7.5.2 Constraints

- Fishing is limited to daylight hours except during directed chinook gill net fisheries when mesh size and run timing are used to target chinook only.
- Retention of steelhead and chum is prohibited in all fisheries.
- Brailing and sorting with the mandatory release of chinook will be in place for the seine fishery.
- Gill net sockeye fisheries will begin with Chinook retention, but could be changed to non-retention if Chinook abundance is poor.
- Gill nets have a 137 mm (5.39 in) maximum mesh restriction during the sockeye fishery. This restriction is in place so that sockeye is targeted selectively and larger non-target species such as chum and chinook are impacted to a lesser degree.
- In-season assessments may change the management measures taken for various stocks.
- Skeena chum remain a stock of concern and Canadian harvest impacts will be limited to a maximum exploitation rate of 10% in Canadian fisheries. This is a ceiling, and harvest impacts would be expected to be well below this level in most years. It is anticipated these management measures will be in place for an extended period.

- A chum rebuilding plan is included as Appendix 14.
- The fishery will be managed to avoid high weekly harvest rates in late July and August. Constraints required to protect weak sockeye and chum stocks will be maintained even if late season sockeye run size upgrades indicate a remaining allowable harvest.

7.5.3 Decision Guidelines

Pre-season Decisions

Sockeye:
The Skeena sockeye aggregate escapement target is 900,000 and First Nation food, social and ceremonial fishery requirements are in the range of 150,000.

- If the pre-season forecast or the Skeena sockeye return is greater than 1.05 million, then fishery openings are planned.

- If the pre-season run size forecast is below 1.05 million fisheries will not take place until the in-season run size prediction is greater than 1.05 million.
- Any gill net fisheries on or after August 1 will be short-net, short-set.

In-season Decisions

The Tyee test fishery is the main in-season stock assessment tool for estimating the relative abundance of Skeena River salmon and steelhead through the use of a multi-panel gill net with varying mesh sizes. Daily in-season escapements and total run size are estimated for sockeye only. Salmon returns are variable and estimates are also subject to error as annual run timing, and the annual catchability of salmon by the Tyee test fishery net varies.

Sockeye

The allowable Canadian commercial harvest rate on the Skeena sockeye aggregate increases as the return to Canada increases. From 1,050,000 to 3,999,999 the Canadian commercial harvest rate on Skeena sockeye will be the same as was in place from 2009 to 2013 for returns less than 4.0 million: 0% harvest rate at 1,050,000 increasing to 21.7% at 1,840,000 and increasing to 30.2% at 3,999,999. For 2014 only, as the in-season assessment approaches 4.0 million or greater, the Department will initiate an approach to adjust the commercial harvest rate up to a maximum of 40%. This will allow for additional commercial harvest if the abundance of Skeena sockeye is much higher than the pre-season forecast of 2.3 million total return. This abundance based harvest control rule will be in place only for the 2014 season and further consultations will be taking place during the fall and winter of 2014-15 to develop a new harvest control rule for the 2015 NC Salmon IFMP.

- DFO may reserve sockeye allocation for seine vessels to allow for an incidental harvest of sockeye during a directed pink fishery.
- Directed fisheries for Skeena sockeye will be constrained by sockeye and chum salmon stocks of concern even with late season sockeye run size upgrades.

Figure 7-1 shows the allowable Canadian commercial harvest rate on Skeena sockeye. This includes gillnet, seine and inland demonstration fisheries.

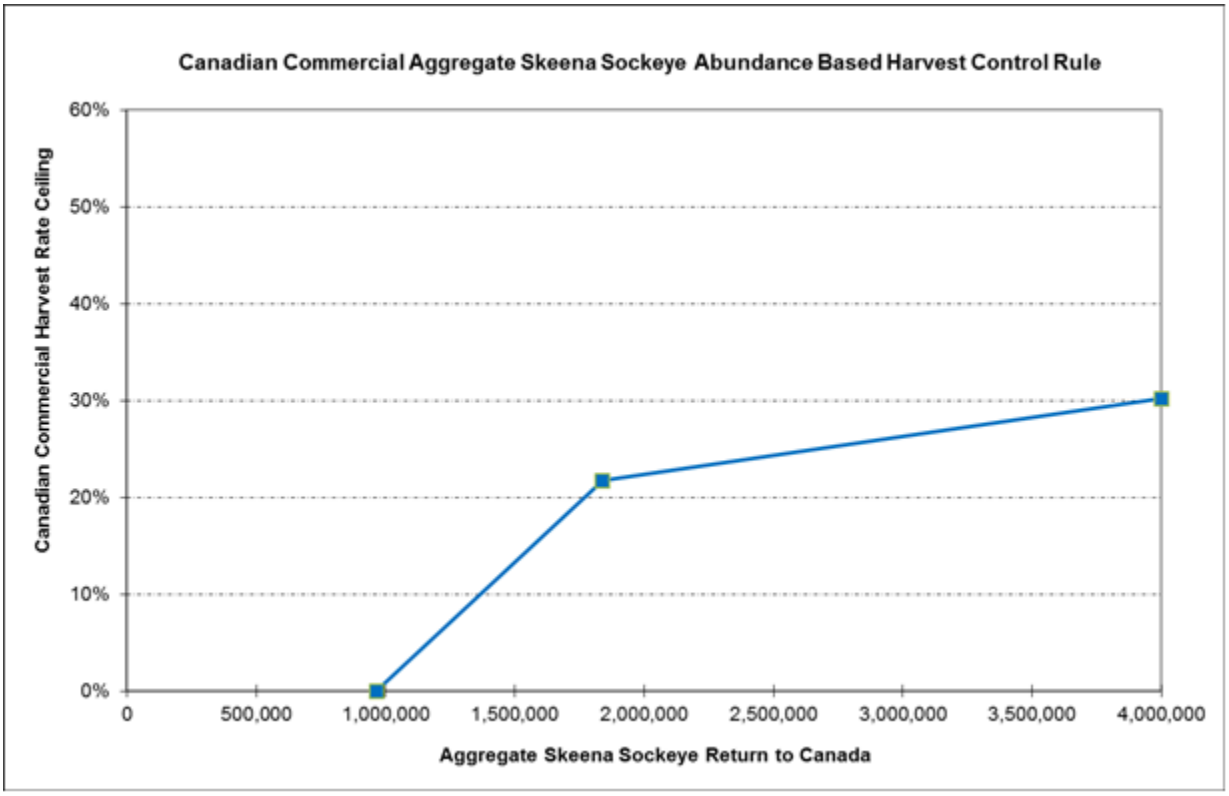


Figure 7-1 Aggregate Skeena Sockeye Canadian Commercial Harvest Rate for 2014

Food, Social and Ceremonial Fisheries

In-season return to Canada forecasts of less than 550,000 Skeena sockeye would trigger consultations with First Nations who harvest Skeena sockeye to limit their food, social and ceremonial fisheries. If Skeena sockeye return to Canada are forecasted to be less than 400,000 all fishing activity on sockeye will cease. There is also a request for First Nations not to fish near the confluence of the Kitwanga River, to protect Kitwanga sockeye that may be holding in that area.

First Nations Inland Demonstration Fisheries

It is anticipated that there will be opportunities for Skeena River First Nations for an inland demonstration fishery on Skeena River in 2014. Similar to what has been conducted in recent years, catches of sockeye and pink salmon will be transferred inland to fisheries being conducted within the Skeena watershed. The Skeena River Sockeye Inland Demonstration Fishery Management Plan follows. This fishery is managed as a part of the aggregate Skeena sockeye Canadian commercial harvest rate ceiling (Figure 7-1).

Skeena River Sockeye Inland Demonstration Fishery Management Plan

The concept of the inland demonstration fishery is to transfer the catch of a number of commercial gill net or seine licences to the inland portion of the Skeena River. DFO may contribute licences that have been relinquished from the commercial fleet and remain in the Department's inventory. In addition, commercial licences may also be solicited through private ventures, through an arrangement between Skeena First Nations and individual licence holders.

This inland demonstration fishery will only take place if the Skeena sockeye run returns in sufficient strength to fish commercially. An inland demonstration pink salmon fishery may take place if there has been a marine commercial pink salmon fishery in Management Area 4.

The sockeye migration time from the marine commercial fishing area to the Terrace area is approximately 1 week; to the mid-river area around Hazelton is 2 weeks; and to the Babine River weir is 3 weeks. This timing is used to develop fishing plans with the interested First Nations on the Skeena.

Gill net licence shares set aside for the inland demonstration fishery, will be based on each commercial licence having an equal share of the available commercial allocation (currently based on actual weekly catches) by that gear type in the Management Area 4 commercial fishery. The total inland gill net allocation will be equal to the share multiplied by the number of licences set aside for the inland fishery. There are approximately 633 Area C gill net licences in the commercial fleet (these numbers could vary slightly prior to the fishery). The licence share will be further adjusted to reflect the stock proportion available in a specific inland fishing area.

Seine licence shares set aside for the inland demonstration fishery, will be based on each commercial licence having an equal share of the available commercial allocation by that gear type in the Management Area 4 commercial fishery. The individual vessel quota is set each week by the DFO Prince Rupert office. The total inland seine allocation will be equal to the share multiplied by the number of licences set aside for the inland fishery. There are approximately 108 Area A seine licences in the commercial fleet (these numbers could vary slightly prior to the fishery). The licence share will be further adjusted to reflect the stock proportion available in a specific inland fishing area.

For the inland demonstration fishery, the intent will be to continue the selective methods that have been developed during the 1990s pilot sales fisheries. These could include beach seine, fishwheel, dip net, and the Babine weir. Gill nets are not permitted, however the Department is considering a request from the North Coast Skeena First Nations Stewardship Society to test the use tangle tooth nets, in the tidal portion of the Skeena River upstream of the commercial fishing boundary for their inland demonstration fishery. Sockeye (and possibly pink) may be retained, based on the weekly allocation issued by Prince Rupert DFO, and all other species will be returned to the water with the least possible harm.

All inland demonstration sockeye and pink salmon harvest shall be checked through a compulsory landing station. All appropriate records are to be kept for proper monitoring and

enforcement. No FSC fishing or retention will be allowed while participating in the inland demonstration fishery.

Each First Nation engaging in an inland demonstration fishery must submit a demonstration fishery plan. This plan must be approved by the Department prior to harvesting.

This project is facilitated through the Skeena First Nations. The DFO contact for more information is Sandra Davies at (250) 627-3426.

Licence Set-aside rules:

DFO may contribute commercial licences that are currently held by the Department. In addition, commercial licences may also be solicited through private ventures, through an arrangement between Skeena First Nations and individual licence holders.

All licences that will be used in the inland demonstration fisheries will have to be either Area C gill net or Area A seine, and annual renewal fees will be paid in full for the current season. These licences cannot have been fished in any Area C or A fisheries during the current year. Licence documents will be held in the DFO office. Catch share transfers will be calculated based on the number of licences as indicated above. Catch shares will not be provided for marine commercial fisheries that have been announced prior to the licence transfer.
Licenses may be used simultaneously in other inland watershed demonstration fisheries (e.g. Nass) as approved by DFO.

ESSR
All ESSR fisheries will be by selective means, with live release of all non-target species. Amounts specified for harvest will be determined in close liaison with Pinkut Creek and Fulton River spawning channel managers to ensure enough sockeye are available to load the Pinkut and Fulton systems.

Recreational Sockeye Fisheries

For non-tidal waters in the Skeena mainstem, Table 7.3 outlines the guidelines for management actions that may occur.

Table 7.3. Guidelines for Management Actions for Recreational Sockeye Fisheries in the Skeena Watershed

Forecasted Abundance	Daily Limits		
	Skeena Mainstem	Babine River	Babine Lake
Less than 0.8 million past Tyee	0	0	0
Between 0.8 million and 1.0 million past Tyee	1	1	1
Greater than 1.0 million past Tyee	2	2	2
Greater than 2.0 million return to Canada forecasted as of July 25th.	4	2	n/a
ESSR fishery on Babine Lake	n/a	n/a	4

*Return to Canada includes sockeye caught in Canadian marine waters

For the 2014 season, normal daily limits of 2/day will apply from the start of the season until in-season forecasts suggest a change is warranted based on Table 7-1. In years of high abundance, Babine River recreational limits will remain at 2/day as per an agreement between DFO and BC Parks. Once DFO identifies a surplus to the spawning channels that would provide for an ESSR fishery on Babine Lake for the Lake Babine First Nation, the recreational sockeye limits in Babine Lake will be increased to 4/day.

Commercial Sockeye Fisheries

No commercial sockeye fisheries would take place in Management Area 4 unless the predicted return to Canada is greater than 1,050,000. Above 1,050,000, allowable exploitation rates will be determined based on the abundance based exploitation rates showing in Figure 7-1 in Section 7.5.3.

For 2014 Skeena River sockeye, returns are expected to be below average (range from approximately 1.1 million to 4.7 million). Fisheries will be based on in-season assessments of actual sockeye returns.

Commercial allocation of Skeena and Nass sockeye (Areas 3 to 5) is 75% of the commercial TAC assigned to the gill net fleet, and 25% assigned to the seine fleet. The management strategy to achieve these allocations are to open the gill net fishery first, followed by the seine fishery, which usually opens mid-July, depending on estimated run size, current escapement information, and gill net catch to date. The sockeye allocation for seines may be caught in Area 3 when pink salmon are abundant in Area 3.

Area 4 Skeena River Sockeye Seine ITQ Demonstration Fishery Management Plan

Any seine fishery for sockeye salmon in Management Area 4 (Skeena) will be an Individual Transferable Quota (ITQ) demonstration fishery in 2014. The sockeye fishery will be managed to an equal share of a weekly quota for sockeye salmon for each of the registered 108 seine licences (0.92593% for each license). The opening times and quota will be posted weekly on Fridays by fishery notice on the Department's web-site.

For the sockeye ITQ seine fishery, the area will usually open for 6 days per week (Monday to Saturday in 2014). Areas 4-12 and 4-15 will be among the Subareas open, but all vessels will be requested to exit this area if a concurrent gill net opening occurs. These areas will close on short notice if a gear conflict cannot be resolved.

Valid licence eligibilities will be permitted to reallocate (transfer) their quota to another valid licence eligibility each week or for the whole season. Both weekly and whole-season "Request for Temporary Reallocation of Quota" forms are included in the licence issuance package when renewing a seine licence and are also available by email, fax or pick up at the Prince Rupert office. Verbal reallocation transfers will not be accepted. For an email or fax copy, please contact Sandra Davies at Sandra.Davies@dfo-mpo.gc.ca or fax at (250) 627-3427.

Vessels receiving a reallocation for the season will receive one licence amendment with a new quota amount expressed as a percentage. Vessels requesting a short-term reallocation (less than the whole season) will receive an amendment on or after Friday of each week after the TAC has been set for the week and will receive an amendment that includes the number of sockeye reallocated.

Weekly TACs will expire, not be cumulative, and not carry over past the end of fishing on Saturday of any given week. Vessel masters must cease fishing when their quota has been achieved. All amendments to quota must be aboard the fishing vessel or the fishing vessel must have the confirmation number of the quota transaction prior to fishing.

Vessels must have a valid ASA licence (seine) with current Conditions prior to receiving or reallocating quota.

Start, end, pause and daily catch reports (per conditions of licence) must be made by Area A vessel masters to the salmon catch monitoring service provider or by E-log (refer to the conditions of licence).

Catch validation is mandatory for all ITQ fishery participants. This catch validation must be performed by an approved service provider, be done at dockside (no packers), and be done in Prince Rupert or Port Edward. The contact number to arrange registration and validation will be published in a Fishery Notice immediately prior to any fishery.

Observers will be an integral part to this fishery and vessels may be requested to take an observer as per their licence conditions. Seines participating in the ITQ fishery will be required to provide an at-sea observer program.

All vessels must enter Management Area 4 with clean holds, proper hail procedures and no overages from the previous week. If a vessel leaves the fishery to fish in another fishery, the catch shall be offloaded and verified by a validator prior to entering another fishery.

ITQ reallocations to the inland demonstration fishery will be allowed as long as there is at least one seine licence assigned to the inland demonstration fishery. The weekly inland transfer deadline is Thursday by 4:30PM.

Pink

During the second week of August, the target species in the commercial Area 4 fishery traditionally switches from sockeye to pink salmon. The management target for pink escapement is one to two million fish. Once the fishery switches to pink management and the yearly escapement is not expected to reach one million, the fishery may close. Pink returns between one and two million are managed with a balance between catch and escapement, and this balance depends on escapement distribution and concern for other species. Skeena pink fishing opportunities may be limited to reduce harvest impacts on Skeena sockeye and chum stocks of concerns by restricting late season openings, and ensuring compliance during seine pink harvests.

Coastal Area 4 and 5 pink stocks are traditionally managed in accordance with Skeena runs until mid-August when local pink stocks become prevalent. Care will be taken not to over-harvest local stocks while conducting the Skeena directed fishery. For instance, in years when there are large surpluses of Skeena pink salmon, boundaries may be established around local, coastal pink streams to protect pinks holding in front of these systems while conducting the main Skeena directed pink fishery. Seine fisheries for coastal pink stocks are then considered based on catch and stream escapement information. In recent years Area 5 pink fisheries have taken place in August. There are no major coastal pink stocks in Areas 4 or 5 but a number of small streams contribute to this stock.

ESSR

All pink ESSR fisheries will be by selective means, with live release of all non-target species. If a local surplus of pinks is identified, an ESSR opportunity may be available in the Kitwanga weir (Gitanyow First Nation), and Moricetown fishway (Wet'suwet'en First Nation).

Chinook

The first directed gill net chinook fishery in Area 4 will be determined preseason by the Area C Harvest Committee. When abundances permit, this chinook fishery is managed to a maximum catch of 4,000 chinook or two openings, whichever comes first. The second opening is dependent on stock abundance determined from the Tyee test fishery and CPUEs on the first opening. If average or better abundances are indicated, flexibility will be exercised to facilitate the harvest of the 4,000 chinook by the gill net fleet. This may include some flexibility with the timing of openings to provide increased opportunity to harvest chinook.

If the returning run strength is very weak, additional management actions may occur on the commercial and recreational fisheries. These actions could include reduced daily limits in tidal waters, closed times and areas, gear restrictions in non-tidal waters, or monthly quotas in non-tidal waters. Consultation with the recreational advisors would be taken to determine a course of action to protect the chinook run. Management actions would be in accordance with the allocation policy. The Wet'suwet'en First Nation has expressed concerns about FSC harvest opportunities from Morice chinook stocks.

Coho

- Retention of coho will be determined in-season by coho abundance indicators in Northern BC and Southeast Alaska.

7.5.4 Skeena River Issues

- Co-migrating with strong sockeye stocks are weaker runs of wild sockeye, as well as stocks of all the Pacific salmon species.
- Measures are required to reduce harvest impacts on Skeena River chum, steelhead, and some sockeye stocks.
- As in recent years, the first sockeye opening will be delayed to reduce impacts on Nanika sockeye (the opening date is under discussion with the Wet'suwet'en First and other interests).
- In recognition of the requirement to protect and rebuild stocks of concern such as late run sockeye (e.g. wild Babine River sockeye) and Skeena chum, there will be limitations on sockeye harvests in the last week of July and in early August.
- Even if there was a late season determination that increased the sockeye harvest allowance, any potential harvest opportunities will still be restricted because of concerns regarding harvest impacts to late run stocks of concern.
- These measures include non-retention of some species, gear and fishing modifications, and specific timing closures or sockeye harvest rate reductions when weak stocks are present.
- Compliance with selective fishing measures will be an important factor when considering harvest opportunities in August.

7.5.5. Skeena River Prospects

The total Skeena sockeye return is expected to be below average with a pre-season return forecast from 1.1 million (90% probability) to 4.7 million (10% probability) and a point estimate of 2.3 million (50% probability) based on the sibling model.

Skeena pink returns are expected to be below average with no targeted harvesting opportunities anticipated. Area 4 chum returns are expected to be very poor. Fisheries will be managed to avoid and release chum. Chum stocks are expected to return below desired levels in most north coast waters (Areas 3 to 6).

7.6. Area 5 Decision Guidelines

7.6.1. Background

Area 5 is traditionally managed in conjunction with Area 4 until mid-August when local pink stocks become prevalent. In recent years Area 5 pink fisheries have taken place in August.

There are a number of sockeye streams in Area 5 that have small surpluses, and have generally been reserved for FSC purposes in the past. There is no one major pink stock in Area 5 but a number of small streams which all contribute to this fishery.

7.6.2. Decision Guidelines

Local streams could develop small surpluses, and these will be monitored in-season.

In-season Decisions

- Area 5 will open in conjunction with Area 4 sockeye-directed openings until mid-August.
- Seine fisheries for Area 5 pink stocks are considered starting in mid-August based on catch and stream escapement information.
- A targeted selective gill net fishery for pinks in Area 5 is possible while Skeena pinks are transiting the area and before the terminal stocks in Ogden Channel appear. Reports are that sockeye and chum would be rare, but small mesh nets would be implemented to minimize the by-catch. By-catch encounters would need to be confirmed by monitoring the fishery and the fishery would be terminated if by-catch encounters are high.

7.6.3. Issues

- Commercial gillnet fisheries in Area 5 targeting local stocks may be considered after discussion with Gitxaala on FSC harvest opportunities.
- For commercial gillnet fisheries to take place on local stocks, a stock assessment, catch monitoring, and enforcement plan will be required.

7.6.5. Prospects

Area 5 pink returns are expected to be below average based on brood year escapements. Area 5 chum returns are expected to be very poor.

7.7. Area 6 – Pink and Chum Decision Guidelines

7.7.1. Background

Wild chum stocks remain depressed. The only directed chum fishery has been on stocks returning to the Kitimat Hatchery in terminal areas. The hatchery was successful in reaching targets for chum fry releases in the brood year for this year's return; there is potential for a surplus for 2014. Fishing opportunities will be discussed in-season with the Kitimat Hatchery manager.

7.7.2. Constraints

- Commercial net fishing is limited to daylight hours.
- Other management measures are also in effect, including mandatory brailing for all seine sets and non-retention of chinook and steelhead in all fisheries and non-retention of chum at the Gil Island seine fishery.
- Constraints for the Kitimat gill net chum fishery are as follows:
    - Gill nets will be required to have a 149mm minimum and 165mm maximum mesh restriction when fishing chum to reduce encounters of non-target species.

- Gill net chum fisheries will be restricted to 6-1 & 6-2 unless surplus stocks are identified elsewhere in-season.

7.7.3. Decision Guidelines

Seine pink fishing opportunities are usually evaluated pre-season for a start in mid-July. The anticipated opening date is determined from brood year escapements, run timing and concurrent openings in other areas. Seine fisheries will target pink stocks near Gil Island returning to numerous streams with the Quaal and Kemano Rivers being the main producers. Further fishing opportunities are based on the assessments of the fishery with good catch rates indicating a strong return. As the season progresses the focus changes increasingly to an assessment of escapements to determine further fishing opportunities.

Opportunities for a directed terminal gill net fishery in Kitimat Arm are based on Kitimat Hatchery chum production, assessment fisheries, and in-season escapements estimates.

Local surpluses for pink and chum fisheries may be considered based on in-stream escapement assessments.

7.7.4. Issues

- Area 6 can produce large returns of pink salmon in some years (e.g. 2009 and 2013). Seine fisheries targeting large pink returns will be managed with consideration of impacts to non-target species such as wild chum.
- A pilot salmon catch monitoring program will be in place for the Area 6 seine fishery in 2014. Please see Appendix 7 for more details.

7.7.5. Prospects

A modest commercial opportunity is anticipated for 2014 based on brood year escapements in 2012. Hatchery chum brood stock collection targets were met and there is potential for a modest surplus for 2014. Pink ESSR fisheries are unlikely but would be prosecuted consistent with current policy. In-season assessment will be carried out and fishing opportunities based on that.

7.8. Area 7 Chum Decision Guidelines

7.8.1. Background

The major wild chum salmon that are actively managed in Area 7 are the Mussel, Kainet, Neekas, Quartcha and Roscoe stocks. The Kitasoo and McLoughlin Bay Hatcheries contribute to the chum harvests as well. These fisheries occur in terminal areas or the approach areas where timings of these stocks are known. Fisheries for Mussel and Kainet chum generally occur in August, while fisheries for the other stocks occur in the later part of August and September. Gill net and seine fleets are normally small for these fisheries with openings generally no more than two days per week. Pink salmon migrate during the same time period but are not targeted to the same extent as chum and are mainly caught as a by-catch.

7.8.2. Constraints

- Gill nets with 149mm minimum mesh restriction all season to protect sockeye stocks in some of the central coast systems.

- Seines are required to brail and release sockeye, chinook and steelhead to the water with the least possible harm all season.
- Fishing is limited to daylight hours.
- Net fisheries will initially be non-retention coho. Easing of restrictions in-season could occur if abundance is high.
- The Klemtu Pass area may be opened to harvest surplus chum returning to the Kitasoo Creek Hatchery.
- Openings targeting Kitasoo Creek Hatchery stocks and surplus chum in terminal areas would only be considered after August 19 and would follow the pattern of gill nets fishing first and seines second.
- The half-mile radius boundary around Mary's Cove Creek and Sockeye Creek are in effect year-round to conserve Sockeye Creek, Mary's Cove and Lagoon Creek sockeye.
- During periods of high salmon catches in Areas 7 or 8, fisheries will most likely be managed so that there is a maximum of two consecutive days of fishing. This action has been recommended by fishers and processors to maximize the value of the salmon caught.
- Where possible, openings in Areas 6 through 10 will be co-ordinated to distribute effort appropriately.

7.8.3. Decision Guidelines

Due to low brood year escapements fishing opportunities in 2014 will be dependent on in-season assessment and advice from the local advisors and on-going consultations with Central Coast First Nations.

In-season Decisions

July and First Week of August: One additional day of fishing during daylight hours is considered if the run appears strong. The assessment of run strength is based on a review of catch data and salmon escapements to the Mussel and Kainet Rivers to-date.

Second Week of August until Mid-October: The results of the past week's fisheries, status of target stocks and their implications for any potential by-catch are reviewed with Central Coast advisors (DFO is working with Central Coast First Nations on an in-season advisory body). If stock strength permits, fishing opportunities are considered each week until mid-October. Announcements for the next week's opportunities are made on the Thursday or Friday of the week preceding the proposed fishery.

Subject to in-season discussions with Central Coast advisors, Lama Pass (McLoughlin Bay) may be opened in mid-August and the fishing time may be spread over more than one day each week, depending on observed chum abundance and processing capacity. Gill nets and seines alternate their fishing each week.

Subject to in-season discussions with Central Coast advisors, portions of Spiller Channel may be opened to seines and gill nets in late August. Openings in that area will depend on chum escapements to the Neekas River.

Subject to in-season discussions with Central Coast advisors, portions of Johnson Channel and Roscoe Inlet may be opened to seines and gill nets in late August. Openings in that area will depend on chum escapements to the Roscoe, Quartcha and Clatse Rivers.

7.8.4. Issues

First Week of August: Extra fishing time may depend on other areas in the North Coast being open to fishing to reduce gear movement.

Second Week of August until Mid-October: A large increase in fleet size could adversely affect small mixed-stock runs in the area, so extra fishing time may depend on openings in other areas in the north coast.

7.8.5. Prospects

Forecasts of Area 7 pink returns have been unreliable in recent years. Modest escapements in the brood year suggest an average return. The catch in 2014 is expected to be incidental to the chum fishery. In-season monitoring will be carried out.

Chum returns have been highly variable in recent years. Brood year escapements for wild chum stocks are well below target with the exception of Neekas Creek. Hatchery releases of fry from both facilities in Area 7 were approximately thirty percent lower than most recent years but should still provide commercial fishing opportunities. Historic average survival rates would suggest a potential harvest (combined hatchery and wild) of 125,000.

7.9. Area 8 – Atnarko Chinook Decision Guidelines

7.9.1. Background

The Atnarko chinook stock is an enhanced chinook population that supports food, social and ceremonial and recreational fisheries, as well as a limited commercial chinook gill net fishery. The Nuxalk First Nation's food, social and ceremonial fishery provides the best indication of run strength and is used as a small test fishery to predict run size. Atnarko chinooks are harvested by the commercial gill net fleet in North Bentinck Arm, a portion of South Bentinck Arm, Labouchere Channel and Burke Channel. A fleet of approximately 40 gill net vessels using large mesh nets is normal for recent years. DFO is working with Central Coast First Nations on an in-season advisory body and any fisheries will proceed cautiously.

7.9.2. Constraints

- Gill nets have a 203mm mesh restriction.
- The restriction is in place so that chinooks are targeted selectively and other non-target species, such as sockeye, are not impacted.

7.9.3. Decision Guidelines

DFO is working with local advisors and Central Coast First Nations on an advisory body for fisheries in these areas.

Opportunities for a one day gill net fishery on the last week in May or the first week in June is evaluated during the pre-season planning process in November/December. If recent escapement estimates indicate an increasing or stable run, the fishery will likely go ahead.

In-season Decisions

- June opportunities are evaluated based mainly on First Nations FSC fishery catches with consideration of commercial and sport catches as well. DFO is working with Central Coast First Nations on an in-season advisory body.

7.9.4. Issues

Atnarko sockeye continue to be a major concern and any fisheries will be managed to avoid or minimize impacts on these stocks.

7.9.5. Prospects

Bella Coola/Atnarko Chinook returns were strong in 2013, estimated at 25,000 large fish and 3,000 jacks. The forecast for 2014 remains uncertain, however the assessment of current data suggests another large return. A better understanding of this year's forecast will be gained as age and CWT data become available.

7.10. Area 8 Pink and Chum Decision Guidelines

7.10.1 Background

Chum fisheries in Area 8 target mainly on Kimsquit and Bella Coola River stocks. Fisheries also occur on returns to Lower Dean streams (Elcho, Cascade and Jenny) but to a lesser extent. The Bella Coola River system is enhanced while the Kimsquit River is not. Pink fisheries in Area 8 have targeted mainly Atnarko River stocks but there is a component of Kwatna River and Koeye River pinks that have been fished. The pink fishery on Kwatna stocks occurs at the same time as the Atnarko fishery while Koeye pinks are harvested during the latter part of August. Even year pinks, particularly the Atnarko stock are of concern due to the 2010 flood impact. Fisheries in North Bentinck Arm, Dean Channel and Burke Channel are gill net only while fisheries in Fisher Channel and Fitz Hugh Sound are open for gill net as well as seine. Conservation measures to protect Rivers Inlet and local sockeye stocks are in place.

7.10.2 Constraints

- Gill net fisheries have a 158mm minimum mesh restriction until the beginning of August to protect weak sockeye stocks. Gill nets with 149mm mesh will be allowed for the remainder of the season. Gill net fishermen are requested to release all live sockeye to the water with the least possible harm, all season long.
- Fishing is limited to daylight hours.
- Net fisheries will begin with a non-retention of coho restriction in place. Easing of restrictions in-season could occur if abundance is high.

- Seines are required to brail and release sockeye, chinook and steelhead to the water all season. Gill nets are required to release steelhead.
- If salmon stocks surplus to escapement requirements are identified, fisheries could occur in areas where incidental catch or by-catch concerns do not preclude harvest activities.
- The seine opening date is usually coordinated with other seine openings on the North Coast. However it will likely be delayed to address concerns for low pink returns.
- During periods of high salmon catches in Areas 7 or 8, fisheries will be managed so that there is a maximum of two consecutive days of fishing. This action has been recommended by fishers and processors to maximize the value of the salmon caught.
- Openings will be coordinated with other North and Central Coast areas.

7.10.3 Decision Guidelines

DFO is working with local advisors and Central Coast First Nations on an advisory body for fisheries in these areas.

In November/December during the pre-season planning process, opportunities for one-day gill net assessment fisheries in the first two weeks of July are evaluated. The evaluation is mainly based on chum brood year escapements. This fishery is implemented to get an early assessment of run strength. It has very little impact on the stock because it occurs early in the run and provides information needed to either conserve or increase harvest later in the season.

In-Season Decisions

Second Week of July: The assessment openings may be extended if the runs appear strong based on a review of catches to-date. Opportunities for a gill net and seine opening on Monday in the third week of July are considered, based on the results of the assessment fisheries:

- If Atnarko pink stocks are weak but Bella Coola and Kimsquit chum stocks are strong, Subareas 8-3 and a portion of Subarea 8-4 south of a line from Walker Point to Hergest Point may be closed.
- If Kimsquit chum are weak but Bella Coola chum are strong, Subarea 8-5 may be closed.
- If Kimsquit chum are very weak but Bella Coola chum are strong, Subareas 8-5 and 8-4 north of Walker Point may be closed.

7.10.4 Issues

- Dean River steelhead remains a special concern. Between July 11 and August 15 weed lines are required for gill nets in Subareas 8-5 north of Bold Point and 8-8 to reduce steelhead interceptions.

7.10.5 Prospects

Area 8 pink escapements were very low in the brood year, particularly in the Atnarko River (a consequence of the 2010 flood), No surplus is anticipated.

No harvestable surplus to Area 8 wild chum stocks expected because of low escapements in brood years and expected impacts from the 2010 floods. Snootli Hatchery did not attain its egg target for the 2010 brood year; however a small surplus is forecasted. Average survival rates

would suggest a surplus of 15,000. Above average survivals would be required to sustain a fishery throughout the summer.

7.11. Area 9 – Rivers Inlet Sockeye Decision Guidelines

7.11.1. Background

There has been no gill net fishery in Rivers Inlet since 1995 after the sockeye returns declined dramatically in 1994. This decline was caused by poor marine survival beginning with the 1990 and 1991 brood years. Stocks have shown some improvement over the past three years, however returns for 2014 are coming from low brood year escapements and one of those years would have been impacted by severe flooding in 2010. Sockeye salmon in Rivers Inlet remain a stock of concern.

7.11.2. Constraints

- If a fishery occurs, a maximum mesh restriction of 150mm would be in place to protect Rivers Inlet chinook stocks.
- Commercial gill net boundaries will be developed through consultations with First Nations, commercial, and recreational interests.

7.11.3. Decision Guidelines

- DFO is working with local advisors and Central Coast First Nations on an advisory body for fisheries in these areas.
- Fishing opportunities for Rivers Inlet sockeye are evaluated pre-season based on brood year stock status and indications of marine survival rates.
- Commercial and recreational fisheries are very unlikely until there is a trend towards higher ocean survival and significant improvements in escapement.

7.11.4 Issues

- Sockeye returns to Rivers Inlet have been very modest for many years. The ability to assess returns in-season is limited. A trend towards higher productivity and better escapements needs to be established prior to commercial fisheries being re-established.

7.11.5 Prospects

- Brood year escapements are low; 2010 flood impacts are a concern and in general return rates have been modest for many years.
- No commercial or recreational fisheries are expected in 2014. Fishing opportunities for food, social, and ceremonial purposes will be determined in consultation with the Central Coast First Nations advisory body with their technical support.

7.12. Area 10 – Long Lake Sockeye and Nekite Chum Decision Guidelines

7.12.1. Background

A commercial sockeye fishery occurred in 2011, the first since 1996. Over the last 19 years sockeye returns to Long Lake have generally been poor, the future remains uncertain. Nekite

chum returns have been very modest for several years now, and the ability to forecast returns is limited.

Long Lake sockeye productivity has been reduced in recent years as the lake is no longer being fertilized. The previous escapement goal of 200,000 has been reduced to 100,000 sockeye as an interim escapement goal. Constraints

- If a fishery takes place, a maximum mesh restriction of 150mm will be in place to protect Docee River chinook stocks.
- Boundaries will be restrictive to protect non-targeted stocks. There will be no coho retention unless abundance warrants.

7.12.2. Decision Guidelines

- Opportunities for Long Lake sockeye directed fisheries are evaluated in-season based on Docee Fence fish counts.
- In-season escapement information will be used to evaluate fishing opportunities for Nekite chum salmon.

7.12.3. Issues

The Long Lake sockeye stock remains a stock of concern because of the long period of generally low productivity. Nekite chum in recent years have experienced a period of low productivity.

7.12.5 Prospects

Smith Inlet sockeye returns have been very modest for many years; considering the brood year escapements a harvestable surplus in 2014 is unlikely. Docee River fence provides a good assessment of returns in-season, any commercial and sport fishing opportunities will be based on that information. Nekite chum salmon escapements will be monitored in-season but no fishery is expected.

7.13. Northern Troll Decision Guidelines

7.13.1. Background

In 1999, and again in 2008, Canada and the US agreed to implement an abundance-based coast-wide chinook management regime, under which chinook fishery regimes are classified as aggregate abundance-based management regimes (AABM) or individual stock-based management regimes (ISBM). In northern B.C., troll fisheries in Management Areas 1 to 5 and Haida Gwaii sport fisheries (Areas 1 and 2) are managed under an AABM regime. All other fisheries in the north and central coast are managed under an ISBM regime. The northern B.C. (and South-East Alaska) AABM allowable catch is constrained by a specified formula agreed to by the two countries. The AABM fishery is managed annually according to an allocation calculated from this formula.

The coho harvest in western Dixon Entrance and around Haida Gwaii is from a wide variety of stocks, mostly from northern coastal mainland streams. Management adjustments may be made based on assessments of coho abundance in-season.

7.13.2. Constraints

- Chinook will be managed in-season to meet the chinook annex of the PST.
- The troll fishery is also limited to by a domestic harvest rate ceiling of 3.2% of WCVI chinook.
- Areas with known high abundance of undersized chinook will remain closed.
- Dockside monitoring will be mandatory in ITQ fisheries.
- A salmon head recovery program to recover fish with coded wire tags will be conducted.
- Coho will continue to be managed conservatively with adjustments based on in-season assessments.
- Barbless hooks and operating revival boxes are required for all fisheries.
- There will be non-retention of steelhead
- Fraser River sockeye migrating through north coast waters are protected by prohibiting sockeye retention west of 133 degrees West Longitude.
- Additional measures may be implemented in recognition of weak salmon stocks.
- The main producers of sockeye in the north and central coast are the Skeena and Nass Rivers, and trollers at times intercept a small amount of these fish in Dixon Entrance as a by-catch to their directed fisheries on coho, pink, and chinook.
- In Chapter 5: Coho Salmon in the Pacific Salmon Treaty refers to Attachment B for the Management of Northern Boundary Coho, Canada agrees to close its troll fishery in Areas 1, 3, 4 and 5 and adjacent offshore areas if CPUE minimum triggers are not met in Alaska District Area 6 troll fishery. Please see http://www.psc.org/pubs/Treaty/Treaty.pdf for more information. Parties may agree on the employment of selective fishing techniques in their troll fisheries to access other species or stocks pursuant to relevant Annex IV provisions.

7.13.3. Decision Guidelines

Sockeye

The main producers of sockeye in the north and central coast are the Skeena and Nass Rivers, and trollers at times intercept a small amount of these fish in Dixon Entrance as a by-catch to their directed fisheries on coho, pink, and chinook. Fisheries are managed to avoid migrating Fraser River sockeye by prohibiting sockeye retention west of 133 degrees West Longitude. In years of low Skeena or Nass sockeye returns sockeye retention may be prohibited throughout the north coast area.

Coho

Coho abundance will be assessed in-season, management adjustments made based on indications of lower or higher abundance.

Coho trolling will open in the northern half of Dixon Entrance on July 1, then in the southern half on July 15.

The coho troll fishery may open in Area 3 depending on coho abundance. DFO will work closely with Nisga'a to monitor coho run strength.

Initially central coast areas will be closed to troll opportunities, but this may be adjusted in-season depending on coho abundance.

Pink

Canada will manage the Area 1 troll fishery to achieve an annual catch share of 2.57 percent of the annual allowable harvest (AAH) of a portion of south-east Alaska, as agreed to in the Pacific Salmon Treaty (PST). The methodology for AAH calculations is provided in the PST. Canada can carry forward from year to year annual deviations from the prescribed catch. To optimize the pink catch, the northern section of Dixon Entrance will open to pink salmon fishing on July 1st. During this fishery, coho retention will also be allowed. Pink salmon retention will also be allowed during the chinook fishery.

If abundances permit, a troll pink fishery in Area 3 may be conducted. This fishery would be managed to minimise by-catch of chum and gear conflicts with net fleets.

If the Central Coast opens to troll, it is most likely it would be non-retention and non-possession pink in order to rebuild stocks.

Chum

Chum is expected to be weak in most mainland and Haida Gwaii systems. There will be non-retention of chum in effect all year, with the exception of Subarea 101-4 and a portion of 101-8. Chum retention will be permitted in this small area during the regular pink and coho fishery in order to assess the proportion of US hatchery origin chum. Whole-head retention is mandatory for all retained chum for post-season otolith thermal mark analysis.

Chinook

For PST purposes, the accounting year for chinook runs from October 1 to September 30 of the following year. The allowable AABM northern B.C. total allowable catch (Management Areas 1 to 5) is 290,300. The Area F troll allowable catch will be 221,300 and the Haida Gwaii recreational expected catch is 69,000.

Given the poor outlook for Fraser River Spring 5-2 and Summer 5-2 chinook in recent years, the Department has planned a cautious management approach at the start of the season based on returns less than 45,000 (zone 1-please see Southern B.C. IFMP for further details on Zone 1 management). Fishery restrictions are then reviewed in mid-June based on the in-season abundance of chinook at the Albion test fishery and estimated abundance of Fraser Spring 5_2 and Summer 5_2 chinook returns. Troll will remain closed for the first three weeks of June due to weak stock concerns for Spring 5_2 and Summer 5_2 chinook. Please refer to Southern BC Salmon IFMP Section 5.1.4 for more information.

The fishery is scheduled to open June 21st in 2014 under zone 1 management for Fraser River Spring 5-2 and Summer 5-2 chinook. The opening date may move up to June 15th provided the status of returns of Fraser River Spring 5-2 and Summer 5-2 chinook is upgraded to zone 2 in early June. The closing date will be determined in-season using an effort harvest rate

relationship to manage the WCVI chinook 3.2% exploitation rate. All chinook must be unloaded and validated within 5 days of the closure date. The fishery will be further constrained by an August closure to protect weak stocks of WCVI chinook as this period is known to have high proportions of WCVI in the catch. The chinook fishery is expected to re-open in September, provided the estimated exploitation rate of WCVI remains below the 3.2% ceiling, and close on September 30th.

In-season Decisions

Harvest opportunities may be adjusted on short notice based on the in-season assessments of stock abundance and fishery impacts.

Pink salmon opportunities are anticipated to remain available throughout the coho and chinook fishery.

The Department manages the Area F chinook troll fishery to limit its catch of WCVI chinook to 3.2% of the return to Canada. For the past 11 years, in-season DNA analysis of the stock composition of the catch and the pre-season WCVI forecast have been used to manage to this objective. Since 2008 the pre-season WCVI forecasts have been below the post-season WCVI return to Canada estimate resulting in substantial foregone catch in most years. The Department has developed an in-season management tool to estimate the WCVI harvest rate using the historical daily fishing effort to daily WCVI harvest rate relationship derived from previous year's DNA-based stock composition estimates and post-season estimates of WCVI returns to Canada. The Department will therefore manage the 2014 Area F Chinook fishery to the 3.2% WCVI exploitation rate using this tool which is independent of the WCVI pre-season forecast. In addition, the fishery will be spatially constrained to the recent past's chinook fishing area and temporally constrained by being closed for the month of August when WCVI are known to be more prevalent. The Department will continue to collect and analyse DNA samples from the catch which will be used for post-season identification of stock composition in the catch and post-season evaluation of management objectives

The expected use of chinook by the Haida Gwaii recreational Chinook fishery is 69,000 pieces. The recreational chinook catch will be re-assessed in-season. If the in-season estimate of total annual recreational catch is expected to be less than the forecasted amount, a portion of the total AABM TAC may be reallocated to the troll fishery. If this is the case, the amount will be divided up amongst licences based on their current proportion of the troll TAC, after all transfers have been taken into account.

7.13.4. Issues

Chum is expected to be weak in most mainland and Haida Gwaii systems. There will be non-retention of chum in all areas with the exception of northern parts of Dixon Entrance where stock composition data is collected

7.13.5. Prospects

The PSC CTC released the chinook Abundance Index (AI) on April 1st. The forecasted AI for NBC is 1.99 which sets the AABM TAC at 290,300 pieces. This is a significant increase from the 2013 post-season revised AI of 1.51 and AABM TAC of 220,300. No formal forecasts are provided for other species.

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.[16] 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.

DFO consults with Aboriginal groups when fisheries management decisions may potentially affect them in accordance with S. 35 of the *Constitution Act, 1982*, relevant case law, and consistent with Departmental policies and considerations. 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

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

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 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 food, social and ceremonial (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 staff 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

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; and
- 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.

Regional Compliance Program Delivery

For the salmon fisheries in the Pacific Region, C&P will be utilizing a broad scope and blend 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 those measures directed towards conservation objectives.
- Fish habitat protection will continue to be a part of fishery officer efforts coordinated regionally by the Fisheries Protection Program.
- Utilize 'Integrated Risk Management' to ensure fishery officer efforts are focused and directed at problems of highest risk.
- Continue to have fishery officer presence through patrols by vehicle, vessel and aircraft to detect and deter violators.
- Monitor and support at-sea observers and dockside monitors when possible 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 stakeholders 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

Conservation and Protection works closely within the Fisheries Management sector and Fisheries Protection Program to ensure that fishery management plans are enforceable and implemented in a controlled, fair, and professional manner and that habitat is protected. C&P has a multi-faceted role as educator, referee, mediator and law enforcer.

Conservation and Protection participates in 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. 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 Nation's planning committee meetings that involve many First Nations' groups 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.

Compliance Strategy

In 2014, 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 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 in 2014. There are, however, other competing priorities such as supporting the fisheries Protection Program in protecting habitat, 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.

The results of the previous year's annual review (e.g. 2013 season) are provided in appendix 4.

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	
Vacant	
Vacant	
Alternate	
Province (ex-officio) (One) Member 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), WorkSafe BC, 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., WorkSafe BC 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: www.tc.gc.ca/eng/marinesafety/menu.htm
www.fishsafebc.com

2.1 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.

2.2 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.

2.3 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.

2.4 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 WorkSafe BC website at www.worksafebc.com).

2.5 Other Issues

2.5.1 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

2.2.5 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

2.5.3 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

2.5.4 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.

2.6 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	www.fishsafebc.com

2.7 WorkSafe BC

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 WorkSafe BC 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
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.

2.8 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. In 2013 the TSB released investigation reports on two prawn fishing vessels; the Jessie G and the Pacific Siren.

For more information about the TSB, visit our website at 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).

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.

APPENDIX 4: POST-SEASON REVIEW 2013

4.1 Conservation/Sustainability Objectives

NOTE: The objectives shown in bold below is the wording from the 2013/14 Integrated Fisheries Management Plan.

4.1.1 Rivers and Smith Inlet Sockeye

The objective for Rivers and Smith Inlets sockeye salmon is to continue with rebuilding these stocks to reach escapement goals and achieve a sustainable stock that will support harvest.

There has been no commercial or sports fisheries targeting River Inlet sockeye for many years. Escapements, with the exception of 2011, have fallen well short of target levels. Commercial and sports fisheries will continue to be curtailed until a trend to higher productivity has been established. This trend will be established from the adult spawner survey.

In 2013 there was no commercial fishery in Smith Inlet. The objective for Smith Inlet sockeye remains to rebuild these stocks to escapements of over 100,000 adults before considering commercial or sport fishing opportunities. Docee Fence counts will be instrumental in determining when the escapement goal is attained.

4.1.2 Skeena River Sockeye

The objective for Skeena River sockeye is to maintain sustainable stocks that will meet WSP objectives and support FSC, commercial and recreational harvests.

The preliminary post-season estimate of the Skeena Sockeye total return for 2013 was 490,000. The preliminary post-season estimate of escapement past the Tyee test fishery was 440,000 and the in-season estimate at Tyee was 355,000

No Skeena sockeye directed commercial fisheries occurred in 2013. Recreational bag limits for sockeye were reduced to zero in marine Areas 3, 4 and 5 and recreational fishing for sockeye was closed for the entire season in all streams and lakes in the Skeena watershed. First Nations FSC fisheries for Skeena sockeye were closed in the marine approaches and the Skeena and Babine Rivers from August 6th to August 23rd. The preliminary Skeena sockeye FSC catch estimate for 2013 is 38,000.

4.1.3 Coho

The objective for north and central coast coho is to maintain rebuilding success and ensure overall exploitation does not exceed sustainable rates.

Coho abundance in 2013 was well above recent year averages in the north coast and near average in the central coast. Coho retention was permitted, based on in-season abundance indices, in

commercial net fisheries in Areas 3 and 6 in 2013. The Area F troll fishery harvested 400,000 coho in portions of Areas 1 to 6 and associated offshore areas.

4.1.4 North Coast Chum

The objective for wild north coast chum is to rebuild weak wild runs, while providing opportunities to harvest surplus stocks.

Chum stock status remained a concern in 2013. There were no commercial net fisheries that targeted wild chum from Area 3 to 6 in 2013. In Area 3, a 0.5 nautical mile ribbon boundary around Pearce Island and a 1.0 N.M boundary around Wales Island was in place where higher chum encounter rates have been observed in past years. Retention of chum for gillnet and seines was permitted in a small portion of Area 3 around Wales Island near the U.S.A. border during the first 3 weeks of July when hatchery chum are prevalent. Chum otoliths collected from this portion of the fishery have been analysed for hatchery thermal marks to confirm the high proportion of hatchery fish.

4.1.5 North Coast Chinook

The objective for West Coast of Vancouver Island (WCVI) chinook is to manage Canadian ocean fisheries to an exploitation rate of 10%. The Canadian ocean fisheries measured in the exploitation rate objective for WCVI chinook includes Northern BC Troll, Haida Gwaii Sport, WCVI Troll and WCVI Sport fisheries. The objective for the Northern Troll fishery is to manage in accordance with the allocation policy, and to limit the harvest rate on WCVI chinook to a maximum of 3.2% of the return to Canada.

The pre-season calculated allowable catch of WCVI chinook by the Area F troll fishery in 2013 was 1,800 based on a pre-season forecast of 56,000 WCVI chinook returning to Canada. The in-season catch was estimated to be 2,897 WCVI chinook from DNA analysis and total catch was 69,264. The post-season WCVI return to Canada was estimated at 215,342. The harvest rate on the return to Canada was 1.3% measured using DNA. The post season exploitation rate on WCVI chinook by the NBC troll fishery was 1.1% measured using CWT's.

Since 2001, the exploitation rate by the Northern troll fishery has averaged 2.6%. Exploitation in other non-terminal Canadian ocean fisheries was 15.4% in 2013 and has averaged 12% since 2001. Total United States exploitation (in Southeast Alaska troll, net and sport fisheries) on these populations was 16.8% in 2013; the average since 2001 has been 17.6%.

4.1.6 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 Haida Gwaii. 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 allocation in accordance with "An Allocation Policy for Pacific Salmon."

Skeena River First Nations FSC harvests were below average due to the record low returns of Skeena sockeye. All Skeena First Nations expressed concerns over the low sockeye abundance; however all Skeena First Nations cooperated in conservation efforts during 2013.
Nisga'a Fisheries Program activities continued providing DFO and Nisga'a stock assessment managers with valuable information (e.g., run size and Nisga'a catch) required to successfully manage the Nisga'a fishery and assess Nass area stocks.

4.3 Recreational and Commercial Objectives

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

Recreational salmon opportunities were maintained for species other than Skeena sockeye. Some commercial opportunities were provided for Nass First Nations inland demonstration fisheries while ensuring sustainability in accordance with the Wild Salmon Policy. Demonstration fisheries were successfully implemented for the Nisga'a and Gitanyow First Nations on the Nass River.

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, pink, 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 2013 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 2013 resulted in projected coast-wide salmon shares as follows: seine 39.4%, gill net 28.4% and 32.4% troll. Analyses indicate that what was achieved in 2013 was 56.6% seine, 18% gill net and 25.4% troll.

4.6 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 2013 brood enhancement production:
http://www.pac.dfo-mpo.gc.ca/sep-pmvs/ifmp-pgip-eng.html

4.7 Compliance Management Objectives

Inspections are carried out on vessels, buying stations, processors, transporters, cold storage facilities and brokers. The results of the inspections and the effort consumed are recorded in a database. This information is reviewed to evaluate where compliance objectives have been met and if the compliance strategies were effective. Narrative information is also collected and shared. Compliance rates are calculated for each area and fishery but it must be recognized that these are subjective. Using the information collected in-season and during post-season activities, priorities are revalidated and adjustments made as necessary.

5 APPENDIX 5: NORTHERN B.C. / SKEENA RIVER FIRST NATIONS FISHING PLAN

5.1 Catch Monitoring and Reporting Initiative

5.1.1 First Nation Electronic Reporting System

Since the year 2000, Fisheries and Oceans Canada have been working with First Nations groups to design and develop an electronic recording and reporting systems for First Nations Food, Social and Ceremonial catch data. The 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 groups 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

Historically, First Nations FSC fisheries that intercept chinook and/or coho indicator stocks have been inconsistently or inadequately sampled for CWT's and adipose-clip mark rate. Since many of these fisheries are terminal and intercept chinook and/or coho indicator stocks, 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 the 2006 Final Report of the Pacific Salmon Commission (PSC) Expert Panel (http://www.psc.org/info_codedwiretagreview_finalreportintro.htm).

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 across tagging programs, fishery sampling, escapement sampling, and data management 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)

In 2009, the Department, with collaboration from the Nuxalk First Nation, introduced CWT sampling in the Lower Bella Coola River fishery that impacts Atnarko Chinook salmon, an indicator stock. This program was very successful in acquiring mark rate information and CWT recoveries and will continue in 2014.
Over the course of the CWT Improvement program, there has been an increase in the number of snout and head samples obtained from the FSC fisheries across the spatial and temporal

distribution of the fisheries for Chinook salmon. Samples from coho salmon continue to be a challenging area. In 2013, DFO and FN staff observed an increased awareness of the program including multiple instances of fishers having samples ready for collection by the sampler in advance of a prompt.

With the end of the CWT Improvement program, work will focus on communication and awareness of the ongoing need to collect CWT samples in FSC fisheries in preseason discussion for 2014 fisheries, and to integrate and provide support for directed or fisher-submission sampling programs in FSC monitoring programs.

5.2 Specific Conservation Measures

When a conservation concern has been identified for an individual stock that is harvested by First Nations, then consultation is undertaken to adapt the fishing plan to provide the necessary protection to the weak stock.

5.3 Communal Licence Harvest Amounts

First Nations opportunities to harvest salmon for food, social and ceremonial purposes is provided 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 details of the FSC fishery, including the dates, times, methods, and locations of harvest. Communal licences for coastal First Nations are typically multi-species, and are issued on an annual basis. Licences may also be amended for shorter durations. For inland 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 license 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 north and central coast of B.C. are outlined in Table 5-1 below. Actual opportunities and catches will be dependent on, among other factors, in-season assessments of actual stock strength and 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

	Areas 1 & 2	Areas 3 to 6 North	Areas 6 South to 10	Total
Sockeye	20,000	209,250	50,000	279,250
Coho	5,000	8,650	8,470	22,120
Pink	2,500	32,425	13,270	48,195
Chum	2,500	4,975	12,520	19,995
Chinook	3,000	15,860	7,970	26,830
Total Salmon	33,000	271,160	92,230	396,390

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 retirement 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. Since 1994-95, when the ATP was first launched and including PICFI, 504 commercial licences have been relinquished for Aboriginal groups.

Discussions regarding demonstration fisheries that will provide economic opportunities for First Nations are on-going with First Nations and stakeholders. For 2014, 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 food, social and ceremonial fisheries, under similar rules as the commercial fishery and fish harvested will be off-set with licences retired from the commercial fishery.

5.5 Inland Demonstration Fisheries

See Nass River Sockeye Inland Demonstration Fishery, section 7.4.2, and Skeena River Sockeye Inland Demonstration Fishery Management Plan, section 7.5.3.

5.6 Treaty Fisheries

Nisga'a Fisheries

The Nisga'a Annual Fishing Plan (NAFP) is developed by the Joint Fisheries Management Committee (JFMC) and governed by the terms of the Nisga'a Final Agreement and the Nisga'a

Harvest Agreement. The Nisga'a Harvest Agreement includes Nisga'a fish allocations expressed as a percentage of the adjusted total allowable catch of Sockeye and Pink. The NAFP is developed in accordance with Chapter 8 of the Nisga'a Final Agreement. Once approved by the Minister, the Annual Fishing Plan remains in effect until replaced the following year. The fishing plan applies to persons who harvest fish, other than Steelhead, in Nisga'a fisheries.

Nisga'a fish allocations of Sockeye and Pink, as defined in the Nisga'a Harvest Agreement, are set out as a percentage of the Canadian Total Allowable Catch for Nass Area stocks. Nisga'a Harvest Agreement fisheries have the same priority in fisheries management decisions as other commercial fisheries that target Nass Area salmon stocks. Other Nisga'a salmon allocations, as defined in the Nisga'a Final Agreement, are set out as a percentage of the Total Return to Canada (TRTC) up to maximum catch thresholds (63,000 sockeye, 6,300 pink, 12,600 chinook, 19,200 coho, and 12,000 chum) in large return years. These other Nisga'a salmon allocations have the same priority in fisheries management decisions as other domestic (FSC) fisheries that target Nass salmon.

The NAFP defines the escapement goals required to guide management decisions for Nass salmon stocks, calculates Nisga'a allocations for each salmon species and provides the general regulatory requirements for catches of each salmon species. The NAFP is reviewed by the JFMC prior to being submitted to the Minister for approval. Nisga'a Lisims Government is responsible for the internal allocation of catch opportunities between Nisga'a fishers and day to day operation of the Nisga'a fishery.

Pre-season estimates and ranges for the Nisga'a salmon allocations in 2014 are:

a) Nass Sockeye: The Total Run size probability point estimate from the average of five different pre-season forecast methods is 643,000 (50%) with a range in point estimates between 535,000 (75%) and 787,000 (25%). Assuming a 16% Alaskan exploitation rate (based on the average of run reconstructed even-years from 2000 to 2012 = ~101,000 Nass sockeye), the average point estimate of the Total Return to Canada (TRTC) is **542,000** with a range of point estimates from **451,000 (75% probability) to 663,000 (25% probability)**. Based on the pre-season TRTC forecasts and the minimum escapement goal (**100,000**), the Nisga'a allocation ranges between **74,000** and **115,000**. The mean TRTC estimate (**542,000**) will be used for calculating the initial target for the in-season Nisga'a allocation (~**94,000**). The actual allocation target may be more, depending on run strength, to account for the current cumulative underage (**~6,000**) accrued from 2000 to 2013;

b) Nass Pink: The average point estimate of the TRTC from a 5-year average pre-season forecast method for even-year returns of Nass Pink is **496,000** with a range of point estimates from **260,000 (75% probability estimate) to 948,000 (25% probability estimate)**. Based on the pre-season TRTC forecasts and the minimum escapement goal (**150,000**), the Nisga'a allocation ranges between **6,000** and **114,000**. The mean TRTC estimate (**496,000**) will be used for calculating the initial target for the in-season Nisga'a allocation (~**43,000**) of Nass pink. There are no cumulative underages or overages accrued from 2000 to 2013 for consideration of in-season allocations for 2014;

c) Nass Chinook: The average point estimate of the TRTC for Nass chinook salmon from two different pre-season forecast methods is **24,000** with a range of point estimates from **18,000 (75% probability estimate) to 31,000 (25% probability estimate)**. Based on the pre-season TRTC forecasts and the minimum escapement goal (**10,000**) for Nass chinook, the Nisga'a allocation ranges between **3,800** and **6,500**. The mean TRTC estimate (**24,000**) will be used for calculating the initial target for the in-season Nisga'a allocation (~**5,000**). The actual allocation target may be more, depending on run strength, to account for the current cumulative underage (**~9,000**) accrued from 2000 to 2013. Underages would only be targeted in productive return years as assessed during the season;

d) Nass Coho: The average point estimate of the TRTC from the 5-year average pre-season forecast method is **220,000** with a range of point estimates from **151,000 (75% probability estimate) to 320,000 (25% probability estimate)**. Based on the pre-season TRTC forecasts and the minimum escapement goal (**40,000**), the Nisga'a allocation ranges between **12,100** and **19,200 (maximum limit)**. The mean TRTC estimate (**220,000**) will be used for calculating the initial target for the in-season Nisga'a allocation (**17,600**). The actual allocation target may be more, depending on run strength, to account for the current cumulative underage (**~2,250**) accrued from 2000 to 2013. Underages would only be targeted in productive return years as assessed during the season; and

e) Nass Chum: The average point estimate of the TRTC for Nass area chum salmon from the 5-year average pre-season forecast method is **15,000** with a range of point estimates from **11,000 (75% probability estimate) to 20,000 (25% probability estimate)**. Based on the pre-season TRTC forecasts and the minimum escapement goal (**30,000**) for Nass area chum, the Nisga'a allocation is **0.** The mean TRTC estimate (**15,000**) will be used for calculating the initial target for the in-season Nisga'a allocation (**0**). The actual allocation target may be more, depending on run strength, to account for the current cumulative underage **(~30,000**) accrued from 2000 to 2013. Underages would only be targeted in productive return years as assessed during the season.

6 APPENDIX 6: NORTHERN B.C. / SKEENA RIVER RECREATIONAL FISHING PLANS

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*.

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.

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

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.

A Vision for Recreational Fisheries in British Columbia was developed cooperatively by DFO, the Province of BC and the SFAB. It serves as a framework for developing initiatives and actions to support achievement of a collective vision for the recreational fishery in BC.

The recreational fisheries Vision is available at: http://www.pac.dfo-mpo.gc.ca/consultation/smon/sfab-ccps/docs/rec-vision-eng.pdf

6.1 Catch Monitoring and Reporting Initiative

The Sport Fishing Advisory Board (SFAB) and the recreational fishing sector strongly support effective fishery monitoring and catch reporting programs in recreational fisheries. The SFAB has been working with DFO on initiatives to strengthen fishing monitoring and catch reporting in the recreational fishery for a number of years.

As of 2013, recreational harvesters are required as a condition of the Tidal Waters Sport Fishing Licence to report information on their recreational fishing activity and catch to DFO representatives when requested. Commonly, recreational harvesters may be requested by a Fishery Officer or designated DFO representative at the dock or through a creel survey to provide important catch and effort information. A recreational phone survey is also conducted nationally by DFO every 5 years. In 2012, a new internet survey was initiated to provide monthly estimates of effort for all methods of recreational fishing, including angling, trapping, beach collecting and diving, and to provide monthly estimates of catch for all sport caught species.

Information on the internet recreational survey is available at: http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/irec/index-eng.html

6.1.1 Increasing Coded Wire Tag (CWT) submission

Historically, recreational fisheries that intercept chinook and/or coho indicator stocks have been inadequately sampled for CWT's. This generates unknown bias for cohort analyses and implementation of PST management regimes for chinook and coho salmon. These circumstances were flagged in the 2006 Final Report of the Pacific Salmon Commission (PSC) Expert Panel. http://www.psc.org/info_codedwiretagreview_finalreportintro.htm

In 2009, the PSC began a 5-year 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 across tagging programs, fishery sampling,

escapement sampling and data management to meet CWT analytical standards. For the Recreational fisheries, CWTIT funding has supported communication servicing and infrastructure improvements throughout the Pacific Region to increase awareness within the recreational fishing industry.
The CWT program relies on 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 last 5 years, the recreational sector has made significant gains in increasing submissions of chinook and coho heads. In 2013, over 20,000 heads were submitted – four times more than the average number of heads submitted from 2000-2006.

Recreational catch taken on guided trips, both lodge-based and non-lodge based is one element of the sport 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 2014, the Department will strive to increase the proportion of guiding companies collecting heads to better represent their fishing activity. Where possible, head collections and logbook data will be combined to realize the full benefits of these programs.

With the end of the CWT Improvement program, work will focus on communication and awareness of the ongoing need to collect CWT samples in recreational fisheries and working with the recreational sector in identifying efficiencies to deliver the program cost-effectively.

6.1.2 Recreational Electronic Logbooks

The development of an improved catch monitoring regime will continue to be a priority in the management of recreational fisheries. The Department of Fisheries and Oceans is working with the Sport Fishing Advisory Board to develop catch monitoring standards and logbook systems for the recreational fishery.

Since 2007, the Department has been working with the 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 3 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 are captured by GPS location at sea, by individual fish. 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 entered with a GPS location. Data from this component can be easily sent to the Department.

In 2014 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, Carmen McConnell at 250-756-7272.

7 APPENDIX 7: NORTHERN B.C. / SKEENA RIVER COMMERCIAL FISHING PLAN

7.1 Catch Monitoring and Reporting Initiative

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 2014, a number of catch monitoring pilot programs are continuing to be 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 continued pilots for 2014. Competitive (full-fleet) fisheries will be expected to implement pilot catch monitoring programs in the following areas:

In the North Coast in 2014, pilot catch monitoring programs will continue to be in place for gill net fisheries in Areas 3 to 5 and for seines in Areas 3 and 6. The intention of these pilot programs is to provide more accurate and timely in-season landed catch information to managers through the electronic reporting of catch information. In addition, at-sea observers will be deployed in these fisheries at times to provide independent monitoring of at-sea releases.

7.2 Coded wire tag (CWT) sampling of freezer troll catch

Unrepresentative sampling of CWT's in fisheries is a serious concern because it generates unknown bias for cohort analyses and implementation of Pacific Salmon Treaty management regimes for chinook and coho salmon. There are three on-going concerns with CWT sampling of freezer troll catch which will continue to be addressed in 2014.

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'. 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 and other routes.

The third concern results because freezer trollers often land two or more weeks of catch during one landing. The Mark Recovery Program (MRP) is required to estimate the catch of CWTs by week to support PST management regimes. 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 2014, locations where freezer trollers will be able to pick up packages of bags and labels will be announced via Fisheries Notice.

7.3 Implementation

Due to the 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. Announcements are made at least weekly, usually every Thursday afternoon at 14:00 hours and during days when a fishery is in progress, usually prior to 16:00 hours, and occasionally more frequently. Although it is not stated under each week in each area of this fishing plan, management actions planned 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 harvest abundant salmon stocks while minimizing the incidental harvest and by-catch of those stocks that are at less than abundant levels.

In 2014, 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 fishers. Lessons learned from the demonstration fisheries will be considered for inclusion into fisheries of the future. Reports on previous demonstration fisheries can be found online at: http://wwwlpac.dfo-mpo.gc.ca/species/salmon/policies/default_e.htm

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

This section describes anticipated commercial licence area allocations for each gear type and for each species of salmon in the North Coast based on projected allocations for 2014. As in previous years, recommendations on licence area allocations for the upcoming season are provided to the Department based on discussions among members of the CSAB.

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.

- 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.

Below is a complete list of allocation shares by gear type, per species, for 2014 fisheries.

NORTH COAST

North Coast Sockeye

Areas	Potential Harvest (Pieces)	Seine A	Gill Net C	Troll F
1, 3 to 5, 101 to 105	777K	25%	74.8%	0.2%
6 to 10	3.0K	50%	50%	0%

Notes on sockeye allocations:

- Area 3 (Nass) estimate of 240K, Area 4 (Skeena) estimate of 525K, Area 5 estimate of 10K, and area F estimate of 2K were used for planning purposes. The actual TAC available will be established based on in-season information
- Areas 6 to 10: Potential harvest of 3K in Areas 6 to 8. Allocation percentages for Area A and C were adjusted to 50:50 to reflect expected sockeye by-catch by Area A during pink fisheries in those areas. The sharing percentages were adjusted to best reflect harvest values for planning purposes and are not intended to limit fisheries.

North Coast Pink

Areas	Potential Harvest (pieces)	Seine A	Gill Net C	Troll F
1 to 5, and 101 to 105	476K	74%	24%	2%
6 to 10	76K	85%	15%	0%

North Coast Chum

Areas	Potential Harvest (pieces)	Seine A	Gill Net C	Troll F
1,2,101 to 111,130,142	0.3K	55%	45%	0%
3 to 5	50K	65%	35%	0%

6 to 10	155K	55%	45%	0%

Notes on chum allocations:

- No chum retention in Areas 4 and 5. Catch shares in Areas 6 to 10 have been highly variable in recent years and depends on abundance and amount of gear fishing.
- Area 3 fisheries are shaped to avoid Canadian wild chum. Actual Area 3 harvest in 2013 was approx. 54K with 42K Area A and 12K Area C. Shares are not intended to restrict harvest opportunities in-season.

North Coast Coho

Areas	**Potential Harvest (Pieces)**	**Seine A**	**Gill Net C**	**Troll F**
1 to 10, 101, 102, 105-107, 130, 142	285K	10%	7%	83%

Notes on coho allocations:

There will be opportunities for directed coho harvest in troll fisheries on the north coast of B.C. The expected harvest of 285K is approximately the four year average landings.

North Coast Chinook

Areas	**Potential Harvest (Pieces)**	**Seine A**	**Gill Net C**	**Troll F**
1 to 5,101, 102, 130, 142	160K	0%	3.1%	96.9%
6 to 10	5K	0%	99%	1%

Notes on chinook allocations:

There are no directed chinook fisheries on the north coast of B.C. for the seine fleet. Directed gill net fisheries occur in Areas 4 and 8 and there is some by-catch in other north coast fisheries.

*Note: Due to conservation concerns for stocks of concern (e.g. WCVI chinook) the expected harvest in the NC AABM Area F troll fishery may be less than the TAC of 221K. A potential harvest of 160K was used for Areas 1 to 5, 101, 102, 130 and 142 for planning purposes to reflect an expected harvest of approximately 155K NC AABM chinook plus an additional 5K is allocated to the Area C fishery.

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 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 (starting April 1, 2013 to March 31, 2015) 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.

7.6 Licence Application and Issuance

The 2014/15 salmon licensing period encompasses April 1, 2014 to March 31, 2015. Licence renewal and payment of fees is mandatory on an annual basis prior to the expiry date of each fishery, in order to maintain the eligibility to be issued the licence in the future. Please note the licence eligibility will cease if it is not renewed annually. Please see p. 14 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 250-756-8385); and
   ii. Submission of all fish slips for 2013 (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.html

7.6.1 Fisher Identification Number (FIN)

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.

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 2014 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). This system will be available to fishers for the 9th consecutive salmon season. The E-Log software will be promoted from a pilot phase to production phase where the 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. E-logs have been also developed for the prawn and tuna fisheries. 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 160 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

All opening announcements will contain the species that will be allowed to be retained, and those which must be released to the water with the least possible harm. The fishing season will begin with the following non-retention rules will be in place:

Species	Non-retention fisheries
Steelhead	All commercial fisheries
Chum	Troll, seine and gill net in Areas 4 and 5.
Chinook	All seine fisheries

In-season management actions may take place to include other non-retention species, or allow retention of some species that show in-season strength.

7.9 Revival Tanks

Revival tanks conforming to the Conditions of Licence are required, and all prohibited species captured as by-catch must be either revived in the revival tank and released, or released directly to the water with the least possible harm. Management decisions will be influenced by compliance with revival tank provisions.

While gill net fishing, revival tanks must be operating from 10 minutes prior to the commencement of retrieval of the net and continue in operation at all times during retrieval and while fish are being held in the tank. For seine and troll fishers, the revival tanks must be operating while the seine net or hooks are in the water and while fish are being held in the tank. The revival tank(s) and equipment must be kept clean and in operable condition and shall be used for no other purpose than that outlined above. 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

In Management Areas 1 to 10, gill nets of different constructions may be used. Net construction may be either multistrand (30 filaments), or four, five or six filaments (Alaska twist). Specific restrictions such as the specifications for net construction and revival boxes are found in the conditions of the individual licences, which are attached to the licence. Fishers are urged to read these conditions carefully to ensure that their vessel and fishing techniques are in accordance with their licence.

All gill nets will meet one of the following configurations:

1. Nets may be hung without a weed line (corkline to web distance 0 to 45 cm) to a maximum of 60 meshes deep.
2. In Management Areas 3 to 5, nets may be greater than 60 meshes deep, but must be hung with a weedline (corkline to web distance minimum 1.2 m, maximum 1.5 m) to a maximum of 90 meshes deep. As well, every fifth cork must be red or another distinctive colour (not white).
3. Between July 10 and August 14 weed lines are required for gill nets in Subareas 8-5 north of Bold Point and 8-8. Maximum depth is 60 Meshes. Corkline to Web Distance a minimum of 100 cm and a maximum of 154 cm.

Specific restrictions for net configuration are found in the Fishery Notice issued prior to every commercial fishery. Fishers are urged to read these carefully to ensure that their fishing gear is in accordance with the opening.

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. As in 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 hold or acquire sufficient quota to do so.

Requirements include the following [less than 500 lbs (round weight) 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;
- Specific locations and times at which landing of fish is permitted; and
- 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 electronic monitoring requirements described in the Groundfish Integrated Fisheries Management Plan. Please consult the Groundfish Integrated Fisheries Management Plan for more information.

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 2014. There are no additional monitoring requirements.

Pilot Bocaccio Rebuilding Measures in Salmon Troll

Based on updated science information, the Department is pursuing Boccaccio catch reductions from current catch levels of approximately 137 tonnes (inclusive of trawl, groundfish hook and line, salmon troll, and recreational sectors) to 75 tonnes over a three year period, in order to support stock rebuilding. Beginning in 2013/14, the salmon troll fishery was subject to trip limits specifically for Boccaccio. The Department will review the efficacy of these pilot measures at the end of each fishing season and consider any additional measures necessary to support stock rebuilding. Please refer to Conditions of Licence for further information. More information on the Bocaccio Rebuilding Plan is available at: http://www.pac.dfo-mpo.gc.ca/fm-gp/mplans/2014/ground-fond/ground-fond-2014-a9-eng.pdf

7.12 Selective Fishing/Conservation Measures

In 2014, the Department will work with the 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.

Skeena River August Gill Net Fisheries

Any fisheries on or after August 1 will be short-net, short-set gill net fisheries to reduce impact on steelhead, coho and chum.

For the August gill net fishery, the following rules will apply:

- Half-length nets: Maximum net length will be 100 fathoms, or 187.5 m. It will not be acceptable to have a regular length net on your drum and only set half. It will also not be acceptable to have both halves of the net on your drum. Only one (half-length) net will be allowed on your drum or in the water.
- 20 minute soak times: The maximum amount of time the net is allowed to be in the water from the time it is completely set to the time it begins to be retrieved is 20 minutes. Note that this "soak time" is designed to equal a 40 minute time from when the first portion of the net enters the water to the when the last portion of the net leaves the water. Times will be monitored on the grounds.
- Fish handling: Gill net fishers are encouraged to handle prohibited species with the greatest of care. Operating revival boxes are mandatory as in all gill net fisheries. However, if the salmon is in a vigorous condition, it is best to release it directly to the water rather than put it in the revival box. Fishers are asked to use their judgement on which fish should go into the revival box before they are then released to the water.
- Reduced fishing area. In order to effectively monitor this selective fishery, the fishing area will be reduced. This will be achieved by closing the northern portions of Chatham Sound.

The commercial gill net fleet is reminded that the success of this selective fishery is critical to their future access to Skeena sockeye. In-season decisions on further fishing days will be directly dependant on compliance to the above restrictions.

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 2014, the following will be implemented in fisheries identified for catch monitoring pilots (Area A Seine: PFMA 3 and 6; Area C Gill net: PFMA 3 to 5):

- Designated landing sites (list to be developed based on recommendations from the Area Harvest Committees)
- Catch estimates to be communicated prior to any shore-based offload
- 20% independent verification of landed catch through a designated service provider
- Deployment of at-sea observers

Additional details on the catch monitoring pilots are being finalized and will be communicated via Fisheries Notices, and the 2014 Conditions of Licence.

7.14 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 improves product quality, increases 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.

Demonstration projects are being planned for implementation in 2014. These include

- Area 4 seine sockeye individual transferable quota (ITQ) please see Section 7.5.3,

- Area F chinook (ITQ) please see Section 7.13
- Nass inland demonstration fishery, please see section 7.4.3, and the
- Skeena inland demonstration fishery, please see section 7.5.3.

7.15 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 the regular commercial fishing areas fleet (licence areas A through H) 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:

- 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 a formal arrangement (agreed to by DFO) between the original share-holders and the recipient. Requests have involved transfer from downstream to upstream locations, and vice versa. See section B below for more information on eligibility.
- Transfers of uncaught commercial Total Allowable Catch (TAC) 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. In these cases, DFO would make a decision on whether to allow a requesting group to access some or all of the uncaught TAC.
- 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 (both for target and bycatch species stocks)
2) Consistent with conservation measures and allocation approaches (if any) for stocks of concern, including by-catch species/stocks;
3) Respect existing aboriginal and treaty rights and the priority of Food, Social and Ceremonial access.
4) Consistent with international obligations;

5) Consistent with objectives and management measures 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. For example, 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 any substantive incremental costs to DFO in areas such as monitoring stock assessment and enforcement.

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. commercial 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 Nation entities who are signatories to arrangements providing a defined percentage commercial 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.
- In most cases, transfers will be based on a percentage share of the available commercial TAC. Alternate TAC-based approaches for calculating transfer shares may be considered as indicated in this management plan or with approval from the RDG.
- For share transfers between regular commercial fisheries, individual salmon shareholders or groups of salmon shareholders; the mechanism (e.g. tracking, management and accounting of shares) for facilitating transfers needs to be described and agreed upon by all parties to the arrangement and DFO pre-season. Individual commercial licence holders or groups of commercial licence holders will not be permitted to make their own allocation transfer arrangements unless these are part of a pre-season plan approved by the Department. Proposed transfers arrangements from commercial fisheries and/or shareholders (whether individual or fleet-wide) will require Area Harvest Committee involvement and support in their development.
- DFO will not be responsible for leading or facilitating the negotiation of transfer arrangements between parties.

- 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).
- If after spawning escapement objectives are met, and despite best efforts, it becomes apparent that an existing commercial shareholder 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 already holding a clearly defined percentage share of the Canadian commercial total allowable catch, on a case by case basis.
- Transfers of commercial salmon allocations must consider shares of all stocks that will be harvested in the recipient area.
    - Allocations transferred inland will be reduced proportionately to reflect the reduced stock composition in the more terminal harvest location (e.g. Area F troll licence shares transferred to the Kamloops Lake inland demo fishery will be only for the proportion of Thompson Chinook encountered in the marine commercial troll fishery).
    - For co-migrating 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.
    - For co-migrating stocks or management units of concern where exploitation rate caps or some other limit on mortalities have been defined (e.g. Interior Fraser River coho), the parties to the transfer arrangements are responsible for demonstrating that the transfer arrangement will be neutral or of benefit to the stock or management unit of concern (i.e. same or lower impact in the new fishing area).
    - Priority will be given to those proposals that allow shares to be harvested using fishing techniques that are more selective than the original technique, and / or allow harvesting in fishing areas that avoid stocks or management units of concern.
- 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 participants to ensure that there is reliable accounting for both retained and released fish and that harvests do not exceed defined shares. Incremental monitoring costs will not be assumed by DFO, and will need to be covered by parties to the transfer arrangement.
- Proposals for transfer arrangement must include contingencies for situations where shares are exceeded. Parties not complying with agreed-to arrangements 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. Unless otherwise communicated by DFO at the time of the decision, all future transfers must undergo another process of review and approval from DFO.

7.16 North Coast Net - Net Fishing Times

All north and central coast net fisheries, with only a few exceptions, will normally be restricted to daylight hours (no longer than 16 hours per day, progressively shorter as the daylight hours get shorter).

The local manager may vary these net fishing times depending on circumstances such as by-catch concerns, strong returns of target species, abundance of prohibited species, weather, or other factors. Times will be specified in fishery notices released prior to each fishery.

All dates are anticipatory only. Subareas open and hours of fishing will be announced in fishery notices prior to openings.

7.17 Seine Fisheries

All seine fisheries unless otherwise authorized will be conducted with mandatory brailing and sorting of the catch. Specific restrictions such as the specifications of revival tanks are found in the Conditions of Licence. Fishers are urged to read these conditions carefully to ensure that their vessel and fishing techniques are in accordance with their licence. When moving between areas with different non-retention and non-possession rules, seiners must offload prior to fishing in the area they are moving to.

7.18 Anticipated Net Opening Dates

Area 1

No gill net or seine fisheries will be directed on passing stocks.

Odd year return pinks are very weak. Therefore terminal net openings are expected in 2014.

Mid-September to October: Possible terminal fisheries directed on identified surpluses of local chum stocks.

Area 2E & 2W

No gill net or seine fisheries will be directed on passing stocks.

Odd year return pinks are very weak. Therefore, terminal net openings are expected in 2014.

Mid-September to October: Possible terminal fisheries directed on identified surpluses of local chum stocks.

Area 3

June 10: First anticipated gill net fishery, but may vary depending on run size. Maximum mesh size 137 mm (5.39 in). This fishery will assess the returning Nass River sockeye run.

July 7: First anticipated seine fishery opening will be determined in-season based on sockeye and pink abundance. Minimum bunt mesh size 70 mm (2.76 in). Earlier fishery possible if stocks abundant.

Area 4 & 5
Openings will be based on Skeena salmon returns and the target annual exploitation rate and will be similar to previous years subject to ongoing discussions with First Nations and commercial fishing interests Targeted gill net fisheries for Skeena chinook are planned with advisors from the Area C Harvest committee. Openings for Chinook in 2014 will occur between the second week of June to July 4th.

Area 6
Gill net openings will be dependent upon in-season assessments of hatchery chum returns to the Kitimat River.

July 14: First anticipated seine opening; areas open will be determined in-season. Minimum bunt mesh size 70 mm. Catch rates in this fishery will be used to indicate returning abundances of pink salmon to Area 6.

Area 7
Mid to late August: consideration for net openings in: 7-17 (McLoughlin Bay hatchery chum), Gear types will alternate each week; Subarea 7-5 terminal chum harvest on Kitasoo Creek Hatchery stocks with gill nets first and seines second; net opening in Spiller Channel to harvest Neekas Creek chum.

Area 8
June 02: First anticipated gill net opening in the Bella Coola gill net area. This will be a directed chinook fishery. Minimum mesh size 203 mm (7.99 in).

June 30: Anticipated chum gill net opening in the Bella Coola gill net area and Fisher Channel/Fitz Hugh Sound. Minimum mesh size 158 mm (6.22 in).

Usually, seine fishing opens mid-July in Fisher Channel/Fitz Hugh Sound. However, should commercial net fishing continue past the two anticipated chum assessment fisheries, the seine fishery could be delayed by up to three weeks to address concerns for Atnarko pink. Minimum bunt mesh size 70 mm (2.76 in).

July 11 to August 15: Weedlines are in effect in upper 8-5 (Fisher Ch) and 8-8 (Upper Dean Ch).

Area 9
No anticipated openings.

Area 10

No anticipated openings, but dependent on in-season assessment.

7.19 Northern Troll

All dates are anticipatory only. Subareas open and hours of fishing will be announced in fishery notices prior to openings.

Chinook:
Please note: all chinook must be validated within 5 days of a chinook closure.

The troll fishery is limited in 2014 to 221,300 chinook. This equates to 922 Chinook for each of the approximately 240Area F trollers based on an ITQ of 1/240 (i.e. 0.417%). The number of Area F troll licences may be updated prior to licence issuance based on the ongoing troll licence retirement program. The troll fishery will be managed to a maximum 3.2% harvest rate on WCVI Chinook.

The chinook fishery will be conducted under the ITQ rules. The fishery will open between June 15th and June 21stdepending on the in-season assessment of early Fraser 5-2 chinook and consultations with the Area F Harvest Committee. The fishery will close if the 3.2% harvest rate is reached as determined in-season by the relationship between effort and harvest rate developed from historical DNA catch information. The harvest rate will be validated by CWT and DNA analysis of catch post-season. The fishery will be further constrained by an August closure to protect weak stocks of WCVI chinook as this period is known to have high proportions of WCVI in the catch. The chinook fishery is expected to re-open in September, provided the estimated harvest rate of WCVI remains below the 3.2% harvest rate, and close on September 30th.

The ceiling on the number of uncaught chinook that can be held on any single licence is the equivalent to the sum of two ITQ licences which equates to 1,844 chinook in 2014. This is intended to prevent speculation and large scale amassing of quota.

All Areas and Subareas mentioned are subject to change in-season. Below is a list of areas and Subareas expected to open (These dates are subject to on-going consultations.) (Pink salmon will open in conjunction with chinook.):

Subareas 1-1, 101-1, 101-2, 101-4, 101-5, 101-8 to 101-10.

Those portions of Subareas 1-2, 1-3 and 1-7 that are outside and seaward of 1 nautical mile from the Graham Island and Langara Island shorelines (defined at the mean high water mark).

Subarea 1-5, except that portion inside or shoreward of a line commencing at Wiah Point then following the Subarea boundary east for one nautical mile, then running parallel to the mean high water mark of Graham Island at a distance of one nautical mile to a point true north of Skonun point, then running true south to Skonun Point.

Those portions of Subareas 101-3, 101-6 and 101-7 except those portions inside or shoreward of a line commencing at 54°14.976' N and 133°04.386' W then true west for one nautical mile then north and east running parallel to the mean high water mark of the shorelines of Langara Island and Graham Island at a distance of one nautical mile.

That portion of Subarea 2-88 north of 53 degrees 37 minutes north latitude.

Subareas 2-92, 2-97, 2-98.

That portion of Subarea 142-2 north of 53 degrees 37- minutes north latitude.

The Frederick Island Rockfish Conservation Area remains closed to hook and line fisheries (see below for description).

Those portions of Subareas 1-1, 101-1 and 142-2 that lies outside a line that: begins at 53 deg 56.246 min N and 133 deg 17.500 min W then true East to 53 deg 56. 246 min N and 133 deg 11.862 min W (Hope Point) then to 53 deg 57.144 min N and 133 deg 07.938 min W (Graham Island) then southerly following the shoreline of Graham Island to the intersection with 53 deg 47.0 min north latitude, then to 53 deg 47.000 min N and 133 deg 10.00 min W thence to the beginning point.

The above boundaries retains the 1.0 nautical mile ribbon boundary in Areas 1 and 101 following the Graham Island and Langara Island shorelines initiating at Langara Island and terminating at Skonun Point. There will be no commercial trolling shoreward of this ribbon boundary.

Sockeye:
Retention of sockeye salmon will be permitted as a by-catch.

July 1 – AB Line fishery. Open to retention of sockeye as by-catch in the targeted coho fishery within subareas 101-4, 101-5, 101-8, 101-9 and those portions of Subarea 101-3 north of 54 degrees 24 minutes north latitude and east of 133 degrees west longitude.

July 15 – Open to retention of sockeye as by-catch in the targeted coho fishery within:

The retention area is similar to the coho fishery area listed below except sockeye is closed west of Haida Gwaii such as those portions of Subareas 101-3 and 101-6, west of 133 degrees west longitude to avoid Fraser Sockeye migrating south.

Pink:
Retention of pink salmon will be permitted in conjunction with troll openings targeting other species as follows:
June 21 - –Targeted Chinook ITQ opening.

July 15 – Targeted coho fishery opening. See coho section for details.
If abundances permit, a troll pink fishery in Area 3 could be conducted.

Coho:

July 1 - Open to coho in Subareas 101-3 north of 54 degrees 24 minutes north latitude, 101-4, 101-5, 101-8 and 101-9.

July 15 - Coho open in the following areas. Refer to the Fishery Notice issued prior to the opening in case there are any in-season changes.

- Subareas 101-2, 101-4, 101-5, 101-8 to 101-10.
- Subareas 1-2, 1-3 and 1-7 except those portions inside or shoreward of a line running parallel to the mean high water mark of Graham Island and Langara Island at a distance of one nautical mile.
- Subarea 1-5, except that portion inside or shoreward of a line commencing at Wiah Point then following the Subarea boundary east for one nautical mile, then running parallel to the mean high water mark of Graham Island at a distance of one nautical mile to a point true north of Skonun point, then running true south to Skonun Point.
- Subareas 101-3, 101-6 and 101-7, except those portions inside or shoreward of a line commencing at 54°14.976' N and 133°04.386' W then true west for one nautical mile then north and east running parallel to the mean high water mark of the shorelines of Langara Island and Graham Island at a distance of one nautical mile.
- Subareas 1-1, 101-1 and 142-2 except those portions that lie inside a line that begins at 53 deg 56.246 min N and 133 deg 17.500 min W then true east to 53 deg 56.246 min N and 133 deg 11.862 min W (Hope Point) then to 53 deg 57.144 min N and 133 deg 07.938 min W (Graham Island) then southerly following the shoreline of Graham Island to the intersection with 53 deg 47 min N then to 53 deg 47 min N and then to the beginning point.
- That portion of Subarea 142-2 north of the parallel passing through 53°37' N, except that portion set out in Bullet 5 above.
- That portion of Subarea 2-88 north of 53 degrees 37 minutes north latitude.
- Subareas 2-92, 2-97, 2-98.
- That portion of Subarea 142-2 north of 53 degrees 37 minutes north latitude
- Subareas 2-3, 2-4 and 102.
- Those portions of Subareas 103 and 104 north of 54 degrees 12 minutes north latitude and west of 131 degrees 10 minutes west longitude.
- Subarea 105-1.
- Subarea 105-2, except that portion inside or shoreward of a line that begins at 53 deg 27.900 min N and 130 deg 39.800 min W then to 53 deg 27.985 min N and 130 deg 35.246 min W then to 53 deg 23.700 min N and 130 deg 22.700 min W then to 53 deg 18.700 min N and 130 deg 21.500 min W then to 53 deg 24.300 min N and 130 deg 38.000 min W and then to the beginning point.
- Subarea 105-2, except that portion inside or shoreward of a line that begins at 53 deg 15.900 min N and 130 deg 22.200 min W then to 53 deg 16.100 min N and 130 deg 16.700 min W then to 53 deg 10.000 min N and 130 deg 06.200 min W then to 53 deg 10.000 min N and 130 deg 21.300 min W and then to the beginning point.
- Trolling is closed in all rockfish conservation areas listed in Appendix 3.

Area 3 and Central Coast troll openings could be provided based on coho abundance determined in-season.

Retention of freezer troll salmon heads

Chinook and coho
In accordance with the conditions of the Area F troll license, all vessels are required to bring all chinook and coho heads (or snouts if they are cut properly to include any CWT) to the dock for submission, unless the license is listed in a fisheries notice listing the Area F troll licenses that are exempted from retaining salmon heads during the 2014 fishing season. This fisheries notice is expected to be released prior to the opening of the fishery.

Poor compliance and head retention practices in past fishing seasons has led to the requirement that 50% of the Area F troll fleet retain salmon heads. This head retention rate was required to ensure that Canada met its obligation to sample a minimum of 20% of the troll catch for the presence of CWT's as outlined in the Pacific Salmon Treaty.

In recent years, salmon head recovery by the Area F troll fleet has improved allowing for a reduction in the number for vessels that retain salmon heads. In 2013, approximately two thirds (66%) of the Area F troll fleet was exempted from bringing in chinook and coho heads.

For 2014, the exemption rate will be between 67% and 75%, both because improved compliance continued in 2013. As in past seasons, licences that were insufficiently diligent in carrying out their obligation to bring in all chinook and coho heads in a satisfactory condition will not be exempted in 2014.

Chum
Chum retention will be permitted in portions of Subareas 101-4 and 101-8 during the month of July in order to assess the proportion of US hatchery origin chum migrating through northern Dixon Entrance. Alaskan hatchery facilities mark enhanced chum stocks using thermal marks on otoliths. Therefore, **whole-head retention** of all retained chum will be mandatory for post-season otolith thermal mark analysis. Additionally, chum heads will need to be labelled and stored separately from coho and chinook heads.

8 APPENDIX 8: COMMERCIAL SALMON LICENCE AREAS

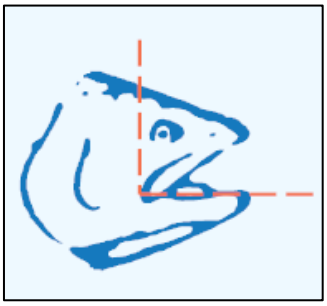
Pacific Salmon Fishing Area	Gear	Corresponding Pacific Fisheries Management Areas (PFMA)
Salmon Area A	Seine	Areas 1 to 10, Subarea 101-7
Salmon Area B	Seine	Areas 11 to 29 and 121
Salmon Area C	Gill net	Areas 1 to 10, Subarea 101-7
Salmon Area D	Gill net	Areas 11 to 15 and 23 – 27
Salmon Area E	Gill 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 North Coast PFMA's please see Figure 1-1 of this IFMP

9 APPENDIX 9: CHINOOK AND COHO HEAD RETENTION, STORAGE AND DELIVERY REQUIREMENTS.

These requirements apply to all Area F troll licences, except those whose licence holder has received a letter from the DFO North Coast Area Chief of Resource Management exempting them from the head retention requirements in Part 1, Section 3 of their conditions of licence.

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 centimeter 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.



Head Storage: Heads must be stored using special purpose bags and labels available free of charge from the Department. These bags and labels 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).

Finally, heads must be kept frozen until delivery.

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 VRN., 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 JO Thomas & Assoc. for sampling and collection details: phone toll-free 1-800-663-3344. Please call one day in advance of offload.

For complete 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*
Trip ID #:	***FOS-12345***					Rel.	*0*	*0*	*0*	*0*			*1*		*weye, 6 unknown*	*0*
Comments:															Confirmation #:	***FOS-12346***
16	*Jul*	*5*	*1*	*10*	F or (I)	Kept	*12*	*0*						*0*	*0*	*0*
Trip ID #:	***FOS-12345***					Rel.	*0*	*0*					*2*	*0*	*2 Chilipepper, 2 unknown rockfish*	*0*
Comments:															Confirmation #:	***FOS-12349***
18	*Jul*	*5*	*1*	*6*										*0*	*0*	*0*
Trip ID #:	***FOS-12398***								*0*	*0*	*0*	*1*	*0*	*0*	*0*	*1L*
Comments:	***1 Coho dead, 5 rele***														Confirmation #:	***FOS-12402***
18	*Jul*	*5*	*3*	*5½*	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*	*0*	*0*	***4 D, 1 L, 1 salmon shark***	No
Comments:		***1 harbour seal released, steelhead revived in tank, then released in***											***irmation #:*** [6]		***FOS-12358***	
19	*Aug*	*4*	*4-5*	*9*	*4*	Kept	*53*	*0*		*0*		*0*	*0*	*0*	*0*	Yes
Trip ID #: [7]		***FOS-12403***				Rel.	*0*	*2*		*1*		*12*	*0*	*0*	*0*	No
Comments:		***Both coho rel'd in g***											DCR Confirmation #: [6]		***FOS-12428***	

Offload Catch Records

Dates Fished First date Day	First date Month	Last date Day	Last date Month	# Days fished	off Day	Sockeye	Coho	Pink	Chum	Chinook	(Other)	Complete if catch pooled with that of another vessel: Received from:	Offloaded to:	Vessel
							☐ Pieces ☒ Lbs ☐ Kgs		☐ Pieces ☐ Lbs ☐ Kgs	☐ Pieces ☐ Lbs ☐ Kgs	☐ Pcs ☒ Lbs ☐ Kgs			
14	*Aug*	*15*	*Aug*	*2*	*15*	*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*	*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															Confirmation #:	FOS-12346
5	Aug	4	4-12, 4-15	4	3	Kept	73	0	245	4	0				X	0	Yes
Trip ID #:[7]	FOS-12480					Rel.	0	2	0	0					0	2M, 1 salmon shark	No
Comments:	Both coho put in rev. tank, one died, one released in															Confirmation #:	FOS-12367
5	Aug	5	5-1	2	3	Kept	88						2	0	X	0	Yes
Trip ID #:[7]	FOS-12480					Rel.	0					1	0	0	0	11 M, 2 R	No
Comments:	Steelhea											e around 11AM.				Confirmation #:	FOS-12372
8	Aug	29	29-13	6		t						0	0	0	X	0	Yes
Trip ID #:[7]	FOS-12773						0	0	0	3	1	0	0	0	0	0	No
Comments:	4 coho pu								n died, 2 released in good condition							Confirmation #:	FOS-12502
9	Aug	29	29-13	6		t	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) consists of major hatchery and spawning channel facilities that 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 2014 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 included 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 June 1, 2014.

Refer to the link below for information regarding 2014 brood proposed targets:
http://www.pac.dfo-mpo.gc.ca/sep-pmvs/ifmp-pgip-eng.html

12 APPENDIX 12: GLOSSARY

A more comprehensive glossary is available online at:

http://www.pac.dfo-mpo.gc.ca/fm-gp/species-especes/salmon-saumon/gloss-eng.htm

AABM	Aggregate Abundance Based Management
AAROM	Aboriginal Aquatic Resource and Oceans Management
AHC	Area Harvest Committee
AFS	Aboriginal Fisheries Strategy
ATP	Allocation Transfer Program
CCTAC	Canadian Commercial Total Allowable Catch
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
CSAP	The Centre for Scientific Advice Pacific
CSAS	The Canadian Science Advisory Secretariat
CWT	Coded wire tag
ER	Exploitation Rate
ESSR	Excess Salmon to Spawning Requirements
FNFC	First Nations Fishery Council
FRP	Fraser River Panel
FSC	Food, social and ceremonial
IHPC	Integrated Harvest Planning Committee
ISBM	Individual Stock Based Management
ITQ	Individual Transfer Quota
LAER	Low Abundance Exploitation Rate
LGS	Lower Georgia Strait
LRP	Lower Reference Point
MCC	Marine Conservation Caucus
MPA	Marine Protected Area
MSY	Maximum Sustainable Yield
MVI	Mid Vancouver Island
NOLS	National Online Licensing System
PICFI	Pacific Integrated Commercial Fisheries Initiative
PFMA	Pacific Fisheries Management Area
PSARC	Pacific Scientific Advice Review Committee
PSC	Pacific Salmon Commission
PST	Pacific Salmon Treaty
RCA	Rockfish Conservation Area
SARA	Species at Risk Act
SEG	Sustainable Escapement Goal
SEP	Salmonid Enhancement Program
SFAB	Sport Fishing Advisory Board

SHMF	Selective Hatchery Mark Fishery
TAC	Total allowable catch
TAM	Total Allowable Mortality
WCVI	West Coast Vancouver Island
WSP	Wild Salmon Policy (Canada's Policy for Conservation of Wild Pacific Salmon)

APPENDIX 13: NASS CHUM DRAFT REBUILDING PLAN

Current Management Actions

The objective of the Area 3 chum rebuilding plan is to: "protect Area 3 wild chum and at the same time provide opportunities to retain enhanced US chum in places and times where they are most abundant".

The Canadian Area 3 fishery is currently managed to significantly reduce Area 3 chum Canadian exploitation rates from historical levels, as a measure to rebuild Nass chum stocks. The harvest reductions have been achieved, with current Canadian exploitation rates averaging 7% down from 28% average 1982 to 1999 (Figure 1). The rebuilding plan for the immediate future is to keep the Canadian average exploitation rates below 10%.

Management measures that reduce Area 3 pink and sockeye fishery impacts on Area 3 wild chum include:

- Non retention of chum for most net fisheries with exceptions in the early season in areas where the otolith analysis confirmed US hatchery chum are a very high percentage of the harvest.

- Gill nets will be closed from July 12 to July 24 in all of Area 3. (Kwinageese sockeye closure). This proves a 14 day window of no gillnet harvests of Canadian wild chum.

- Closed areas where chum are relatively abundant compared to the target species

- Brailing and sorting will be in place for the seine fishery.

- Gill nets have a 137 mm (5.39 in) maximum mesh restriction. This restriction is in place so that sockeye is targeted selectively and larger non-target species such as chum and chinook are impacted to a lesser degree.

Background

General background information on Nass chum was provided in Peacock and Spilsted (2010). The Fishery Operational Guidelines associated with the Nisga'a Treaty set minimum and target escapement goals for chum and other species that are the limit and target reference points used to implement the Nisga'a Treaty. DFO uses the Management Escapement Goals (MEG) as both the limit and target reference points.

Details of the 2012 management approach for chum are included in DFO fisheries management post-season reports. Limited chum retention fisheries were provided that targeted US hatchery chum returns. Otolith samples were taken to refine our knowledge of the times and areas where the US hatchery stocks were most abundant relative to wild stocks. Thermal marks from US hatcheries were found on 91% of the chum sampled from chum retention fisheries in 2012. This information was used to refine the chum retention opportunities provided in 2013. Results are not yet available for the 2013 season.

Stock Status to 2013

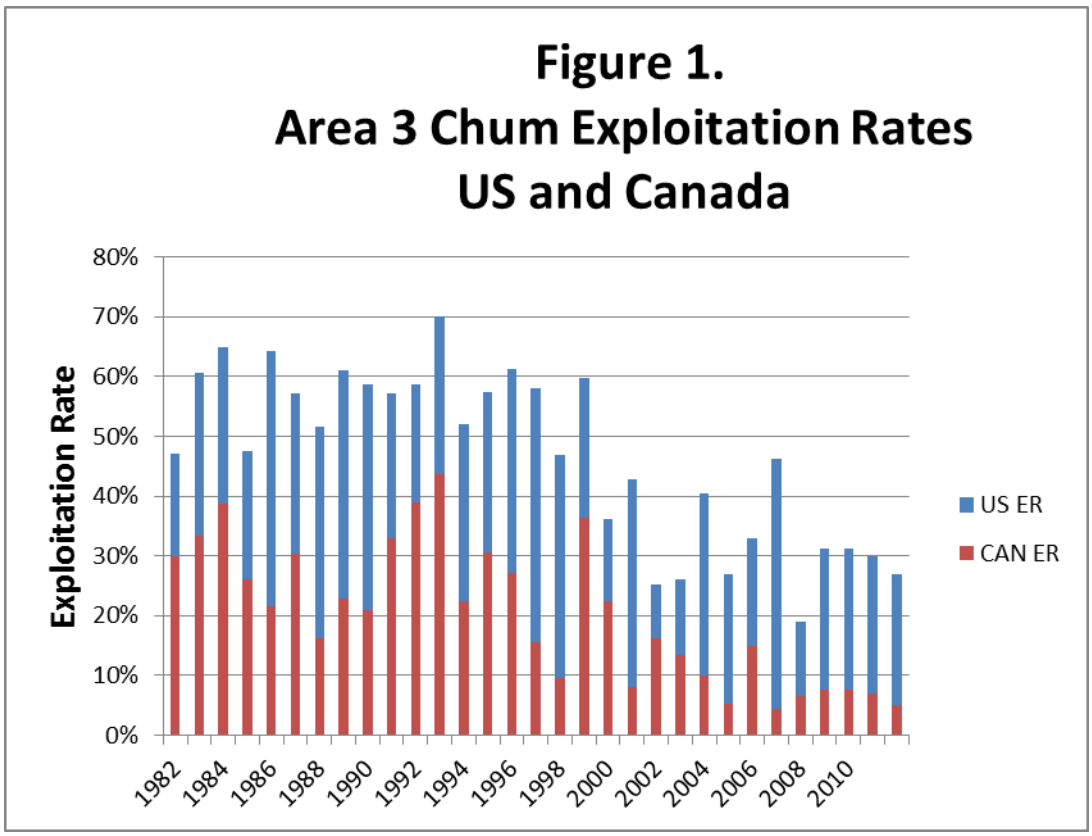
Nisga'a Joint Technical Committee and recent DFO assessments indicate recent aggregate status in the yellow zone since 2007. The Portland Canal – Observatory CU is severely depressed and in the red zone. Chum stocks are not rebuilding even though exploitation rates have been significantly reduced since 2000. This appears to be the result of reduced productivity over the same period.

The management escapement goal based on stream targets is higher than the spawners at maximum sustained yield (Smsy) estimate. In Area 3 there is concern that the stock-recruit (S-R) metrics are biased by a long history of high exploitation rates (ER), limiting the stock-recruit data range in the more recent time series. This will tend to underestimate Smsy, and the associated benchmarks will also be too low.

The management intent is to keep the Nass chum ER's low through a period of "normal" productivity to evaluate the productive potential.

Assessment of Fishery Impacts

English et al 2012 provided Area 3 chum exploitation rate time series for US and Canadian fisheries up to 2010 (Figure 1). The estimates for 2011 and 2012 are preliminary estimates from the Nisga'a Joint Technical Committee. The recent 4 year cycle average Canadian ER is 7% and the last decade average is 8%. This provides for total ER in the 20% to 30% range down from the 57% average from 1982 to 1999. The current ER is well below the level that would be expected to provide for rapid stock increases if "normal" productivity returns (given the Umsy estimate of .61). Keep in mind there is concern that the S-R metrics are biased by long history of high ER, limiting S/-R data range in the more recent time series. This will tend to over-estimate exploitation rates at maximum sustained yield (Umsy).



Nass Chum Rebuilding Plan Activities

Key Activities	**Status**
Complete reconstructed time series of escapement, catch and run size for Nass chum.	Completed as described in English et al 2012 and updated in English 2013.
Develop chum harvest rate assessment models for Skeena chum.	Nisga'a Joint Technical Committee has over the past 10 years developed methods to estimate Nass chum escapement and catch. This technical background formed the basis for, and the technical committee participated in, the assessment model development revised and described in English 2013, and English et al 2012.
Analyse stock recruit metrics and indicated benchmarks and status interpretations.	Completed initial assessments by the Nisga'a Joint Technical Committee (for Nass area and CU's) and by DFO (by Stat area and CU) in September 2013. Further review will be provided through the Nisga'a Joint Technical

	Committee spring 2014 meeting.
Complete 2012 and 2013 Northern Boundary Sockeye Reconstruction. Required to generate the weekly harvest rate estimates for Nass sockeye model. The weekly sockeye HR's are used in the Nass chum HR assessment model.	2012 reconstruction completed in January 2014 by the Pacific Salmon Commission's Northern Boundary Technical Committee. The Nisga'a Joint Technical Committee is expected to review and update the sockeye weekly harvest rate assessment during their spring 2014 meeting.
Review 2014 Nass chum escapement enumeration plans.	Enumerations plans reviewed each year through the Nisga'a Joint Technical committee. In addition, Nisga'a has submitted a northern fund proposal to refine and standardise Nass chum escapement estimates.
Collect otoliths from Area 3 fisheries to determine US hatchery contributions in both retention and non-retention areas	2011 and 2012 collected and analysed. 2013 samples collected a submitted for analysis. 2014 otolith collection and analysis program funded.
Evaluate enhancement and habitat restoration projects that would aid in Area 3 chum rebuilding.	Kincolith side channel restoration work initiated in 2013 and planned for 2014 and 2015. Kitsault restoration activities that should be considered are presented in Gaboury and Bocking 2007. Monitoring of the progress and contribution of these restoration activities is an important component of any rebuilding plan.
Continue to work through the Pacific Salmon Commission's Northern Panel to discuss chum management plans in the northern boundary area.	PSC Northern Panel meetings are scheduled for January and February each year.
Review and update Nass chum harvest rate models, both sockeye and pink effort based. Include a sensitivity analysis of the model Area 3 chum run timing assumptions.	Requires 2013 sockeye reconstructions to be completed. Technical work scheduled for spring 2014 Nisga'a Joint Technical Committee.
The appropriateness of the ER objective should be reviewed each year taking into account the latest stock assessment information.	Review Nass chum assessments, status and the rebuilding plan with FN technical committees and with the Nisga'a JFMC, the IHPC and other interested parties.
Develop 2014 IFMP Nass chum fishing plan in cooperation with FN technical committees, the Nisga'a JFMC, the IHPC and other interested parties.	Nisga'a and IHPC meetings scheduled through to the spring of 2014.

References

English, K.K., T. Mochizuki and D, Robichaud. 2012. Review of North and Central Coast Salmon Indicator Streams and Estimating Escapement, Catch and Run Size for each Salmon Conservation Unit. Report for Pacific Salmon Foundation and Fisheries and Oceans, Canada. 78 p.

English, K.K. 2013. Extended Time-series of Catch and Escapement Estimates for Skeena Sockeye, Pink, Chum, Coho and Chinook Salmon Conservation Units. Report for Pacific Salmon Foundation. 19 p.

Gaboury, Marc and Robert Bocking. 2007. Assessment of Enhancement Opportunities for Wild Chum Stocks in Canadian Statistical Area 3. Prepared by LGL Limited, for the Pacific Salmon Commission Northern Fund.

Peacock. D., and B. Spilsted. 2010. Nass River Chum (Oncorhynchus keta) stock status. Canadian Science Advisory Secretariat Draft Report 2010. 58p. Available from authors.

Appendix 14: Skeena Chum Draft Rebuilding Plan

Current Management Actions

The objective of the Skeena chum rebuilding plan is to: "rebuild Skeena chum and improve Skeena chum stock status".

The Canadian Area 4 fishery is currently managed to significantly reduce Skeena chum Canadian exploitation rates from historical levels, as a measure to rebuild Skeena chum stocks. The harvest reductions have been achieved, with recent Canadian exploitation rates averaging well below 10% (Figure 1). The rebuilding plan for the immediate future is to keep the Canadian average exploitation rates below 10%.

Management measures that reduce Area 4 sockeye and pink fishery impacts on Skeena wild chum include:

- Non retention of chum in all Area 4 commercial fisheries.
- Brailing and sorting will be in place for the seine fishery.
- Gill nets have a 137 mm (5.39 in) maximum mesh restriction. This restriction is in place so that sockeye is targeted selectively and larger non-target species such as chum and chinook are impacted to a lesser degree.

Background

Background information on Skeena chum is provided in Peacock and Spilsted (2010). A recent paper by Price et al (2013) evaluates the historical abundance of Skeena chum.

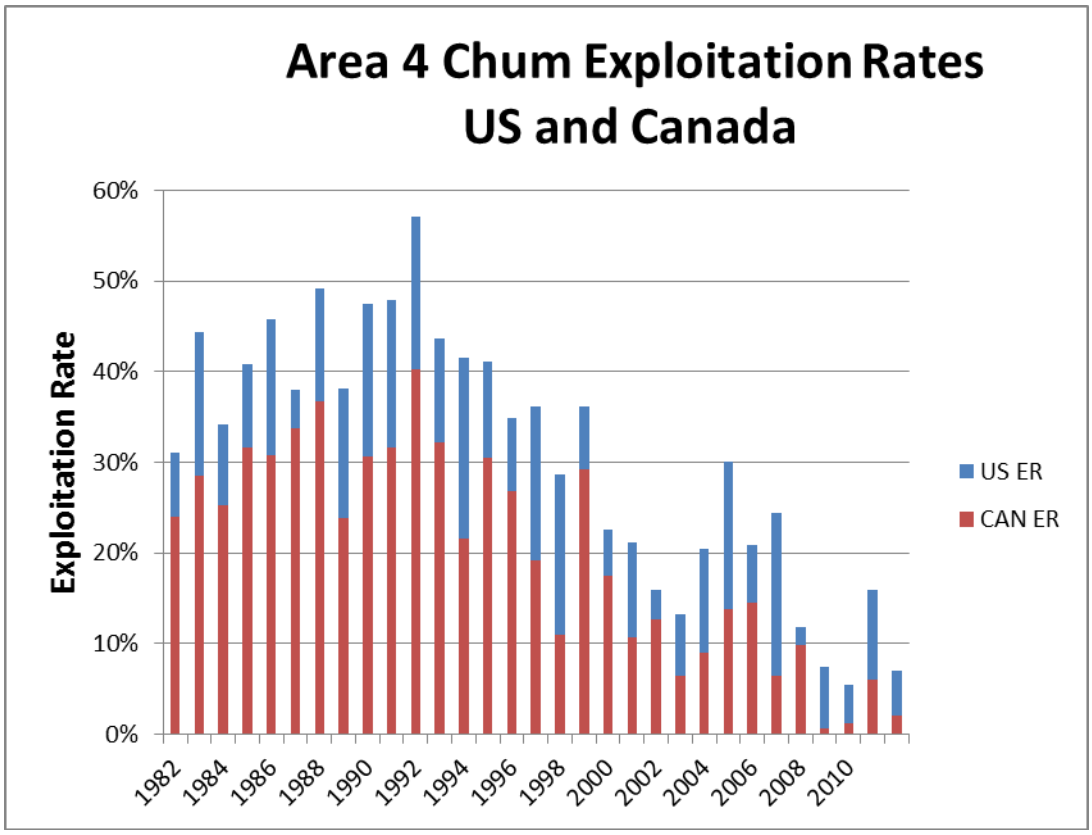
Status

Skeena chum assessments have recently been completed by Korman and English (2013). The key conclusions are that Skeena chum are severely depressed, and are not rebuilding even though recent exploitation rates are well below Umsy values, likely due to reduced productivity in the last decade. DFO supports this assessment and has implemented sustained harvest reductions as a rebuilding plan.

Fishery Impacts

English et al 2012 provided Area 4 chum exploitation rate time series for US and Canadian fisheries up to 2010 (Figure 1). The estimates for 2011 and 2012 are preliminary estimates from the DFO. The recent 4 year cycle average Canadian ER is 2% and the last decade average is 7%. This provides for total ER averaging 16% over the last decade, down from the 42% average from 1982 to 1999. The current ER is well below the level that would be expected to provide for rapid stock increases if "normal"

productivity returns (given the Umsy estimate of 0.44). Keep in mind there is concern that the S-R metrics are biased by long history of high ER, limiting S-R data range in the more recent time series. This will tend to over-estimate Umsy.



Skeena Chum Rebuilding Plan Activities

Key Activities	**Status**
Complete reconstructed time series of escapement, catch and run size for Skeena chum.	Completed as described in English et al 2012, and updated English 2013.
Develop chum harvest rate assessment models for Skeena chum.	First versions completed as described in English 2013 and English et al 2012.
Analyse stock recruit metrics and indicated benchmarks and status interpretations.	Completed assessments by Korman and English (2013).

Continue to review potential enhancement and habitat measures to aid rebuilding.	A northern fund project “Kleanza Creek spawning weir accepted through the first round of reviews. (update).
Complete 2012 Northern Boundary Sockeye Reconstruction. The reconstruction is required to generate the weekly harvest rate estimates for Skeena sockeye model. The weekly sockeye HR's are used in the Skeena chum HR assessment model.	Completed Jan 2014, Northern Boundary Technical Committee.
Complete 2013 Northern Boundary Sockeye Reconstruction. The reconstruction is required to generate the weekly harvest rate estimates for Skeena sockeye model. The weekly sockeye HR's are used in the Skeena chum HR assessment model.	Scheduled to be completed Jan 2015, Northern Boundary Technical Committee.
Evaluate Ecstall chum spawner enumeration methods.	First year completed 2013 by NCSFNSS. Northern Fund has approved the project for 2014.
Review and update Skeena chum harvest rate model, and evaluate utility of using the pink effort/HR model applied to chum as a comparison.	Requires 2012 (completed) and 2013 sockeye reconstructions to be completed. Work to be scheduled.
Review Skeena chum assessments and status with FN technical committees and through the IHPC and other interested parties.	Chum update at post-season review, and discussions will take place at the technical committees, and IHPC meetings.
Review 2014 Skeena chum escapement enumeration plans.	Enumerations plans reviewed each year through the Skeena FN technical committees.
Develop 2014 IFMP chum section.	Developed and reviewed annually through the IHPC and through discussions with FN.

References

English, K.K., T. Mochizuki and D, Robichaud. 2012. Review of North and Central Coast Salmon Indicator Streams and Estimating Escapement, Catch and Run Size for each Salmon Conservation Unit. Report for Pacific Salmon Foundation and Fisheries and Oceans, Canada. 78 p.

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Korman, J, and K. English. 2013. Benchmark Analysis for Pacific Salmon Conservation Units in the Skeena Watershed. Submitted to the Pacific Salmon Foundation.

Peacock. D., and B. Spilsted. 2010. Skeena River Chum (Oncorhynchus keta) stock status. Canadian Science Advisory Secretariat Draft Report 2010/059.

Price, M.H.H.., Gayeski, N., and J. A. Stanford. 2013. Abundance of Skeena River chum salmon during the early rise of commercial fishing. Transactions of the American Fisheries Society 142:4, 989-1004.