

PACIFIC REGION
FINAL

INTEGRATED FISHERIES MANAGEMENT PLAN

JUNE 1, 2019 - MAY 31, 2020

SALMON
NORTHERN BC



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.

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DEPARTMENT CONTACTS

A more comprehensive list of contacts can be found online at:

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

24 Hour Recorded Information (Commercial)

Vancouver (604) 666-2828

Toll Free 1-888-431-3474

Pacific Salmon Commission (PSC) Office (604) 684-8081

PSC Test Fisheries (Recorded, In-Season Information) (604) 666-8200

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

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

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Chief, Conservation and Protection

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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

Twitter:

DFO Pacific: [@DFO_Pacific](#)

En Français: [@MPO_Pacifique](#)

ACTS, ORDERS, AND REGULATIONS

<http://www.dfo-mpo.gc.ca/acts-loi-eng.htm>

Atlantic Fisheries Restructuring Act, Canada Shipping Act, Coastal Fisheries Protection Act, Department of Fisheries and Oceans Act, Financial Administration Act, , Fisheries Act, Fisheries Development Act, Fisheries Improvements Loan Act, Fishing and Recreational Harbours Act, Freshwater Fish Marketing Act, Great Lakes Fisheries Convention Act, Oceans Act, Species at Risk 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/index-eng.html>

General information, Area information, Latest news, Current topics

POLICIES, REPORTS AND AGREEMENTS

<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;

Areas of Interest; Canada's Ocean Strategy; Oceans Act

PACIFIC REGION FISHERIES MANAGEMENT

MAIN PAGE

<http://www.dfo-mpo.gc.ca/fm-gp/index-eng.htm>

Commercial Fisheries, Aboriginal Fisheries, Recreational Fisheries, Maps, Notices and Plans, International Management, Enforcement

ABORIGINAL FISHERIES STRATEGY

<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.html>

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.dfo-mpo.gc.ca/fm-gp/peches-fisheries/comm/index-eng.htm>

Links to Groundfish, Herring, Salmon, Shellfish and New and Emerging Fisheries homepages; Selective Fishing, Test Fishing Information, Fishing Areas, Canadian Tide Tables, Fishery Management Plans, Commercial Fishery Notices (openings and closures)

INITIATIVE TO UPDATE THE COMMERCIAL SALMON ALLOCATION FRAMEWORK

<http://www.pac.dfo-mpo.gc.ca/consultation/smon/saf-crrs/index-eng.html>

Links to the Departments' consultation website which provides an overview of the process to update the Commercial Salmon Allocation Framework (CSAF), including links to summary reports and submissions with recommendations.

FISHERIES NOTICES

<http://www-ops2.pac.dfo-mpo.gc.ca/fns-sap/index-eng.cfm?>

Want to receive fishery notices by e-mail? If you are a recreational sport fisher, 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.dfo-mpo.gc.ca/fm-gp/peches-fisheries/ifmp-gmp/index-eng.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.pac.dfo-mpo.gc.ca/fm-gp/species-especes/salmon-saumon/research-recherche/testfishery-pechedessai-eng.html>

Definition, description, location and target stocks

LICENCING

<http://www.pac.dfo-mpo.gc.ca/fm-gp/licence-permis/index-eng.html>

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)

<https://fishing-peche.dfo-mpo.gc.ca>

E-mail: fishing-peche@dfo-mpo.gc.ca

(Please include your name and the DFO Region in which you are located.)

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.html>

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

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GLOSSARY AND LIST OF ACRONYMS

A comprehensive glossary is available online at:

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

LIST OF ACRONYMS USED IN THIS PLAN:

| ACRONYM | PHRASE |
|-----------------|---|
| 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 |
| CEDP | Community Economic Development Program |
| COHO ABM | Coho Abundance-Based Management |
| COSEWIC | Committee for the Status of Endangered Wildlife in Canada |
| CPUE | Catch Per Unit Effort |
| CSAP | The Centre for Scientific Advice Pacific |
| CSAS | The Canadian Science Advisory Secretariat |
| CSAF | Commercial Salmon Allocation Framework |
| CSAB | Commercial Salmon Advisory Board |
| CWT | Coded Wire Tag |
| DIDSON | Dual Frequency Identification Sonar |
| ER | Exploitation Rate |
| ESSR | Excess Salmon to Spawning Requirements |

| | |
|--------------|--|
| FNFC | First Nations Fishery Council |
| FRP | Fraser River Panel |
| FSC | Food, Social and Ceremonial |
| HG | Haida Gwaii |
| ITQ | Individual Transfer Quota |
| IHPC | Integrated Harvest Planning Committee |
| ISBM | Individual Stock-Based Management |
| LAER | Low Abundance Exploitation Rates |
| LRP | Lower Reference Points |
| MCC | Marine Conservation Caucus |
| MPA | Marine Protected Area |
| MSY | Maximum Sustainable Yield |
| MVI | Mid Vancouver Island |
| NOLS | National On-line Licensing System |
| PICFI | Pacific Integrated Commercial Fisheries Initiative |
| PFMA | Pacific Fisheries Management Areas |
| 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) |

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 2019/2020

KEY CHANGES FOR THE 2019/20 NORTHERN BC SALMON IFMP

PACIFIC SALMON RETURNING IN 2019 EXPERIENCED SEASONALLY WARMER THAN AVERAGE TEMPERATURES THROUGHOUT THEIR LIVES:

Overall, environmental conditions have been warmer than average in the Northeast Pacific Ocean and in British Columbia and the Yukon affecting all life stages of Pacific salmon returning in 2019. Responses of individual salmon populations will vary spatially. However, salmon populations have experienced broadly similar conditions over the past few years, leading to the assumption that salmon responses and the resultant 2019 return abundances might resemble those observed in recent years. These recent observations have included below average survival for most Fraser Sockeye, Chinook, Chum, and Pink stocks, coast-wide declines and smaller body sizes and decreases in age-at-maturity for Chinook, and overall greater variability in salmon production. See Section 2.2.1 for further details.

KWINAGEESE CLOSURE

New closure dates; please see Northern Sockeye Salmon Fishing Plan in Section [12](#) for more information.

NORTHERN BC COMMERCIAL AND RECREATIONAL COHO FISHING MANAGEMENT ACTIONS

New management measures are under discussion for commercial and recreational fisheries in Northern BC to address Coho conservation concerns. DFO is implementing a precautionary approach to Coho management in 2019 to address conservation concerns for Northern Coho stocks as a result of poor returns observed in 2018. For more information on Coho see section 13.3.

FRASER RIVER CHINOOK – NEW CONSERVATION MEASURES

For Northern BC, restrictions will include a delayed start for the Area F troll fishery of August 20th.

PACIFIC SALMON TREATY UPDATE

Following months of negotiations, the Pacific Salmon Commission (PSC), made up of representatives from Canada and the U.S., reached agreement on proposed changes to five “fishing chapters” in Annex IV of the Pacific Salmon Treaty (PST). In August 2018, the PSC

provided their recommendation to the Governments of Canada and U.S. for review and ratification. The revised Chapters were provisionally implemented as of January 1, 2019 and came fully into force effective May 3, 2019. This will create a new 10-year conservation and harvest sharing arrangement under the PST.

The revised versions of Annex IV, Chapters 1, 2, 3, 5, and 6 (plus current text for Chapters 4, 7, and 8) have been posted at: <https://www.psc.org/publications/pacific-salmon-treaty/>. Please note that Chapters 1, 2, 3, 5, and 6 are not yet formally in force, but the Parties have agreed to provisionally apply them as of January 1, 2019.

COMMERCIAL SALMON ALLOCATION FRAMEWORK

*Please see [Appendix 6](#) for details of CSAF demonstration fisheries proposed for 2019.

Additional information on the work completed since 2013 can be found at the following link:
<http://www.pac.dfo-mpo.gc.ca/consultation/smon/saf-crrs/index-eng.html>

I OVERVIEW

I.1 INTRODUCTION

The Northern BC Salmon Integrated Fisheries Management Plan (IFMP) covers the period June 1, 2019 to May 31, 2020.

This IFMP provides a broad context to the management of the Pacific salmon fishery and the interrelationships of all fishing sectors involved in this fishery. Section [2](#) considers stock assessment, while Sections [2](#) and [4](#) consider the shared stewardship arrangements and the social, cultural, and economic performance of the fishery. Section [5](#) describes the broader management issues, and the objectives to address these issues are identified in Section [6](#). Sections [6.9](#) and [8](#) describe allocation, general decision guidelines and compliance plans. 2018 Post season review information is outlined in Section [8](#). Sections [10](#), [11](#), and [12](#) are sections that describe the different fisheries and Section [12](#) of the IFMP covers off the fishing plans for each salmon species.

The Appendices in the IFMP provide information such as the fishing vessel safety, advisory board members and maps of commercial licence areas.

I.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 the diet, culture and economy 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.

I.3 TYPE OF FISHERY AND PARTICIPANTS

This plan describes the management of First Nations, recreational and commercial fisheries for Pacific salmon in southern BC 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.

I.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 1.4-1: Management Areas for Northern B.C.](#)).

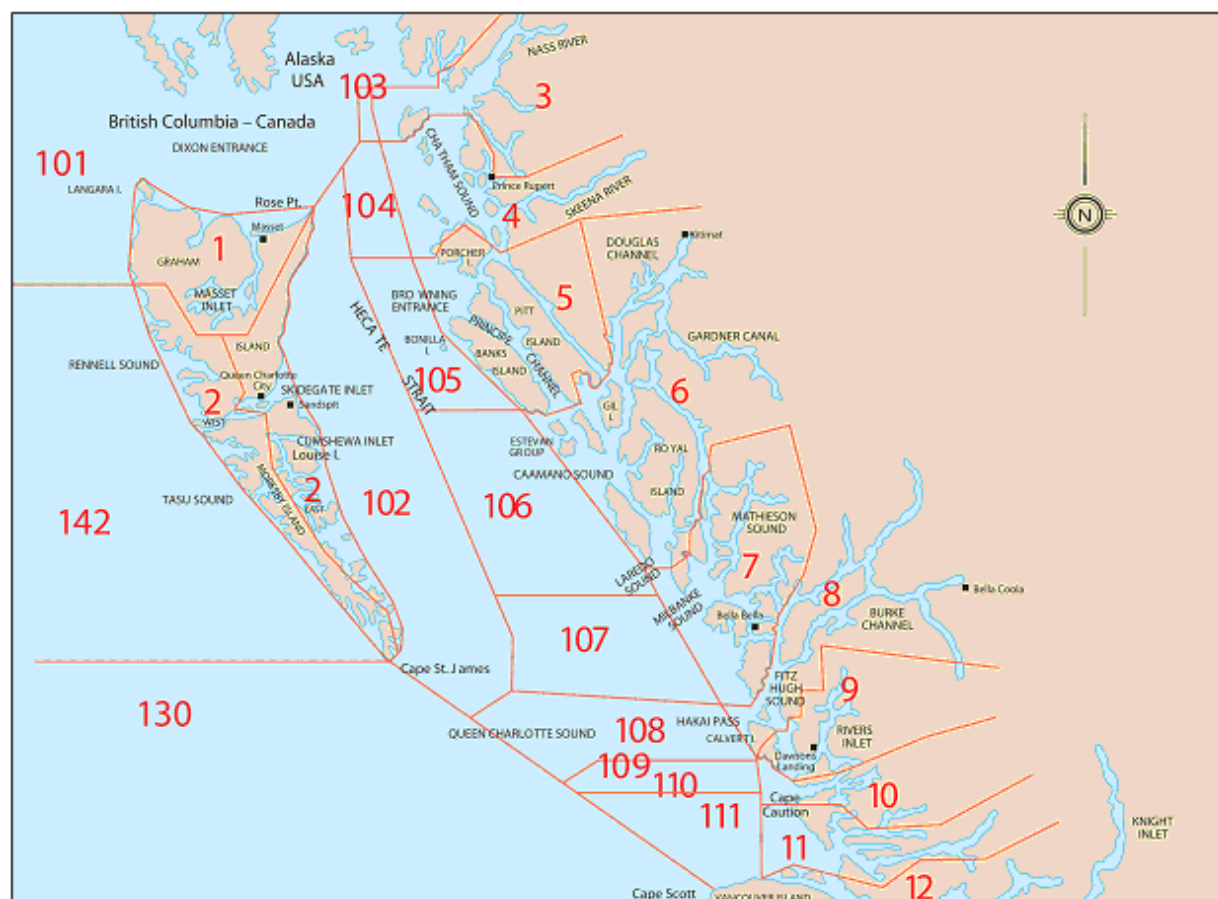


Figure 1.4-1: Management Areas for Northern B.C.

I.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.

In the 1990 Sparrow decision, the Supreme Court of Canada found that where an Aboriginal group has an Aboriginal right to fish for food, social and ceremonial purposes, it takes priority, after conservation, over other uses of the resource.

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:

- Treaty arrangements.
- Rights-based commercial access for five Nuu-chah-nulth First Nations located on the West Coast of Vancouver Island (Ahousaht, Ehattesaht, Hesquiaht, Mowachaht/Muchalaht, and Tla-o-qui-aht). DFO is working with the Five Nations to implement a Fishery Management Plan for the 2019/2020 season.
- Commercial fisheries access through communal commercial licences acquired through DFO relinquishment programs (e.g. Pacific Integrated Commercial Fisheries Initiative - PICFI or Allocation Transfer Program-ATP). These licences are fished in a manner that is comparable to the general commercial fishery.
- Negotiated economic opportunity fisheries (Lower Fraser and West Coast of Vancouver Island only) or demonstration fisheries (select locations, to date supported through licences relinquished from the commercial salmon fleet, primarily from the ATP and PICFI programs).
- Excess Salmon to Spawning Requirements (ESSR) fisheries may also be provided that permit the sale of fish in some highly terminal areas where spawner abundance is in excess of spawning requirements.

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 and non-tidal licences are issued by the Province. Anglers wishing to retain salmon taken from either tidal or non-tidal waters must have a valid salmon

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

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

I.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 consultation from those with an interest in salmon management. While the policies themselves are not subject to annual changes, implementation details are continually refined where appropriate.

I.6.1 POLICY FRAMEWORK FOR THE MANAGEMENT OF PACIFIC SALMON FISHERIES

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

<http://www.pac.dfo-mpo.gc.ca/fm-gp/species-especes/salmon-saumon/pol/index-eng.html>

Canada's Policy for Conservation of Wild Pacific Salmon (the Wild Salmon Policy) sets out the vision regarding the importance and role of Pacific wild salmon as well as a strategy for their protection. More information on this can be found in Section 5.1.1 of this plan or at: <http://www.pac.dfo-mpo.gc.ca/publications/pdfs/wsp-eng.pdf>

To further communicate the work the Department is doing in support of the policy, on October 11, 2018, Canada's Minister of Fisheries and Oceans and the Canadian Coast Guard – the Honourable Jonathan Wilkinson - released the *Wild Salmon Policy 2018-2022 Implementation Plan*. This collaboratively developed plan was consulted on broadly throughout fall 2017, and lays out seven overarching approaches to implementation and 48 specific activities that will be achieved over the next five years. The plan is organized under three key themes: Assessment; Maintaining and Rebuilding Stocks; and Accountability. In 2019, the first annual report on progress will be released.

For a copy of the *Wild Salmon Policy*, the *Wild Salmon Policy 2018-2022 Implementation Plan*, *Highlights* of work done from 2005-2017, and information on what we heard during consultations and response, please see: <http://www.pac.dfo-mpo.gc.ca/fm-gp/species-especies/salmon-saumon/wsp-pss/index-eng.html>

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 6.9 of this plan.

Starting in 2019, the Department is initiating a review the Salmon Allocation Policy (1999) according to the direction of the BC Supreme Court in the recent BC Supreme Court decision in *Ahousaht Indian Band and Nation v Canada (Attorney General)*, 2018.

The review will be based on a collaborative approach that respects the nation-to nation relationship with Indigenous peoples, and engages stakeholders, in a way that will advance reconciliation and a sustainable, integrated fishery in BC. It is expected that this process will take multiple years to complete with work over 2019 focused on collaborating with the First Nations, and the commercial and recreational salmon fishing sectors to outline the scope of the review and develop a Terms of Reference to help guide discussions.

Pacific Fisheries Reform, announced by the Department in April of 2005, provides a vision of a sustainable fishery where the full potential of the resource is realized, Aboriginal rights and title are respected, there is certainty and stability for all, and fishery participants share in the responsibility of management. Future treaties with First Nations are contemplated, as is the need to be adaptive and responsive to change. This policy direction provides a framework for

improving the economic viability of commercial fisheries, to addressing First Nations aspirations with respect to FSC and commercial access and involvement in management.

The 'Vision for Recreational Fisheries in BC' was approved in January 2010 by DFO, the Sport Fishing Advisory Board (SFAB), and the Province of BC. 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/consultation/smon/sfab-ccps/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.

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

For more information on the Sustainable Fisheries Framework and its policies, please visit:

<http://www.dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/overview-cadre-eng.htm>

1.6.2 FIRST NATIONS AND CANADA'S FISHERIES

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

- Improving relations with First Nations
- Providing a framework for the management of the First Nations fishery in a manner that was consistent with the Supreme Court of Canada's 1990 *Sparrow* decision
- Greater involvement of First Nations in the management of fisheries
- Increased participation in commercial fisheries (Allocation Transfer Program (ATP))

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.

Five Nuu-chah-nulth First Nations located on the West Coast of Vancouver Island - Ahousaht, Ehattesaht, Hesquiaht, Mowachaht/Muchalaht, and Tla-o-qui-aht (the Five Nations) - have aboriginal rights to fish for any species of fish within their Fishing Territories and to sell that fish, with the exception of geoduck. DFO is working with the Five Nations to implement a Fishery Management Plan (FMP) for salmon, groundfish, crab and prawn by April 1, 2019. This FMP includes specific details about the fishery, such as allocation/access, licensing and designations, fishing area, harvesting opportunities, and fishery monitoring and catch reporting.

As part of the reform of Pacific fisheries, DFO is looking for opportunities to increase First Nations participation in commercial 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, First Nations' aspirations to be more involved are supported and the overall management of fisheries is improved.

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, greater confidence in catch data through strengthened fisheries monitoring, catch reporting and enforcement, and improved collection and storage of catch information; and
- 3) Collaborative management mechanisms for all harvest sectors, including the growing aboriginal commercial participants.

In its first 5 years, the Government of Canada committed \$175 million to implement the initiative. 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 PICFI, with resources of \$22.05M per year. The 2016/17 federal budget supported a one-year renewal of the PIFCI program at the same funding level (\$22.05M) until March 31, 2017. Budget 2017 proposed to provide \$250 million over five years, and \$62.2 million ongoing, to Fisheries and Oceans Canada to renew and expand the successful Pacific and Atlantic integrated commercial fisheries initiatives and to augment Indigenous collaborative management programming. In Budget 2017, it was announced that PICFI is to receive permanent long term funding of \$22.05M annually. Beginning 2018/2019, a \$600K Aquaculture Development Source (ADS) funding envelope was launched to support aquaculture projects under PICFI.

I.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, work is being undertaken to improve catch monitoring programs by clearly identifying information requirements based on ecosystem risk 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 2012. The Framework outlines how consistent ecological risk assessment criteria can be applied to all fisheries to determine the level of monitoring required, while allowing for final monitoring and reporting programs to reflect the fishery's unique characteristics.

Risk assessments are performed using an Excel-based tool that provides a consistent approach to a structured conversation regarding ecological risk and other resource management considerations. Draft risk assessments will be initially completed by DFO, then presented to harvesters for review, comment, and revision through existing advisory processes established for fisheries management purposes. Where no advisory process exists, engagement will occur through alternative means. Current status of the salmon risk assessments can be found in Appendix 8.

Should the risk assessment indicate a gap between the current level and target level of monitoring identified through the risk assessment, options to address the monitoring gap are to be identified through discussion between DFO and harvesters. The feasibility of these options (e.g. cost, technical considerations) is also to be considered through these discussions. The Strategic Framework directs that monitoring and reporting programs are both cost-effective and tailor-made for a fishery. As such, a collaborative approach is required.

Where monitoring options are determined to be feasible, the current monitoring and reporting program is to be revised to incorporate these options so the program provides sufficient information to resource managers to manage the ecological risk of the fishery effectively. Where monitoring options are not feasible, alternative management approaches are required to reduce the ecological risk posed by the fishery. If there is no gap between the current and target level of monitoring, then the management approach would not require any change.

As of February 2019, the Department is in the process of finalizing a draft national Fishery Monitoring Policy. That national Policy—an evolution of the existing Strategic Framework—looks to bring consistency in the development, delivery and evaluation of monitoring programs for all federally-managed wild fisheries in Canada, and will ultimately supersede the existing Pacific Framework.

More information on the Pacific Framework and risk assessment is available on the internet at:

www.pac.dfo-mpo.gc.ca/fm-gp/docs/framework_monitoring-cadre_surveillance/page-1-eng.html

1.7 CONSULTATION ON 2019/2020

This plan incorporates the results of consultations and input from First Nations, recreational and commercial harvesters and conservation organizations. In addition to bilateral meetings and submissions received on the proposed plan, the Integrated Harvest Planning Committee (IHPC), and First Nations groups and organizations provide opportunities for these parties to come together to discuss issues and concerns related to the management of salmon. Potential significant changes to provisions in the IFMP will be identified to the parties prior to implementation. However there may be circumstances such as in season forecast updates when changes may need to be made without prior notification.

Fisheries and Oceans Canada is committed to working with Indigenous peoples on planning and management of the salmon fisheries through existing and emerging bilateral and regional processes and relationships based on the recognition of rights, respect, cooperation and partnership. Fisheries and Oceans Canada will also continue to consult with recreational and commercial harvesters, and conservation organizations to seek IFMP input and to further plan and co-ordinate fishing activities.

Further information on salmon consultations, including terms of reference, IHPC membership, and meeting dates can be found on the Salmon Consultation website at: <http://www.pac.dfo-mpo.gc.ca/consultation/smon/index-eng.html>

I.8 APPROVAL PROCESS

This plan is approved by the Regional Director General – Pacific Region on behalf of the Minister of Fisheries and Oceans Canada.

2 STOCK ASSESSMENT, SCIENCE AND TRADITIONAL ECOLOGICAL KNOWLEDGE

2.1 BIOLOGICAL SYNOPSIS

Pacific salmon managed by DFO include five species belonging to the genus *Oncorhynchus*: Pink (*O. gorbuscha*), Chum (*O. keta*), Sockeye (*O. nerka*), Coho (*O. kisutch*) and Chinook (*O. tshawytscha*). The native range of Pacific salmon includes the North Pacific Ocean, Bering Strait, south-western Beaufort Sea and surrounding fresh waters. They occur in an estimated 1300 - 1500 rivers and streams in BC and Yukon; notably, the Skeena River and Nass River in the north and the Fraser River in the south, collectively accounting for roughly 75% of the total salmon production in Canada.

Each Pacific salmon species has unique physical characteristics, life histories and spawning habits, with further variation observed among populations of each species. [Table 2.1-1](#) provides a brief summary of the contrasts in life history characteristics among species of Pacific salmon (from Haig-Brown Kingfisher Creek Restoration Project, 1998-99).

Chinook salmon produce the largest adults of all the Pacific salmon species and typically live the longest (six or more years). Chinook salmon fry may go to sea soon after hatching or, after one to two years in fresh water. Chinook salmon generally mature at age three to seven years, but “jacks” and occasionally “jills”, defined as two-year-old sexually mature males and females that return to spawn, are also common among some Chinook salmon populations (as well as some Coho and Sockeye salmon populations).

Adult Coho generally return from late summer and early fall. Most populations originate from streams close to the ocean, although some journey as far as 1,500 kilometers inland. In contrast to other Pacific salmon, most Coho fry remain in freshwater for a full year after emerging from the gravel. Their age at maturity is normally three years, though a number of northern stocks may spend two years in freshwater before returning to spawn as four year olds. Similarly, approximately ten percent of Interior Fraser Coho mature as four year olds due to a two-year juvenile freshwater residency period.

Sockeye salmon generally spawn in streams with lake outlets. Young Sockeye typically spend between one and three years in their “nursery lake” before migrating to sea, although there are populations which do not require nursery lakes as part of their life history. Upon entering the ocean, Sockeye salmon move rapidly out of the estuaries and travel thousands of miles into the Gulf of Alaska and the North Pacific to feed. They generally return to their natal spawning stream at ages three to six years.

Chum salmon generally spawn in early winter in lower tributaries along the coast, rarely more than 150 kilometers inland. Fry emerge in the spring and go directly to sea. Chum generally mature in their third, fourth, or fifth year.

Pink salmon live only two years, spending the majority of their life in ocean feeding areas. Pink salmon fry migrate to the sea as soon as they emerge from the gravel. Once mature, adults leave the ocean in the late summer and early fall and usually spawn in streams not fed by lakes, short distances from their ocean-entry point.

The numbers of Pacific salmon returning to BC waters varies greatly from year to year and decade to decade, often with pronounced population cycles. For example, populations of Pink salmon usually have a dominant odd-year or even-year cycle, and a number of Sockeye salmon populations are very abundant every 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 period.

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

For more information, refer to the Fisheries and Oceans Canada [Pacific Salmon Facts website](#).

Table 2.1-1: Summary of general biological and life history characteristics for five species of Pacific salmon

| Life History Characteristic | Coho <i>O. kisutch</i> | Sockeye <i>O. nerka</i> | Pink <i>O. gorbuscha</i> | Chum <i>O. keta</i> | Chinook <i>O. tsawytscha</i> |
|------------------------------|------------------------------|----------------------------|--|--|--|
| Season when eggs hatch | Spring | Spring | Spring | Spring | Spring |
| Length of stay in freshwater | 1–2 years; 1 year is common. | 1 month to 2 years | Virtually none; often straight to ocean. | Virtually none; often straight to ocean. | Ocean-type: 60-150 days Stream-type: 1-2 years |
| Primary rearing habitat | Stream | Lake/stream | Estuary | Estuary | Stream/Ocean |
| Size at ocean migration | 10cm or more | Variable, 6.5 to 12cm | About 3.3cm | 2.8 to 5.5cm | 5 to 15cm |
| Ocean voyage | 4–18 months | 16 months to 4 years | 18 months | 2 to 5 years | 4 months to 5 years |
| Age at return to freshwater | During 2nd to 4th year | During 3rd to 5th years | During 2nd year | During 3rd to 5th years | During 2nd to 6th years |
| Season/month of return | Late summer to January | Mid-summer to late autumn | July to September | July to October | Spring to fall; some rivers support more than one run. |
| Number of eggs/female | 2,000–3,000 | 2,000–4,500 | 1,200–2,000 | 2,000–3,000 | 2,000-17,000 (generally 5,000-6,000) |
| Preferred spawning area | Small streams | Near and in lake systems. | Close to ocean | Above turbulent areas or upwellings | Very broad tolerances |

SALMON LIFE CYCLE

The Pacific salmon life-cycle includes periods in fresh water and the marine environment, with varying durations across species and populations. For all species, life begins in freshwater, when eggs deposited into gravel beds (called *redds*) the fall prior hatch as *alevins* by mid-winter. After surviving the rest of winter living in the gravel, young *fry* emerge in spring to reside in freshwater streams and lakes from a few hours (Pink and some Chum salmon populations) up to two years (some Coho and Chinook populations). Most fry then migrate to the sea to become *smolts* (transitioning to the salt water environment) and spend one to five years in the ocean, often undertaking prolonged (and sometimes distant) ocean-feeding migrations which are thought to be population-specific ([Figure 2.1-1](#)). (Notable exceptions include some Sockeye salmon that have developed a land-locked form – called kokanee – that do not go to sea). In the ocean, Sockeye, Pink and Chum feed primarily on plankton and crustaceans such as tiny

shrimp. Chinook and Coho also eat smaller fish, such as herring. At sea, Pacific salmon species attain the following average adult weights: 1 to 3 kg for Pink; 5 to 7 kg for Chum; 3.5 to 7 kg for Coho; 2 to 4 kg for Sockeye; and 6 to 18 kg for Chinook (the largest recorded Chinook was 57.27 kg). As anadromous species, Pacific salmon migrate back into rivers and streams as adults to spawn (often to the same river and even gravel bed from which they hatched). The return migration to fresh water can occur from spring to fall (timing is species- and/or population-dependent), but spawning generally takes place through the fall and early winter. In general, Sockeye and Chinook travel the farthest upstream to spawn—some as far as 1,500 kilometres. Chum, Coho and Pink usually originate from spawning sites located closer to the ocean. A notable exception are Yukon River Chum salmon that travel 3,200 kilometres to their spawning grounds. Following courtship, spawning females release eggs that are fertilized by a spawning male; the eggs are then buried by the female to start the next generation. Both adults die after spawning. Total life spans range from two years (for Pink salmon populations) up to six or seven years (for some Sockeye and Chinook salmon populations).

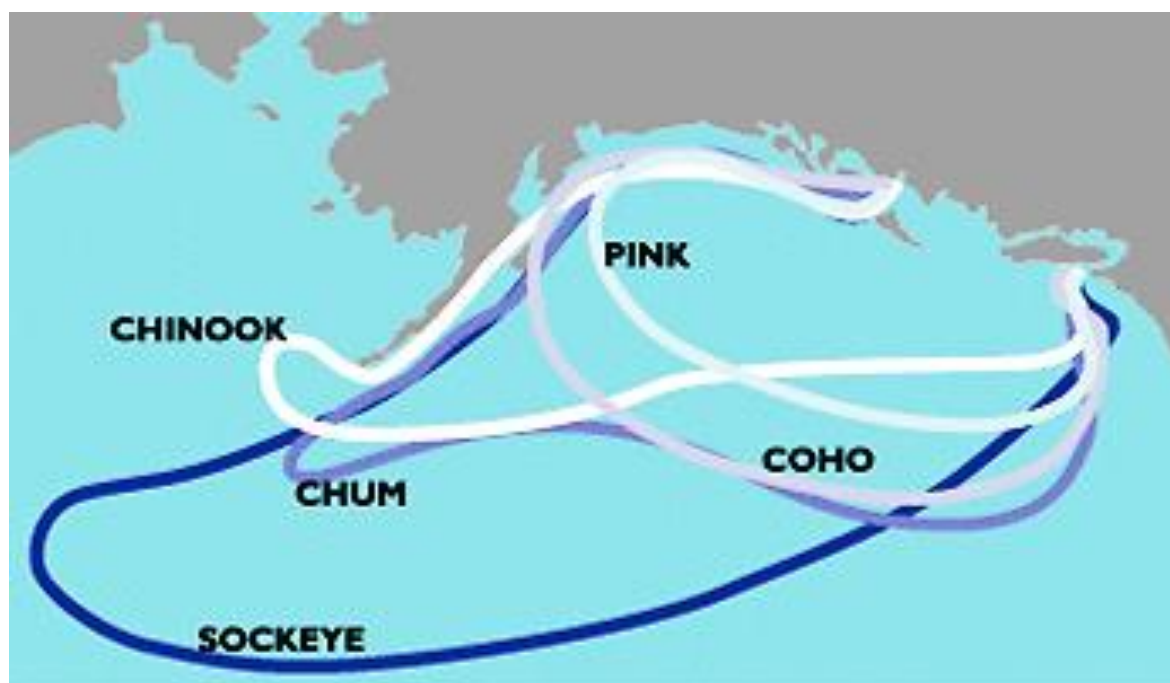


Figure 2.1-1: Generalized habitat of British Columbia Pacific salmon species in the North Pacific Ocean.

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

complex food webs in oceanic, estuarine, freshwater and terrestrial ecosystems by providing nutrients every year during their migration to the rivers and lakes to spawn.

DFO is moving away from management on a single species and moving towards an integrated ecosystem approach to science and management. 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. The main focus of this effort will be on developing ecosystem-related indicators and science-based tools to better understand the pressures on Conservation Units (CUs) of Pacific Salmon and for integrating salmon conservation and other planning objectives. This strategy will include extraction of relevant information on environmental conditions in marine and freshwater ecosystems, in a risk-based framework.

In 2018, the Department introduced the Wild Salmon Policy Implementation Plan to provide a forward-looking blueprint for continuing to restore and maintain wild Pacific salmon populations and their habitats under the Wild Salmon Policy. The greatest challenge in implementation of the WSP is balancing the goals of maintaining and restoring healthy and diverse salmon populations and their habitats, with social and economic objectives that reflect people's values and preferences. Standardized monitoring and assessment of wild salmon populations, habitat and eventually ecosystem status will facilitate the development of comprehensive integrated strategic plans (WSP Strategy 4) that will address the goals of the WSP while addressing the needs of people. Outcomes of these plans will include biological objectives for salmon production from CUs 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.

Information on these programs is available at:

<http://www.pac.dfo-mpo.gc.ca/science/index-eng.html>.

These programs include:

- The Strait of Georgia Ecosystem Research Initiative
- Fraser River Environmental Watch
- Monitoring of physical, biological, and chemical freshwater and marine conditions
- Chlorophyll and phytoplankton timing and abundance

The annual State of the Pacific Ocean Report describes changes and trends in atmospheric and oceanic conditions which have the potential to affect Pacific salmon (and other species) populations and informs science-based decision-making and DFO's management of fisheries and marine resources in the Pacific Region. It is available at:

<http://www.dfo-mpo.gc.ca/oceans/publications/index-eng.html>.

2.2.1 ENVIRONMENTAL CONDITIONS INFLUENCING 2019 SALMON RETURNS

Global temperatures have been steadily increasing over the last century¹. Temperatures are expected to continue this warming trend, and in British Columbia are predicted to reach a median temperature increase of 2.5°C by 2080². The Yukon has warmed twice as fast as southern latitudes in Canada in the past 50 years, and temperatures are projected to increase by a further 2.0°C in the next 50 years^{3,4}. Local air and water temperatures have been particularly warm in recent years^{1,2}, which can have direct effects on Pacific salmon stocks and the habitats they use throughout their lives.

Most Pacific salmon returning to spawn in 2019 reared as juveniles in the Northeast Pacific Ocean between 2016 and 2019, depending on their life-history and age-at-maturity. The notable 'warm blob' heat wave in the Northeast Pacific Ocean was present from the latter half of 2013 to the fall of 2016⁵ just prior to the ocean entry timing of most of these fish. Sea-surface-temperatures (SST) during this period were 3-5°C above seasonal averages, and extended down to depths of 100 m⁵. Concurrently, a strong El Niño event occurred in late 2015 to early 2016, further increasing temperatures to the hottest observed throughout the 137-year time-series.

The El Niño transitioned to cooler La Niña conditions by the end of 2016⁶. Although SSTs in the Northeast Pacific cooled in 2016, warm subsurface temperatures persisted at depths of 100-200 m until early 2018^{6,7}. Any reprieve from these warm ocean temperatures was short lived, as warm temperature anomalies in Northeast Pacific and Bering Sea have again been observed, starting in the summer of 2018⁸. Therefore, Pacific salmon returning in 2019 would have spent most of their marine residence in warmer than average temperatures.

While physical oceanographic conditions of the Northeast Pacific reverted back to more typical observations in 2016, biological conditions continued to reflect a warmer ocean. Reduced stratification of the water column and increased upwelling of nutrients to surface water occurred in 2016. In 2017, winter mixing returned to 2011-2013 levels, suggesting that there was a normal nutrient supply in the NE Pacific^{6, 7}. Along the southwest coast of Canada in 2017, the timing and magnitude of the upwelling-favourable winds and currents would have supported average to below-average upwelling-based productivity⁹. In both 2016 and 2017, the zooplankton community continued to exhibit characteristics consistent with warmer ocean temperatures. Samples indicated fewer lipid-rich subarctic and boreal copepods, and a greater abundance of lipid-poor southern copepods in 2016, with slight improvements in 2017^{10, 11}. The recent observations of warming ocean conditions in 2018 could reverse the improvements observed in 2017, again decreasing the proportion of lipid-rich northern copepods.

Most Pacific salmon returning to spawn in 2019 incubated as eggs, and depending on the life-history and age-at-maturity reared as juveniles in freshwater between 2014 and 2017. The Pacific Climate Impacts Consortium (PCIC) reported warmer than average air temperatures in British Columbia in recent years¹², which coincided with the warm conditions observed in the Northeast Pacific Ocean^{5, 8}. Warm temperatures in rivers and lakes affected all life history stages of the 2019 Pacific salmon returns, through impacts to adults migrating upstream, egg incubation, juvenile rearing, and smolt downstream migration.

Warmer than average temperatures in freshwater pose particular challenges to adult salmon that migrate upstream during summer months in southern latitudes, when temperatures can exceed thermal tolerance levels for salmon. Temperatures above 18°C can result in decreased adult salmon swimming performance, and above 20°C can increase adult mortality, adult disease, egg viability, and legacy effects that have negative impacts on juvenile condition^{13, 14, 15, 16, 17}. Summer river temperatures were particularly warm between 2014 and 2017, exceeding thermal optimal ranges for some salmon populations, such as adult Sockeye that migrate in the summer in the Fraser watershed^{12, 13, 14}. Warmer temperatures also coincided with drought conditions and low water levels in some Northern BC systems, influencing spawning habitat and fish distribution (C. Carr-Harris, DFO, pers. comm.).

Higher temperatures can influence timing of the hatching of eggs¹⁸ and fry outmigration¹⁹ and also fry swim performance¹⁵. On a positive note, warm temperatures can improve juvenile growth rates when prey are not limiting^{20, 21}, and also increase the length of the growing season in some areas²². Salmon population responses to changes in temperature are population specific and will vary by region, (D.A. Patterson, DFO, pers. comm.).

Spring freshets in various BC rivers, and ice-off in higher latitude or altitude lakes occurred earlier than normal in recent years. Smolt outmigration was several weeks earlier than

previously observed in areas that are monitored²³. Temperature affects downstream survival of juvenile salmon by influencing both the optimal smoltification window²⁴ and swim performance²⁰. However, the overall influence on juvenile survival is less clear. Depending on the outmigration timing of juveniles, discharge conditions experienced by individual salmon populations will vary, and their responses to these conditions can also vary. For example, higher discharge decreases water clarity, which can decrease juvenile predation risk^{25,26}; however, the resulting higher volume of suspended sediments also can have a direct negative effect on juvenile salmon causing mortality and reduced disease resistance²⁷. For a number of BC Interior watersheds, the loss of forest canopy due to fires, pine beetle, and logging has compounded the intensity of spring runoff, which is anticipated to reduce salmon productivity in these freshwater systems (R.E. Bailey, DFO, pers. comm.).

References

¹NASA Scientific Visualization Studio. <https://climate.nasa.gov/interactives/climate-time-machine>

²Pacific Climate Impacts Consortium (PCIC) 2012.
<http://www.plan2adapt.ca/tools/planners?pr=0&ts=9&toy=16>

³Streicker, J., 2016. Yukon Climate Change Indicators and Key Findings 2015. Northern Climate ExChange, Yukon Research Centre, Yukon College, 84 p.
https://www.yukoncollege.yk.ca/sites/default/files/inline-files/Indicator_Report_Final_web.pdf

⁴Collins, M., R. Knutti, J. Arblaster, J.L. Dufresne, T. Fichet, P. Friedlingstein, X. Gao, W.J. Gutowski, T. Johns, G. Krinner, M. Shongwe, C. Tebaldi, A.J. Weaver and M. Wehner, 2013. Long-term climate change: Projections, commitments and irreversibility. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
<https://books.google.ca/books?hl=en&lr=&id=o4gaBQAAQBAJ&oi=fnd&pg=PR1&dq=Climate+Change+2013:+The+Physical+Science+Basis.+Contribution+of+Working+Group+I+to+the+Fifth+Assessment+Report+of+the+Intergovernmental+Panel+on+Climate+Change&ots=Wgnv7LGxOg&sig=pgJvn7bic04IZwxrBpEnEXKpMlg#v=onepage&q=Climate%20Change%202013%3A%20The%20Physical%20Science%20Basis.%20Contribution%20of%20Working%20Group%20I%20to%20the%20Fifth%20Assessment%20Report%20of%20the%20Intergovernmental%20Panel%20on%20Climate%20Change&f=false>

- ⁵Bond, N.A., Cronin, M.F., Freeland, H., and Mantua, N. 2015. Causes and impacts of the 2014 warm anomaly in the NE Pacific. *Geophys. Res. Lett.*, 42: 3414–3420.
<https://agupubs.onlinelibrary.wiley.com/doi/full/10.1002/2015GL063306>
- ⁶Ross, T. 2017. La Nina, the blob and another warmest year. In *State of the Physical, Biological and Selected Fishery Resources of Pacific Canadian Marine Ecosystems in 2016*. Edited by P.C. Chandler, S.A. King, and J.L. Boldt. *Can. Tech. Rep. Fish. Aquat. Sci.* 3225. pp. 30–34.
<http://waves-vagues.dfo-mpo.gc.ca/Library/40617944.pdf>
- ⁷Ross, T., and Robert, M. 2018. La Niña and another warm year. *In State of the Physical, Biological and Selected Fishery Resources of Pacific Canadian Marine Ecosystems in 2017*. Edited by P.C. Chandler, S.A. King, and J.L. Boldt. *Can. Tech. Rep. Fish. Aquat. Sci.* 3266. pp. 27–32.
<http://waves-vagues.dfo-mpo.gc.ca/Library/40617944.pdf>
- ⁸Environment Canada Sea Surface Temperature anomalies: https://weather.gc.ca/saisons/sea-snow_e.html
- ⁹Hourston, R.A.S. and Thomson, R.E. Wind driven upwelling/downwelling along the Northwest Coast of North America: timing and magnitude. . *In State of the Physical, Biological and Selected Fishery Resources of Pacific Canadian Marine Ecosystems in 2017*. Edited by P.C. Chandler, S.A. King, and J.L. Boldt. *Can. Tech. Rep. Fish. Aquat. Sci.* 3266. pp. 27–32.
<http://waves-vagues.dfo-mpo.gc.ca/Library/40617944.pdf>
- ¹⁰Galbraith, M., and Young, K. 2017. Zooplankton along the B.C. continental margin 2016. In *State of the Physical, Biological and Selected Fishery Resources of Pacific Canadian Marine Ecosystems in 2016*. Edited by P.C. Chandler, S.A. King, and J.L. Boldt. *Can. Tech. Rep. Fish. Aquat. Sci.* 3225. pp. 67–75. <http://waves-vagues.dfo-mpo.gc.ca/Library/40617944.pdf>
- ¹¹Galbraith, M., and Young, K. 2018. West Coast British Columbia zooplankton biomass anomalies 2017. *In State of the Physical, Biological and Selected Fishery Resources of Pacific Canadian Marine Ecosystems in 2017*. Edited by P.C. Chandler, S.A. King, and J.L. Boldt. *Can. Tech. Rep. Fish. Aquat. Sci.* 3266. pp. 69–75. <http://waves-vagues.dfo-mpo.gc.ca/Library/40717914.pdf>
- ¹²Pacific Climate Impacts Consortium British Columbia seasonal anomaly maps.
<https://www.pacificclimate.org/analysis-tools/seasonal-anomaly-maps>
- ¹³Eliason, E.J., Clark, T.D., Hague, M.J., Hanson, L.M., Gallagher, Z.S., Jeffries, K.M., Gale, M.K., Patterson, D.A., Hinch, S.G., and Farrell, A.P. 2011. Differences in thermal tolerance among sockeye salmon populations. *Science*. 332 (6025): 109–112.
<http://science.sciencemag.org/content/332/6025/109.full>

- ¹⁴D.A. Patterson & K.A. Robinson, DFO Environmental Watch Program. <http://www.pac.dfo-mpo.gc.ca/science/habitat/frw-rfo/reports-rapports/archives-eng.html>
- ¹⁵Burt, J.M., Hinch, S.G., and Patterson, D.A. 2011. The importance of parentage in assessing temperature effects on fish early life history: a review of the experimental literature. *Rev. Fish Biol. Fish.* 21: 377–406. <https://link.springer.com/article/10.1007/s11160-010-9179-1>
- ¹⁶Sopinka, N.M., Middleton, C.T., Patterson, D.A., and Hinch, S.G. 2016. Does maternal captivity of wild, migratory sockeye salmon influence offspring performance? *Hydrobiologica* 779: 1–10. <https://link.springer.com/article/10.1007/s10750-016-2763-1>
- ¹⁷Tierney, K.B., Patterson, D.A., and Kennedy, C.J. 2009. The influence of maternal condition on offspring performance in sockeye salmon *Oncorhynchus nerka*. *J. Fish Biol.* 75(6): 1244–1257. <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1095-8649.2009.02360.x>
- ¹⁸Whitney, C.K., Hinch, S.G., and Patterson, D.A. 2014. Population origin and water temperature affect development timing in embryonic sockeye salmon. *Trans. Am. Fish. Soc.* 143(5): 1316–1329. <https://www.tandfonline.com/doi/full/10.1080/00028487.2014.935481?scroll=top&needAccess=true>
- ¹⁹Macdonald, J.S., Schrivener, J.C., Patterson, D.A., and Dixon-Warren, A. 1998. Temperatures in aquatic habitats: the impacts of forest harvesting and the biological consequences to sockeye salmon incubation habitats in the interior of B.C. In *Forest-fish conference: land management practices affecting aquatic ecosystems*. Edited by M.K. Brewin and D.M.A. Monita. Natural Resources Canada, Calgary, AB. pp. 313–324. <http://cfs.nrcan.gc.ca/pubwarehouse/pdfs/11639.pdf>
- ²⁰Brett, J.R. 1971. Energetic responses of salmon to temperature. A study of some thermal relations in the physiology and freshwater ecology of sockeye salmon (*Oncorhynchus nerka*). *Am. Zool.* 11(1): 99–113. <https://academic.oup.com/icb/article/11/1/99/2083970>
- ²¹Edmundson, J.A., and Mazumder, A. 2001. Linking Growth of Juvenile Sockeye Salmon to Habitat Temperature in Alaskan Lakes. *Trans. Am. Fish. Soc.* 130: 644–662. <https://afspubs.onlinelibrary.wiley.com/doi/abs/10.1577/1548-8659%282001%29130%3C0644%3ALGOJSS%3E2.0.CO%3B2>
- ²²Schindler, D.E., Rogers, D.E., Scheuerell, M.D., and Abrey, C.A. 2005. Effect of changing climate on zooplakton and juvenile sockeye salmon growth in Southwestern Alaska. *Ecology* 86(1): 198–209. <https://esajournals.onlinelibrary.wiley.com/doi/abs/10.1890/03-0408>

²³B.L. MacDonald, S.C.H. Grant, D.A. Patterson, K.A. Robinson, J.L. Boldt, K. Benner, C.M. Neville, L. Pon, J.A. Tadey, D.T. Selbie, and M.L. Winston. 2018. State of the Salmon: Informing the survival of Fraser Sockeye returning in 2018 through life cycle observations. Can. Tech. Rep. Fish. Aquat. Sci. 3271. <http://waves-vagues.dfo-mpo.gc.ca/Library/4072511x.pdf>

²⁴Bassett, M.C. 2015. Temporal and spatial differences in smolting among sockeye salmon (*Oncorhynchus nerka*) populations throughout fresh- and seawater migration and the effect of water temperature on the smolt window. M.Sc. Thesis, Natural Resources and Environmental Studies, University of Northern British Columbia, Prince George, B.C.
<https://unbc.arcabc.ca/islandora/object/unbc:15513>

²⁵Ginetz, R.M., and Larkin, P.A. 1976. Factors affecting rainbow trout (*Salmo gairdneri*) predation on migrant fry of sockeye salmon (*Oncorhynchus nerka*). J. Fish Res. Board Can. 33(1): 19–24.
<http://www.nrcresearchpress.com/doi/abs/10.1139/f76-003#.W-tSFBNKhE4>

²⁶Gregory, R.S., and Levings, C.D. 1998. Turbidity reduces predation on migrating juvenile Pacific Salmon. Trans. Am. Fish. Soc. 127(2): 275–285.
[https://www.tandfonline.com/doi/abs/10.1577/1548-8659\(1998\)127%3C0275%3ATRPOMJ%3E2.0.CO%3B2](https://www.tandfonline.com/doi/abs/10.1577/1548-8659(1998)127%3C0275%3ATRPOMJ%3E2.0.CO%3B2)

²⁷Martens, D.W., and Servizi, J.A. 1993. Suspended sediment particles inside gills and spleens of juvenile Pacific Salmon (*Oncorhynchus spp.*). Can. J. Fish. Aquat. Sci. 50: 586–590.
<http://www.nrcresearchpress.com/doi/abs/10.1139/f93-067#.W-tSqBNKhE4>

2.3 ABORIGINAL TRADITIONAL KNOWLEDGE (ATK)/TRADITIONAL ECOLOGICAL KNOWLEDGE (TEK)

As defined herein, both Indigenous Knowledge Systems (IKS) 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. IKS is the accumulated knowledge and experiences held by Aboriginal peoples and communities, while TEK is local knowledge held by any community, including industry, academia, and public sectors. While qualitatively different, both types of knowledge are regionally and locally specific and often can be utilized to improve management processes. The value of IKS and TEK is reflected in the requirements for both to be included in environmental assessments, co-management arrangements, species at risk recovery plans, and all coastal management decision-making processes. IKS and TEK are needed to 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 incorporate IKS 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 (2005) and Wild Salmon Policy Implementation Plan (2018) both acknowledge the importance of integrating IKS and TEK into the strategic planning process. The Department is exploring best practices to develop an approach for incorporating IKS and TEK into WSP integrated planning. The Department may identify potential partnerships with First Nations organizations to develop an approach for integrating IKS into WSP, particularly in planning initiatives.

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. The Department utilized Aboriginal knowledge about traditional fisheries, and the historical distribution and relative abundance of salmon in local watersheds in the selection of index streams for escapement monitoring of Interior Fraser Coho (Decker and Irvine 2013), and also for determining historical abundance ranges of Kitwanga and Morice Lake Sockeye.

2.4 STOCK ASSESSMENT

Salmon stock assessment is primarily concerned with providing sound scientific information to inform activities relating to the conservation and management of salmon resources. Stock assessment describes the past and present state of salmon stocks and may provide forecasts of future states. 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 Nations 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, as well as 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.

In the Pacific Region, salmon stock assessment advice is provided through the Salmon Assessment Section within each Area (Yukon and Transboundary, North Coast, South Coast and Fraser BC Interior), in conjunction with core Salmon Stock Assessment staff in the Stock Assessment and Research Division of Science Branch. External partners and clients play an increasing role in delivery of 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 analytical and peer review processes. Stock assessment staff collaborate 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 just over 450 discrete Conservation Units.
- 2) DFO 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 (Holt et al. 2009; Holt et al. 2018). For each metric, lower and upper benchmarks will delimit three status zones of a CU. Management actions will be determined based on a CUs biological status relative to these benchmarks. Management will be focused 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 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, assessment monitoring plans are updated by the Salmon Assessment Coordinating Committee (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 an ongoing 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 (e.g., 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.

2.5 SCIENCE INFORMATION SOURCES

The Canadian Science Advisory Secretariat (CSAS) serves as the primary departmental forum for peer review and evaluation of scientific research and literature, including TEK, relating to Pacific salmon. CSAS 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. CSAS also coordinates communication of the results of the scientific review and advisory processes.

Additional information about CSAS, the peer review process and meeting schedule, as well as reports on the status of salmon, environmental and ecosystem overviews prior to 2014, and existing research documents are available from CSAS web site:

<http://www.dfo-mpo.gc.ca/csas-sccs/index-eng.htm>

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 ([Grant et al. 2011](#)), initial status assessed in 2011 ([Grant and Pestal 2013](#)) and updated in June 2017 ([DFO 2018a](#)) through CSAS Regional Peer Review (RPR) processes. DFO completed a CSAS RPR process of WSP benchmarks and status assessment for Southern BC Chinook in February 2014 ([DFO 2016](#)). An assessment of WSP benchmarks and status assessment for Interior Fraser Coho was completed in November 2014 ([DFO 2015a](#)). Additionally, results are available from review of a habitat-based approach to determine benchmarks for Strait of Georgia and Lower Fraser River Coho Conservation Units ([DFO 2015b](#)). Finally, a process for

evaluating biological benchmarks for data-limited populations (Conservation Units) of Pacific salmon with a focus on Chum Salmon in Southern BC was reviewed in a July 12-13, 2017 CSAS RPR process ([Holt et al. 2018](#)).

Other recent research projects and Science advice processes include:

- estimates of a biologically-based spawning goal and biological benchmarks for the Canadian-origin Taku River Coho stock aggregate ([DFO 2015c](#));
- an evaluation and update of biologically-based targets for enhanced contributions to Chinook populations ([DFO 2018b](#));
- review of a proposed framework for determination of Pacific Salmon Commission reference points for status determination and associated allowable exploitation rates for select Canadian southern Coho Salmon management units ([DFO 2018c](#));
- Science information to support Chinook Salmon management measures in 2018 ([DFO 2018d](#)); and
- development of a framework for reviewing and approving revisions to Wild Salmon Policy Conservation Units (October 2018; http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/10_25-26-eng.html).

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

The number of salmon returning to spawn in a river, called “escapement”, has long been an important stock assessment measure of abundance. Salmon escapement data are now available from the Government of Canada Open Data portal at: <http://open.canada.ca/data/en/dataset/c48669a3-045b-400d-b730-48aafe8c5ee6>

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 development of a precautionary approach to management of salmon resources. Decisions on recovery and fisheries objectives will be made as part of the Strategic Planning Process described under WSP Strategy 4. To date

benchmarks have been reviewed for Southern BC Chinook; Interior Fraser River, Georgia Strait Mainland, East Vancouver Island Coho; and Fraser Sockeye CUs. 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 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.html>

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

- Climate change impacts on Pacific salmon are being investigated by multiple sectors within DFO and in collaboration with external partners: university, other organizations and agencies. In 2011, DFO implemented a science-based climate change program focused on adaptation in decisions and activities to consider the vulnerabilities, risks, impacts, and opportunities associated with a changing climate.
<http://www.pac.dfo-mpo.gc.ca/science/oceans-eng.html>
- An example of this work is the Aquatic Climate Change Adaptation Services Program (ACCASP) which has an emphasis on the development of new science knowledge to support the development of adaptation tools and strategies that will enable the integration of climate change considerations into the delivery of the Department's programs and policies. More information on this program is available at:
<http://www.dfo-mpo.gc.ca/science/rp-pr/accasp-psaccma/index-eng.asp>
- State of Salmon Program (SOS): this program integrates information on Pacific salmon (abundance, productivity, size, fecundity, run timing, etc.) and their freshwater and marine ecosystems (water temperatures, river discharge, ocean upwelling, etc.) to understand the state of Pacific salmon, and the factors that contribute to these states. Collaboration across DFO Science, DFO Areas, and other Sectors is foundational to this program.
- Salmon in Regional Ecosystems (SIRE) program investigates the mechanisms controlling recruitment variations and changes in productive capacity of salmon stocks within freshwater and/or marine ecosystems.

- On-going research related to improving forecasting ability for salmon stocks and CUs is being conducted by DFO Stock Assessment and the Fisheries & Oceanography Working Group. The annual State of the Pacific Ocean Reports was published by the Canadian Science Advisory Secretariat (CSAS) until 2012. Recent reports are available at:
<http://www.dfo-mpo.gc.ca/oceans/publications/index-eng.html>.
- The Fraser River Environmental Watch program provides scientific advice on the impact of different environmental factors on the migration success of Pacific salmon in fresh water.
<http://www.pac.dfo-mpo.gc.ca/science/habitat/frw-rfo/index-eng.html>
- DFO scientists in collaboration with other organizations including the North Pacific Anadromous Fisheries Commission (NPAFC), the Pacific Salmon Commission (PSC), and the Pacific Salmon Foundation (PSF) are studying salmon production, distribution and survival in the North Pacific Ocean including the Salish Sea, and developing leading indicators of salmon returns.
- Annual juvenile salmon surveys monitor the distribution, migration, and survival of salmon in their freshwater and early marine life history.
- On-going collaborative research between DFO and aquaculture industry to investigate the interactions between wild and cultured salmon through the Program for [Aquaculture Regulatory Research](#) (PARR) and [Aquaculture Collaborative Research and Development Program](#) (ACRDP)
- Research carried out in the freshwater and marine environments is being considered to provide a biological context as Supplementary Information for the forecast of Fraser River Sockeye.
http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2016/2016_047-eng.html
- On-going development of quantitative tools to inform rebuilding plans for depleted (red-status) CUs given climate/oceanographic change and variability and constraints from mixed-CU fisheries.

Added Reference:

Holt, C.A., Davis, B, Dobson, D., Godbout, L., Luedke, W., Tadey, J., Van Will, P.
Evaluating Benchmarks of Biological Status for Data-limited Populations
(Conservation Units) of Pacific Salmon, Focusing on Chum Salmon in Southern BC.
Can. Sci. Advis. Sec. Res. Doc. 2018/11.

3 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.¹ 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).

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) was developed to bring 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. The current IHPC advisory membership list is located in [Appendix 5](#).

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

¹ As defined in the Atlantic Fisheries Policy Review (AFPR): http://www.dfo-mpo.gc.ca/afpr-rppa/home_e.htm

that might adversely impact section 35 rights (established or potential) (Source: Aboriginal Consultation and Accommodation: Interim Guidelines for Federal Officials to Fulfill the Legal Duty to Consult, February 2008).

Consultation and engagement with First Nations takes place at a number of levels and through a variety of processes. For example, a significant amount of consultation and dialogue takes place through direct, bilateral meetings between DFO and First Nations at a local level. This can include specific engagement on the draft IFMP or other issues during the pre-season, in-season or post-season. In addition to consultations at the local level, DFO works with First Nations at the aggregate or watershed level. For example, the Aboriginal Aquatic Resource and Oceans 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 First Nations SCC, First Nations representatives from 13 geographical areas within B.C. meet with DFO resource management staff to discuss 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 commercial 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 consults with the Pacific Marine Conservation Caucus, an umbrella group representing nine core environment groups (<http://www.mccpacific.org/>).

4 ECONOMIC, SOCIAL AND CULTURAL IMPORTANCE

The intent of this section is to provide a socio-economic overview of the salmon fisheries in British Columbia using available information. 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 recreational fishery, and commercial fishery (harvest, processing and export activity including that generated by the Aboriginal communal commercial fishery). This section does not provide measures of economic value (i.e. consumer and producer surplus). 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.

4.1 ABORIGINAL FISHERY

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 FSC purposes. The Supreme Court found that where an Aboriginal group has a right to fish for FSC 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.

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:

- To provide a framework for the management of fishing by Aboriginal groups for food, social and ceremonial purposes.
- To provide Aboriginal groups with an opportunity to participate in the management of fisheries, thereby improving conservation, management and enhancement of the resource.
- To contribute to the economic self-sufficiency of Aboriginal communities.
- To provide a foundation for the development of self-government agreements and treaties.

- To improve the fisheries management skills and capacity of Aboriginal groups.

AFS fisheries agreements may identify the amounts of species including salmon that may be fished for FSC purposes, terms and conditions that will be included in the communal fishing licence, and fisheries management arrangements. Additional information on AFS implementation for FSC, including harvest target amounts for North Coast are provided in [section 0](#). In the region in 2018-2019, there were 82 AFS agreements, representing 159 First Nations conducting FSC harvests that contain provisions relating to salmon management including, but not limited to, FSC fishery arrangements. Among the areas, Fraser Interior had 27 agreements, North Coast had 20, South Coast had 32, and the Yukon had 3. An additional 17 First Nations are provided communal licences for FSC fishing, but do not have AFS agreements.

Fisheries chapters in modern First Nation treaties may articulate a treaty fishing right for FSC purposes that are protected under Section 35 of the Constitution Act, 1982. Negotiated through a side agreement, some modern treaty First Nations have been provided commercial access either through the general commercial fishery or a Harvest Agreement. While this commercial access may be referenced in the treaty, it is not protected under the Constitution Act.

Four modern treaties (Nisga'a Final Agreement, Tsawwassen First Nation Final Agreement (TFA), Maa-nulth First Nations Final Agreement (MNA), and Tla'amin Nation Final Agreement have been ratified in British Columbia.² For information on Nisga'a fisheries please see [section 0](#).

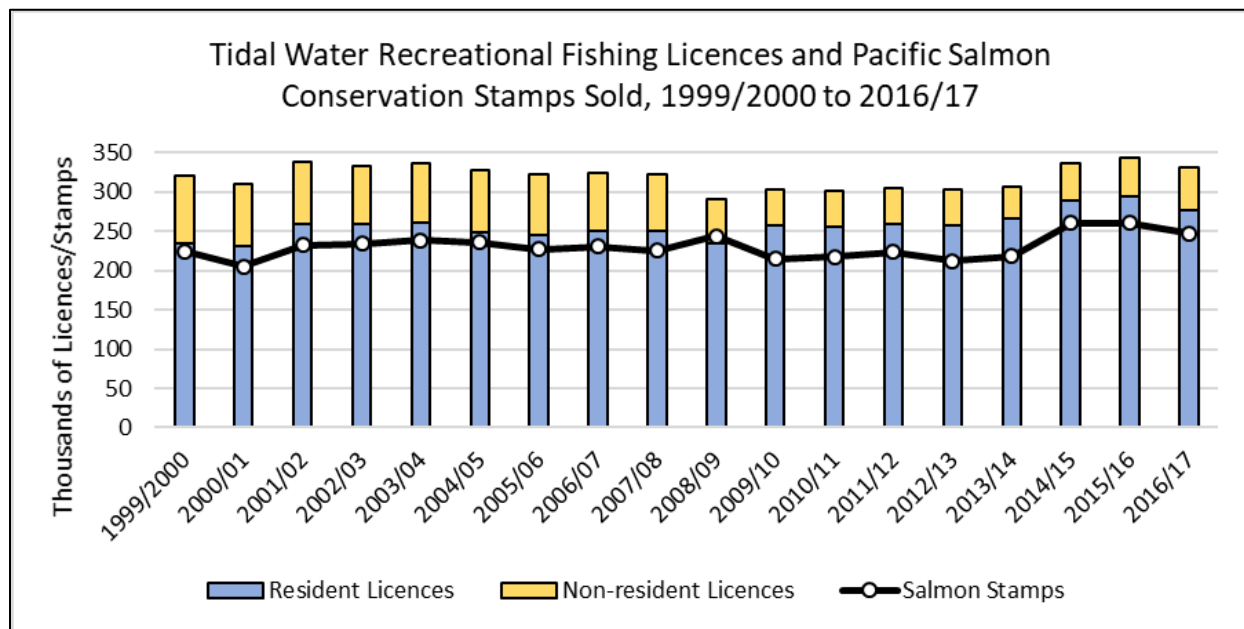
4.2 RECREATIONAL FISHERY

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 non-quantified benefits to the individual participants as well as contribute directly and indirectly to the economy through fishery related expenditures. This section focuses on economic activity rather than the economic benefits to individual anglers or businesses. Catch levels in the recreational fishery are managed using area specific openings and retention levels.

² Details of concluded final agreements can be found at <https://www.aadnc-aandc.gc.ca/eng/1402584983606/1402585060047>.

Based on the most recent Survey of Recreational Fishing in Canada (2010), 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 in the South Coast that was directed toward salmon accounted for an estimated 42% of all angler expenditures, or \$289 million³.

In order to fish for salmon an angler needs either a tidal or a freshwater licence; in addition, in order to keep salmon the licence must have a Pacific Salmon Conservation (PSF) Stamp. The number of licences and stamps that can be sold is not restricted. Licence data show that the total number of licences and salmon stamps sold was relatively stable from 2001 to 2008 (Figure 4.2-1, below). Starting in 2008 there were several year over year drops in sales of licences to non-residents (i.e. anglers that did not reside in BC). Some of the drop was made up by increased sales to residents and the number of licences sold was relatively steady at the lower level until 2014. Sharp increases in the sale of licences to both residents and non-residents in the 2015/16 season resulted in the largest annual licence sales in at least 16 years. In the 2016/17 season,



sales included over 331 thousand licences and 247 thousand salmon stamps.

Figure 4.2-1 Tidal Water Recreational Fishing Licences and Pacific Salmon Conservation Stamps Sold, 1999/2000 to 2016/17

³ 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.

Source: DFO Fisheries Management Data Unit Available at: www.pac.dfo-mpo.gc.ca/fm-gp/rec/licence-permis/Stats/99tocurrent-eng.html

The Survey of Recreational Fishing in Canada provides an estimate of individual expenditures and investment for recreational fishing. This information is used when estimating the direct and indirect contribution of recreational fishing to the economy (e.g. GDP, employment). Historically, the combined tidal and freshwater fisheries of BC were the second largest recreational fisheries in Canada in terms of direct and package expenditures, and third largest in terms of investments (DFO 2012). 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 totaled \$139,772,544 (2010 dollars). This number understates the contribution of non-resident tidal water anglers to the overall economy, however, as it only includes expenditures directly attributable to their fishing experience⁴. Fishing opportunities in BC's tidal waters draw Canadian and international tourists to the province: of 47,269 non-resident anglers surveyed in 2010, 40% reported that they would not have come to British Columbia at all if there had been no opportunities for tidal water angling⁵. A further 19% would have shortened their stay in the province.

⁴ The British Columbia's Fisheries and Aquaculture Sector (BC Stats 2013) report, which calculates direct and indirect economic activity, indicates 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.

⁵ 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.

| | 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 | \$ 68,195,312 | \$ 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 |

Figure 4.2-2 Recreational Fishing Direct and Package Expenditures and Investments, in constant (2010) dollars

Source: Survey of Recreational Fishing in Canada (DFO, multiple years)

Figure 4.2-2 (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 BC economy, the rate of growth is slowing: total expenditures and investments grew by nearly 15% from 2000 to 2005, but by only 2% from 2005 to 2010. This slowdown is due mainly to a drop in visits (and therefore expenditures) to BC by non-resident anglers, particularly other (i.e. international) non-resident anglers whose total expenditures in BC 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 BC residents are now the primary consumers of fishing trip packages in the province.

Additional information on the history and vision for recreational fisheries can be found in the document "Vision for Recreational Fisheries in BC":

<http://www.pac.dfo-mpo.gc.ca/consultation/smon/sfab-ccps/docs/rec-vision-eng.pdf>

4.3 COMMERCIAL FISHERY

4.3.1 HARVEST SECTOR

In BC, the salmon fishery is a limited access fishery, mostly managed as a competitive fishery⁶; however, several parts of the fishery are operated under individual quotas. Since 2005, five areas using seine, troll or gill net gear have participated in demonstration fisheries with alternative implementations of individual quotas or pooling arrangements. In addition, there have been several commercial First Nations economic opportunity and demonstration fisheries. Commercially-harvested salmon supports BC's seafood processing sector, much of which is ultimately exported, bringing new money into the province.

Between 2012 and 2017, salmon contributed an average of 16% of the landed value and 14% of the total volume of BC wild caught seafood (DFO Official Catch, 2012-2017). The real value, in 2017 constant dollars (2017\$) ranged from a high of \$123.0 million in 2014 to a low of \$33.3 million in 2012 ([Figure 4.3-1](#)).

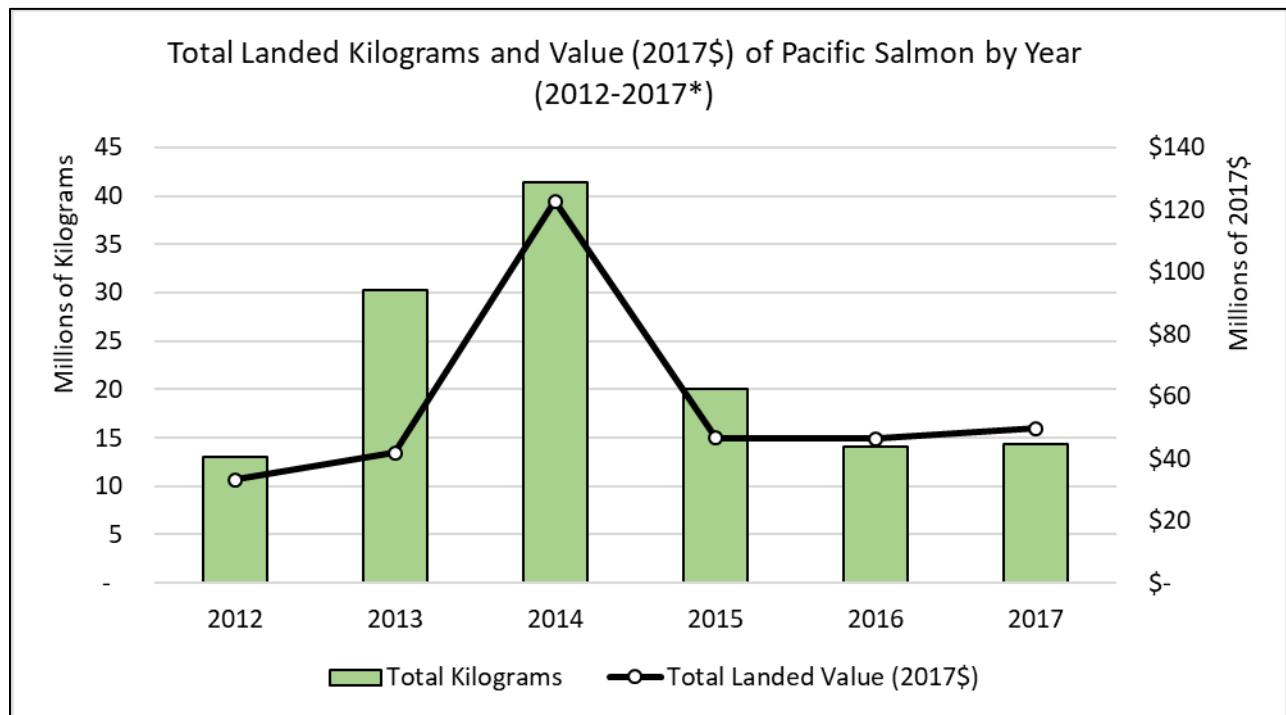


Figure 4.3-1 Total Landed Kilograms and Value (2017\$) of Pacific Salmon by Year (2012-2017*)

⁶ Other names for this style of fishery include derby and Olympic style fishery

*Estimates for 2017 are to be treated as preliminary.

Source: DFO Official Catch matched to the best available price from sales slips.

Note: Salmon landed value estimates may differ slightly from other sources due to varying price estimates. Prices used here are “best available” based on matching criteria using date, gear and area.

On average over that period, Sockeye was the most important species in terms of landed value, followed by Chinook and Chum ([Figure 4.3-2](#)).

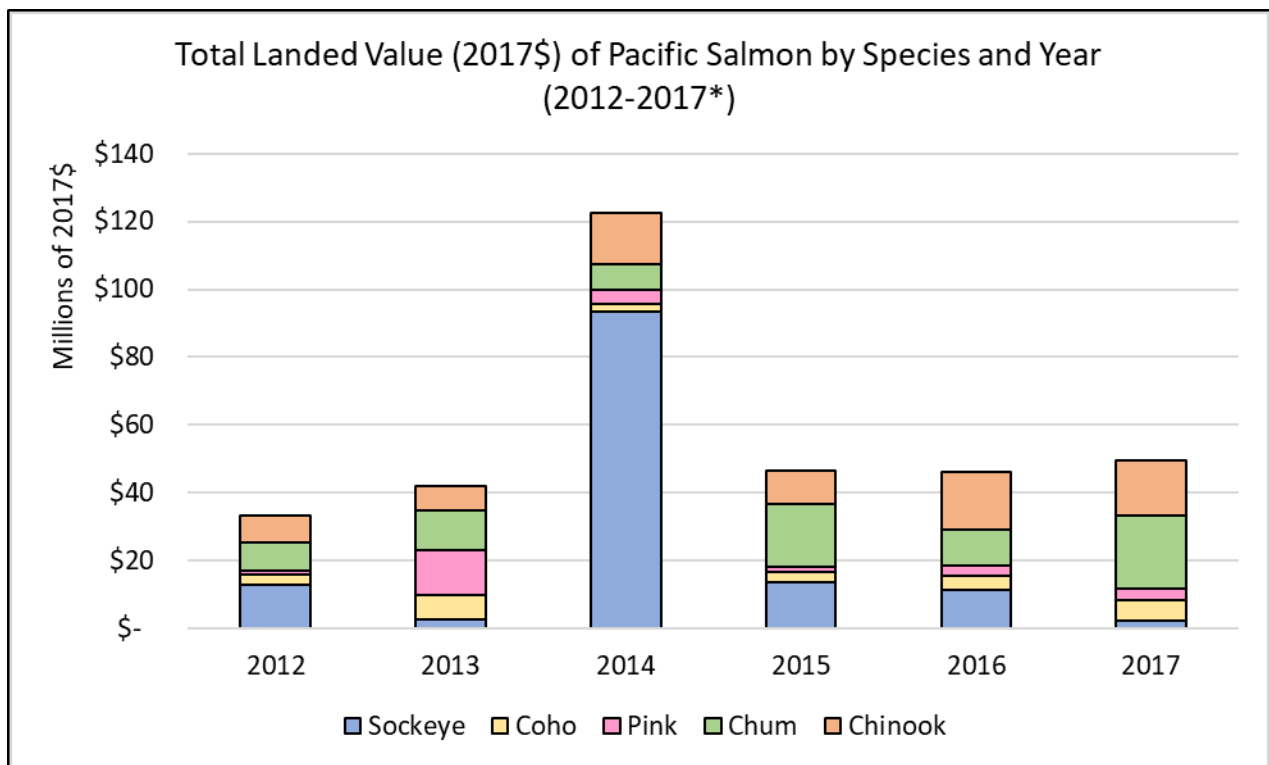


Figure 4.3-2 Total Landed Value (2017\$) of Pacific Salmon by Species by Year (2012-2017*)

Source: DFO Official Catch matched to the best available price from sales slips.

Note: Salmon landed value estimates may differ slightly from other sources due to varying price estimates. Prices used here are “best available” based on matching criteria using date, gear and area.

Between 2012 and 2017, the North Coast fishery was responsible for an average of 52% of the volume of salmon landings and 53% of the landed value. Over the previous 6 years, the landed value has an overall upward trend although it is highly variable. In 2013 salmon experienced good revenues from Pink and Coho while 2014 was noted for good Sockeye and Chinook revenues. In 2017 Chinook and Chum brought the highest landed values of all salmon species.

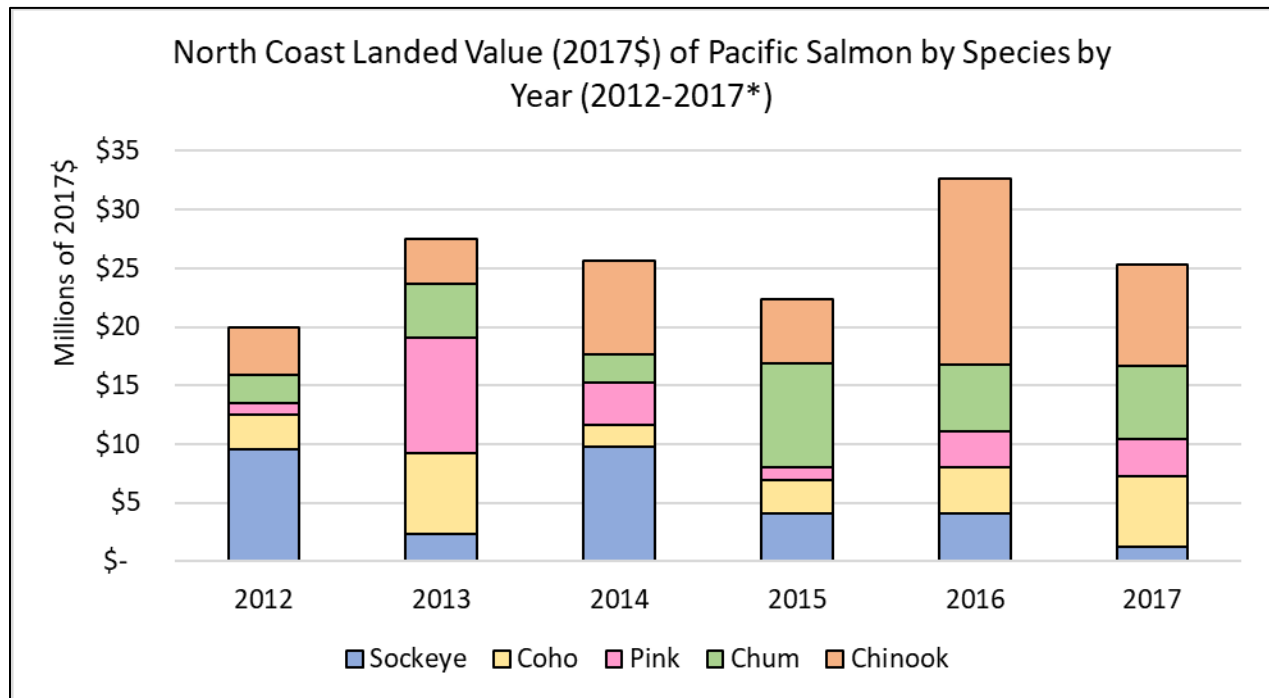


Figure 4.3-3 North Coast salmon value by species, 2012-2017* (in 2017\$)

Source: DFO Official Catch matched to best available price from sales slips.

*Estimates for 2017 are to be treated as preliminary.

Note: Salmon landed value estimates may differ slightly from other sources due to varying price estimates. Prices used here are “best available” based on matching criteria using date, gear and area. This may result in a difference in landed value compared to the use of a simple province-wide average price. “Salmon” here refers to salmon harvested by commercial fisheries and does not include aquaculture production.

Salmon licence values declined steadily from 2005 to 2010, reflecting poor returns to the fleets (Nelson, various years). Seine licences have recovered somewhat since then, while gillnet and troll licences have been steady with troll showing improvements in 2014 and 2015. A 2007 snapshot 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 (Nelson, 2009); this was reiterated in the 2009 financial snapshot (Nelson, 2011). The results also suggested a positive financial performance for the troll fleet, which was enhanced further by participation in other fisheries. 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. The salmon fleet's financial performance is best reviewed over several years, given the fisheries significant annual swing in harvest. Detailed tables for each fleet (gill net, seine and troll) are available within both documents (Nelson, 2009 & 2011), and are available by licence area (Gislason, 2011).

The Department's general approach is that Aboriginal commercial harvest opportunities are managed using the same harvest decision guidelines as the commercial fishery. Aboriginal commercial harvest opportunities may be implemented with different times, areas, gears and regulations consistent with the overall management approach for the commercial fishery. The landings and value attributable to Aboriginal commercial harvest are included in the values reported for the commercial sector above and this includes inland fisheries. Participation in the commercial salmon fishery provides socio-economic benefits to Aboriginal communities and individuals from fishery revenues and employment-generated income.

Five Nuu-chah-nulth First Nations located on the West Coast of Vancouver Island - Ahousaht, Ehatesaht, Hesquiaht, Mowachaht/Muchalaht, and Tla-o-qui-aht (the T'aaq-wiihak First Nations) - have aboriginal rights to fish for any species of fish, with the exception of geoduck, within their Fishing Territories (their Fishing Territories are located within portions of Pacific Fishery Management Areas (PFMA) 25/125, 124, 26/126 and all of PFMA 24) and to sell that fish.

Aboriginal participation within the commercial salmon fishery occurs under four licence categories (A, A-I, N, and F). An Aboriginal vessel owner may elect to pay a reduced fee for a category A licence; thereafter only an Aboriginal may own the vessel. Since 2005, an average of 14% of commercial licences in the North Coast were reduced fee licences, while the coast-wide average is 11%. Licence categories N and F provide similar fishing privileges as A licence eligibilities, but are non-transferable and are intended to be held permanently for the benefit of the recipient First Nations communities. Both licence categories allow Aboriginal communities to designate vessels and individual fish harvesters to carry out the fishing. The Northern Native Fishing Corporation holds 254 gillnet licences (Category N), of which 193 are in the North Coast.

Since 1994, DFO has acquired a total of 492 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, see section 10.3), the Allocation Transfer Program (ATP), the Pacific Integrated Commercial Fisheries Initiative (PICFI), First Nations Inland Demonstration Fisheries projects, Economic Opportunity Fishery arrangements and treaties. As of January 2018, 158 communal commercial salmon licence eligibilities were issued to First Nations under the AFS and ATP, 46 were issued under PICFI, 255 were used to offset First Nations demonstration fisheries projects and Economic Opportunity fishery arrangements with First Nations in the lower Fraser, Somass, Skeena and Nass Rivers, and 33 were used for treaties or other contingencies.

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. Additional information is provided in section 0.

4.3.2 PROCESSING SECTOR

In the last five years, 2012-2016, wild salmon accounted for an average of 25% of the total wholesale value from the processing of wild caught seafood in BC (SYIR, 2012-2016).

The latest study on linkages between seafood harvesting and processing prepared by GS Gislason & Associates in August 2017 allows estimation of the total labour wages in salmon processing sector in 2016, per salmon species. Applying this to 2017 DFO logbook information, processing of salmon species delivered about \$4.4M (Chum), \$0.4M (Sockeye), \$1.5M (Pink), \$0.7M (Chinook), \$0.8M (Coho) in processing sector labour wages.

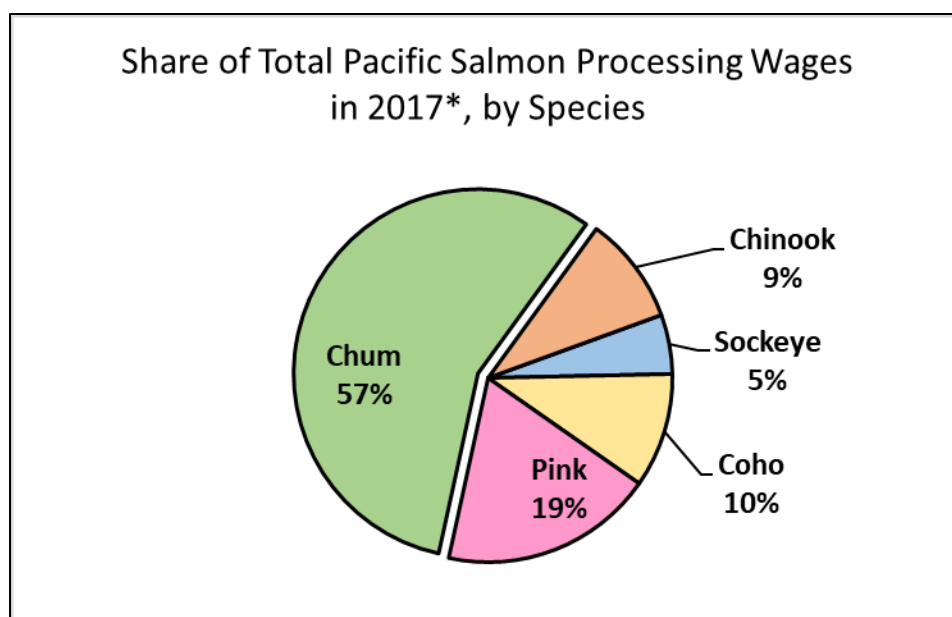


Figure 4.3-4 Share of the total value of processing wages in 2017 (per salmon species) Source: GS Gislason and Associates (2017), DFO Official Catch

*Estimates for 2017 are to be treated as preliminary.

While Chum is the most processed salmon species by volume and total value of processing sector labour wages among all BC wild salmon, Sockeye remains the most labour intensive species in processing with a labour intensity of about 34 hours per metric tonne (MT) (GS Gislason & Associates, 2017).

The GS Gislason 2017 study also indicates that salmon processing is frequently pursued in different region than the area where landings are loaded off the fishing vessels. While Chinook landings occur mostly on the North Coast, its processing happens mainly in the Lower Mainland (about 65% of all processed Chinook). Similarly, landings of Coho also happen mainly on the North Coast (80%), but its processing is pursued mainly in the Lower Mainland (75%). Pink salmon is landed mainly in the North Coast (about 60%) but processed in the North Coast and Lower Mainland (45% and 40%, respectively). Chum landings (63%) and processing (75%) occurs mostly in Lower Mainland. Sockeye landings and processing occurs mostly on Vancouver Island (58% and 55%, respectively) (GS Gislason & Associates, 2017).

4.4 EXPORT MARKET

The province of British Columbia benefits from strong seafood exports that in 2017 were valued at about \$1.3 billion, an 3% decrease when compared to 2016 ⁷. This total value was realized via combination of seafood that was supplied by domestic wild harvest and aquaculture as well as raw seafood imports (Sector Snapshot 2017: BC Agrifood & Seafood). Chum, Chinook and Sockeye salmon were among the most widely exported wild salmon species in 2017 (by volume). They constituted 50%, 25% and 8% of the total volume of wild salmon exports from BC respectively. In 2017 Chum was shipped to 28 countries, with US and China being the biggest importers of this salmon species (by value). Pink salmon was exported to 14 countries, with China and Thailand constituting the most significant importers (by value), and Sockeye was exported to 14 countries, with the US and Japan with being the biggest Sockeye importers (by value).

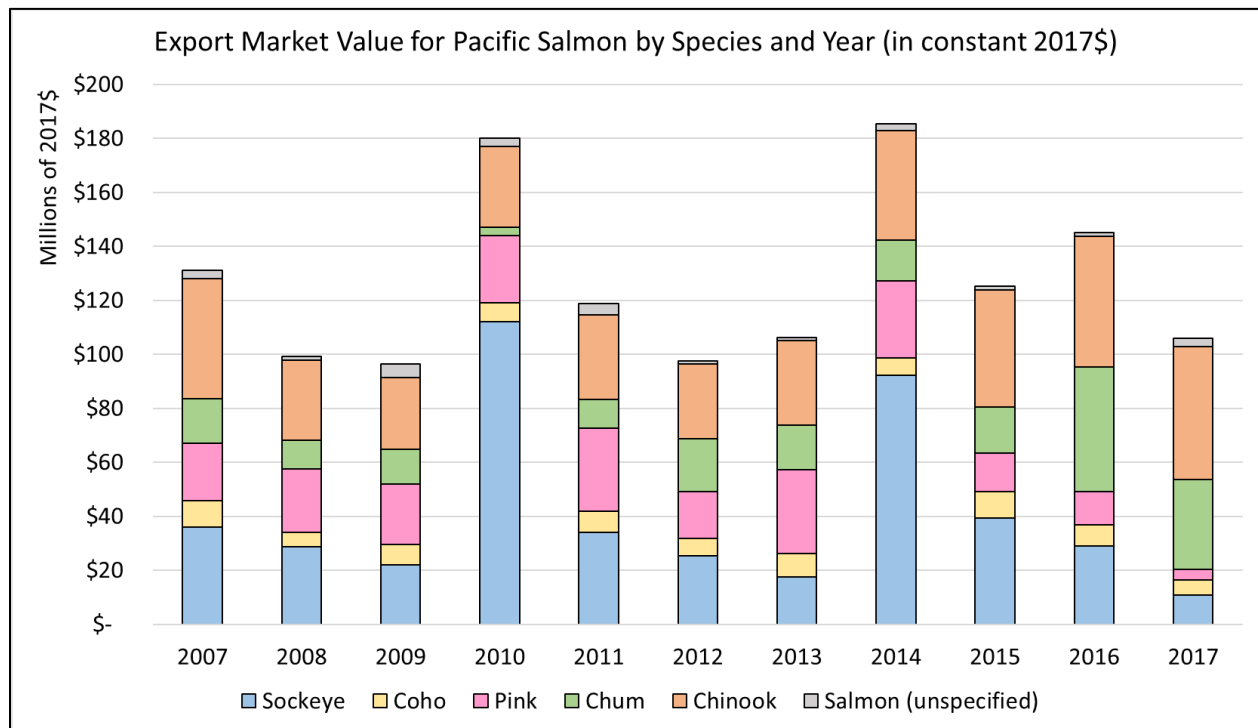


Figure 4.44-1 Total value of wild salmon exports (in 2017 constant dollars), 2007-2017

Source: Statistics Canada EXIM database accessed on January 21, 2019.

⁷ BC Ministry of Agriculture - Agriculture, Seafood & Agrifood Snapshot 2016, 2017:
<https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/statistics/industry-and-sector-profiles>

Note: this total includes all exports of wild Pacific salmon and excludes exports of all farmed Pacific salmon. There might be slight differences in total export value when comparing exports in previous versions /previous years of IFMP due to changing products definitions in EXIM data. In this data only Pacific salmon was included.

Overall, during the five-year period (2012 to 2017), BC exported wild salmon to 63 countries. The US accounted for about 53% of the total export value in that period, followed by Japan (10%) and China (7%). The United Kingdom was the fourth biggest individual importer of BC wild salmon in that period (7%). For more details, please refer to Figure 4.4-2 below.

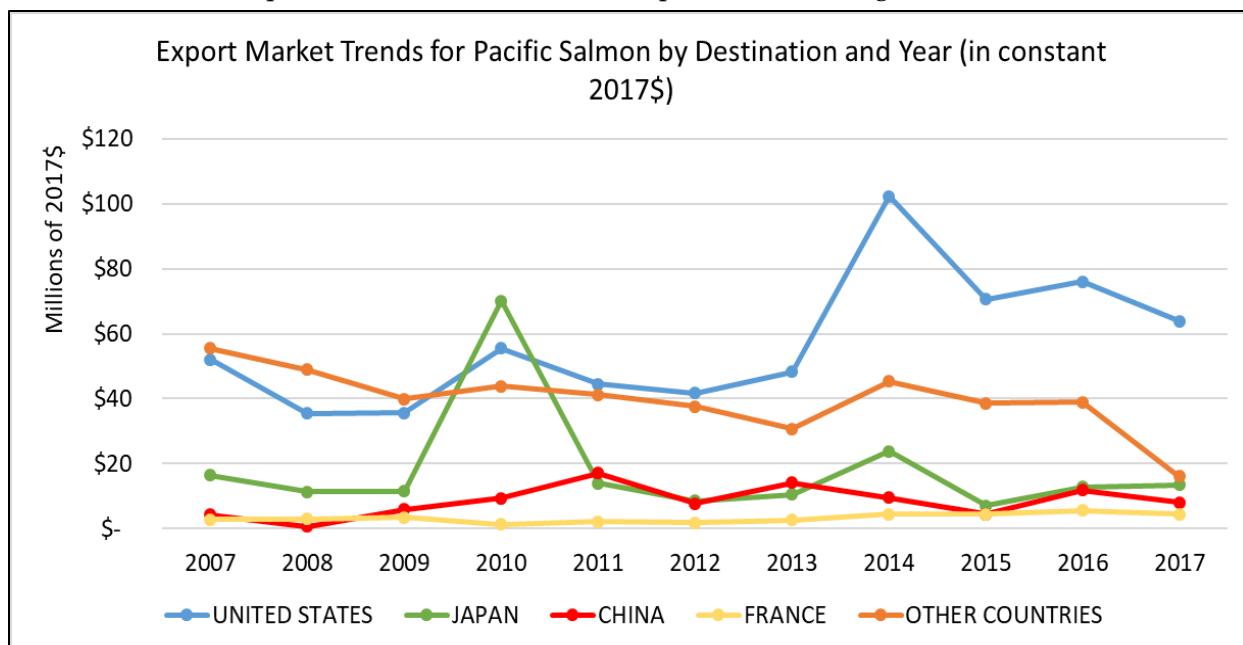


Figure 4.44-2 Total value of wild salmon exports from BC per main importers, 2007-2017 (in 2017\$)

Source: Statistics Canada EXIM database accessed on January 21, 2019.

The value of all wild caught salmon exports in 2007-2017 averaged \$126M (in 2017\$). In that period, on average, Sockeye accounted for about 29% of this value; Chum for 15%, Pink for 17%; Chinook (spring) for 30%; Coho for about 6% and 2% originated from the sale of unspecified salmon.

Figure 4.4-3 below shows the proportions of Pacific Salmon exported by value (in 2017\$) by destination country in 2017. In 2017, approximately \$105.9m worth of wild Pacific salmon was exported from BC and the Yukon. Of this, about 60% of the total export value of Pacific salmon is attributable to the United States (\$63.8m), 13% to Japan (\$13.5m), 8% to China (\$8.1m), 4% to France (\$4.5m), 3% to Italy (\$3.2m), and the remaining 12% to all other countries (\$12.9m).

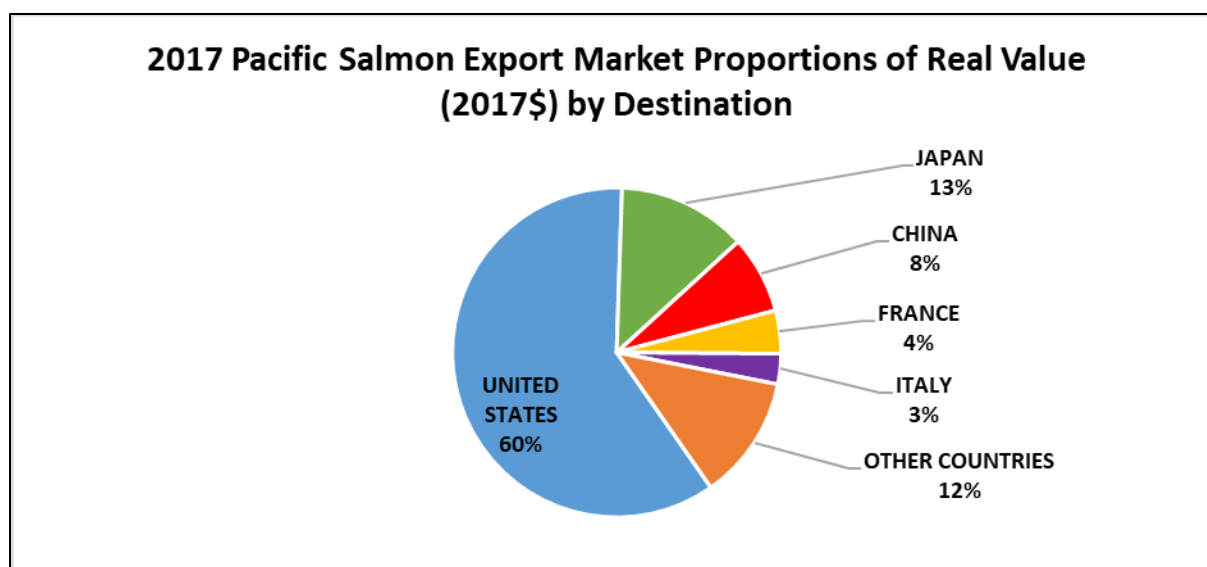


Figure 4.44-3 Proportions of total value of wild salmon exports from BC by main destination countries in 2017 (in 2017\$)

Source: Statistics Canada EXIM database accessed on January 21, 2019.

REFERENCES:

- BC Ministry of Agriculture (BCMOA). 2016, 2017. Sector Snapshot: B.C. Seafood – 2016, 2017. https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/statistics/industry-and-sector-profiles/sector-snapshots/bc_agriculture_seafood_and_agrifood_sector_snapshot_2016.pdf
- BC Ministry of Environment (BCMOE). Various years. British Columbia Seafood Industry Year in Review. <http://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/statistics/industry-and-sector-profiles>
- BC Stats. 2013. British Columbia's Fisheries and Aquaculture Sector, 2012 Edition. <http://www.bcstats.gov.bc.ca/StatisticsBySubject/BusinessIndustry/FisheriesAquacultureHuntingTrapping.aspx>
- Fisheries and Oceans Canada (DFO). Various years. Survey of Recreational Fishing in Canada. <http://www.dfo-mpo.gc.ca/stats/rec/canada-rec-eng.htm>
- Gislason, G. 2011. The British Columbia Salmon Fleet Financial Profile 2009. <http://waves-vagues.dfo-mpo.gc.ca/Library/343812.pdf>

- Gislason, G and Associates. 2017. Linkages between seafood harvesting and processing, pp.1-7.
- 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/>
- Nelson, Stuart. 2009. Pacific Commercial Fishing Fleet: Financial Profiles for 2007. <http://www.dfo-mpo.gc.ca/Library/343814.pdf>
- Nelson, Stuart. 2011. Pacific Commercial Fishing Fleet: Financial Profiles for 2009. <http://www.dfo-mpo.gc.ca/Library/343762.pdf>

5 MANAGEMENT ISSUES

5.1 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.

5.1.1 WILD SALMON POLICY

The goal of Canada's Policy for Conservation of Wild Pacific Salmon (WSP), which was released in 2005, 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. To further communicate the work the Department is doing in support of the policy, on October 11, 2018, Canada's Minister of Fisheries and Oceans and the Canadian Coast Guard – the Honourable Jonathan Wilkinson - released the *Wild Salmon Policy 2018-2022 Implementation Plan*. This collaboratively developed plan was consulted on broadly throughout fall 2017, and lays out seven overarching approaches to implementation and 48 specific activities that will be achieved over the next five years. The plan is organized under three key themes: Assessment; Maintaining and Rebuilding Stocks; and Accountability. In 2019, the first annual report on progress will be released.

For a copy of the *Wild Salmon Policy*, the *Wild Salmon Policy 2018-2022 Implementation Plan*, *Highlights* of work done from 2005-2017, and information on what we heard during consultations and response, please see: <http://www.pac.dfo-mpo.gc.ca/fm-gp/species-especes/salmon-saumon/wsp-pss/index-eng.html>

5.2 INTERNATIONAL COMMITMENTS

5.2.1 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 (PST). The PST includes several “fishing chapters” contained in Annex IV which set out

the specific conservation and harvest sharing (allocation) arrangements for migratory salmon stocks subject to the Treaty. These chapters are critical to the functioning of the Treaty and are periodically renegotiated by the Parties, normally on a 10-year cycle. The bilateral Pacific Salmon Commission (PSC), established under the Pacific Salmon Treaty, consists of four Commissioners and four Alternates from each country, supported by several bilateral panels and technical committees. The PSC provides regulatory and policy advice as well as recommendations to the Governments of Canada and the United States (U.S.) 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 Secretariat staff.

Coded-wire tag (CWT) data are essential to the management of Chinook and Coho salmon stocks under the Pacific Salmon Treaty. On August 13, 1985, the United States and Canada entered into a 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. In addition, alternatives to CWT data have been explored by the PSC, including the feasibility of parentage-based genetic tagging. Results of this work may be found at:

<http://www.psc.org/pubs/pbt/pbtreport.pdf>

In August 2018, the PSC recommended new provisions, under Annex IV of the PST, to the Governments of Canada and the U.S. for review and ratification. Both governments agreed to the provisional application of the new agreements as of January 1, 2019 while the ratification process was completed. Effective May 3, 2019, the Annex IV amendments came fully into force through the exchange of diplomatic notes between Canada and the U.S., and will remain in place for 10 years.

The renewed chapters are: Chapter 1 (Transboundary Rivers), Chapter 2 (Northern British Columbia and Southeast Alaska), Chapter 3 (Chinook), Chapter 5 (Coho) and Chapter 6 (Chum). Chapter 7 (General Obligations) does not have an expiry date; however, the PSC recommended minor updates to “Attachment E” containing general provisions on salmon habitat. Chapter 4 (Fraser River Sockeye and Pink) does not expire until December 31, 2019 and negotiations are underway within the Commission.

In addition to direct involvement and representation in the PSC process, the Department consulted extensively with First Nations and stakeholders leading up to, and throughout, the negotiations. Moving forward, DFO will continue to schedule consultation sessions and meetings to identify, discuss, and help mitigate potential concerns regarding the agreement.

Key elements from the renewed Chapters, under Annex IV, are identified, below:

Chapter 2 (Northern Boundary): Covers marine fisheries for sockeye, pink and chum stocks in Northern B.C. and Southeast Alaska, including the Nass and Skeena rivers. The new chapter includes a joint technical review of escapement goals for Nass River and Skeena River sockeye, new management measures in Alaska to reduce harvest impacts on Canadian Nass and Skeena sockeye in years of low abundance, a joint technical review of the impacts of the Alaskan District 4 pink salmon fishery on Skeena and Nass sockeye abundances, and a joint review of the effectiveness of the new chapter after five years (to inform a decision by the Commission as to whether further changes may be required for the balance of the regime). This chapter along with Chapter 3 (Chinook) and Chapter 5 (Coho), govern fisheries covered in the North Coast Salmon Integrated Fisheries Management Plan.

Chapter 3 (Chinook Salmon): Provides a framework for bilateral conservation and coordination of chinook fisheries coastwide from Oregon to Alaska. In response to conservation concerns for chinook in both countries, several changes were made to the chapter, including targeted harvest reductions in both Canadian and U.S. fisheries, adoption of a new metric to manage and evaluate performance in specific Canadian and U.S. individual stock-based management or “inside” fisheries (the calendar year exploitation rate), a renewed commitment (and investment) in the coastwide stock assessment program for chinook (including the Coded-Wire Tag program), a 10-year Catch and Escapement Indicator Improvement program to provide more robust and timely information for managing chinook, and enhanced fishery monitoring.

The harvest reductions are:

- For the U.S., up to a 7.5 per cent reduction in the Southeast Alaska aggregate abundance-based management or “outside, mixed-stock” fishery, as well as reductions of up to 15 per cent from 2009-2015 harvest levels for individual stocks in Washington and Oregon individual stock-based management fisheries.
- For Canada, up to a 12.5 per cent reduction in the West Coast Vancouver Island aggregate abundance-based management fishery and reductions of up to 12.5 per cent from 2009-2015 levels in Canadian individual stock-based management fisheries.

5.3 OCEANS AND HABITAT CONSIDERATIONS

5.3.1 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.

On June 15, 2017, Bill C-55 was proposed to amend the Oceans Act, to facilitate the Marine Protected Area designation process, without impacting sound science or public opportunity for input. The changes would allow for interim ocean protection during the 7-10 year MPA designation process, require the application of the precautionary principle in decision making, and strengthen enforcement powers and fines to align with current provisions in other legislation, such as the Environmental Enforcement Act.

For more information on the Oceans Act and Canada's Ocean Strategy, please visit:

<http://www.dfo-mpo.gc.ca/oceans/publications/cos-soc/page1-eng.html>

For information on the proposed amendments to the Ocean's Act, please visit: <http://www.dfo-mpo.gc.ca/oceans/conservation/act-loi-eng.html>

5.3.2 CANADA'S MARINE AND COASTAL AREAS CONSERVATION MANDATE

In October 2017, the Government of Canada announced that it has reached its first milestone of protecting 5% of marine and coastal areas. The federal government remains committed to protecting 10% of Canada's marine and coastal areas by 2020. The 2020 target is both a domestic target (Canada's Biodiversity Target 1) and an international target as reflected in the Convention on Biological Diversity's Aichi Target 11 and the United Nations General Assembly's 2030 Agenda for Sustainable Development under Goal 14. The 2017 and 2020 targets are collectively referred to as Canada's marine conservation targets. More information on the background and drivers for Canada's marine conservation targets is available <http://www.dfo-mpo.gc.ca/oceans/conservation/index-eng.html>.

Where applicable, management measures established for Salmon have been identified to contribute to Canada's marine conservation targets. More information on these management measures and their conservation objectives are provided in the following sections.

The Cold-water Coral and Sponge Conservation Strategy is available on the internet at:

www.pac.dfo-mpo.gc.ca/oceans/protection/oth-aut-eng.html

Pacific Canada's State of the Ocean Annual Reports are available on the internet at:

<http://dfo-mpo.gc.ca/oceans/publications/index-eng.html#state-ocean>

5.3.3 PACIFIC NORTH COAST INTEGRATED MANAGEMENT AREA

Endorsed in February 2017, the Pacific North Coast Integrated Management Area (PNCIMA) Plan was developed, in collaboration with the Province of British Columbia, First Nations and stakeholders to help coordinate various ocean management processes and to complement existing processes and tools including IFMPs. High level and strategic, the plan provides direction on 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 an ecosystem-based management (EBM) framework for PNCIMA that has been developed to be broadly applicable to 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.

The endorsement of the PNCIMA plan supports the Government of Canada's commitment to collaborative oceans management for the Pacific North Coast and provides a joint federal-provincial-First Nations planning framework for conservation and the management of human activities in the Pacific North Coast. The plan includes marine protected area network development as a planning priority. An electronic copy of the plan is available online at:

<http://www.pncima.org>

5.3.4 MARINE PROTECTED AREA NETWORK PLANNING

The Oceans Act mandates DFO's Minister with leading and coordinating the development and implementation of a national network of marine protected areas (MPAs). Nationally, MPA Network planning is proceeding in four priority bioregions under the National Framework for Canada's Network of Marine Protected Areas, including the Northern Shelf Bioregion (NSB). The NSB extends from the top of Vancouver Island (Quadra Island/ Bute Inlet) and reaches north to the Canada - Alaska border. This bioregion has the same footprint as PNCIMA.

In the Pacific region, the Department and other federal agencies are collaborating with the Government of B.C. and Pacific North Coast First Nations to develop a MPA network for the NSB. The planning process in the NSB is guided by the Canada-BC MPA Network Strategy (2014) and the National Framework for Canada's Network of Marine Protected Areas. Stakeholders and local governments are participating in the planning process through advisory committees at regional and sub-regional scales, workshops, and sector meetings.

Through the Network Action Plan, the MPA Network planning process will identify areas for protection. These areas will be established and implemented on a priority basis through a variety of legislative or regulatory tools.

More information on MPA Network Planning can be found at: <http://mpanetwork.ca>

Marine Protected Areas (MPAs)

DFO is also responsible for designating Marine Protected Areas (MPAs) under Canada's *Oceans Act*. Under this authority, DFO has designated three MPAs in the Pacific Region.

MPA regulations and management plans articulate any restrictions on activities taking place within the MPA, where applicable.

Endeavour Hydrothermal Vents (EHV) MPA: The EHV MPA was designated in 2003. The hydrothermal vents lie in waters 2,250 m deep 250 km southeast of Vancouver Island. There is occasional commercial fishing in the MPA, and pelagic fishing is not considered to be in conflict with the objectives of the MPA. Any licensed fishing in the MPA takes place very near the ocean surface and will continue as it does not significantly impact the hydrothermal vents ecosystem. More information can be found online at: <http://www.dfo-mpo.gc.ca/oceans/mpa-zpm/endeavour-eng.html>

SGaan Kinghlas-Bowie Seamount (SK-B) MPA

The SK-B MPA, designated under Canada's *Oceans Act* in 2008, is 180 km west of Haida Gwaii rising from a depth of over 3,000 m to within 24 m of the sea surface, making it one of the shallowest seamounts in the north Pacific, and the shallowest in Canada. The MPA comprises the SGaan Kinghlas – Bowie, Hodgkins and Davidson Seamounts of the Kodiak-Bowie seamount chain and has a total area of approximately 6,131 square kilometres.

The SK-B MPA has been established to conserve and protect the unique biodiversity and biological productivity of the area's marine ecosystem, including and the surrounding waters, seabed, and subsoil.

The MPA is cooperatively managed by DFO and the Council of the Haida Nation (CHN) through the SK-B Management Board (the Board), which was established under a Memorandum of Understanding (MOU), signed in 2007. The Board has equal representation from DFO and the CHN and operates on a consensus basis in developing recommendations to Canada and the Haida Nation on the management and planning of the MPA. Under the MOU, the Board is mandated to develop a management plan for the MPA. To fulfil this mandate, the Board collaborates with stakeholders by requesting and considering advice from the integrated, cross sector SK-B Advisory Committee.

Since 2018, DFO and the CHN, have been co-developing the SK-B MPA Management Plan which is now near completion. The Plan is intended to guide the conservation and protection of the SK-B Seamount ecosystem and support the development of a monitoring plan for the MPA. Key elements of the Plan include: cooperative governance, management framework, conservation and management goals and objectives; and implementation priorities.

Commercial fishing activities within the MPA have been managed through the Integrated Fisheries Management Plan process. In January 2018, the Government of Canada and the Haida Nation agreed to increase the level of protection at the SK-B MPA by closing all bottom-contact fishing. This closure shows a precautionary management approach to protection of sensitive benthic habitats in support of the MPA objectives. This decision has resulted in the MPA being closed to all commercial fishing activities. The decision also applies to bottom-contact recreational and aboriginal fisheries. This decision also aligns with the DFO recent decision to close bottom contact fishing on all seamounts in the Offshore Pacific Area of Interest (AOI) and manage impacts to coral and sponges in the Hecate Strait and Queen and Charlotte Sound Glass Sponge Reefs Marine Protected Areas.

Hecate Strait and Queen Charlotte Sound Glass Sponge Reefs MPA: The Hecate Strait and

The HS/QCS MPA, designated under the *Oceans Act* in February 2017, is located in the Northern Shelf Bioregion of the Pacific Region, southeast of Haida Gwaii, North and South of the entrance to the Douglas Channel. The reefs are made up of large colonies of glass sponges and are estimated to be 9,000 years old. They are located at depths of 140 m to 240 m below the surface. The MPA is comprised of three individual areas known as the Northern Reef, the two Central Reefs, and the Southern Reef. Together these three areas cover approximately 2,410 km².

The HS/QCS MPA has been established to conserve the biological diversity, structural habitat, and ecosystem function of the glass sponge reefs. The slow growth and fragility of these sponges make the reefs particularly vulnerable to damage and disturbance since recovery may take tens to several hundreds of years. Due to the highly sensitive nature and structure of the reefs, human activities in and around the reefs could pose a risk to the structural habitat,

biological diversity and ecosystem function of the reefs. Each glass sponge reef has a Core Protection Zone (CPZ) (two CPZ in the Central Reef), a Vertical Adaptive Management Zone (VAMZ), and an Adaptive Management Zone (AMZ).

The CPZ contain the sponge reefs and are designed to provide the highest level of protection to the reefs. The Core Protection Zone consists of the seabed, the subsoil to a depth of 20m and the water column above the seabed to a depth of 100 m below the sea surface for the Northern Reef, 120 m for the Central Reef (Zones A and B), and 146 m for the Southern Reef. The VAMZ consist of the water column that extends above the Core Protection Zones to the sea surface. The AMZ consist of the seabed, subsoil and waters of the Marine Protected Areas (i.e., Northern, Central, and Southern Reefs) that are not part of the CPZ or the VAMZ.

The HS/QCS MPA Regulations, it is prohibited to:

carrying out any activity that disturbs, damages, destroys or removes any living marine organism or any part of its habitat or is likely to do so; or carrying out any scientific research or monitoring, or an educational activity, unless it is part of an activity plan that has been approved by the Minister.

There are exceptions to these prohibitions that identify activities that may be allowed to occur in the MPA in certain zones. The following activities are allowed in the MPA:

Certain fishing activities in the AMZ and VAMZ. Fishing activities will be managed in accordance with integrated fisheries management plans, annual variation orders, regulations and license conditions in a manner consistent with the conservation objective of the MPA. In order to protect the sponge reefs, additional fisheries management measures for bottom contact and midwater trawl fisheries are currently required throughout the MPA.);

Navigation activities throughout the MPA; however, anchoring is not allowed in the CPZ;

The laying, maintenance or repair of cables in the AMZ;

Activities carried out for public safety, public health, national defense, national security, law enforcement or in response to an emergency; and

Scientific research, monitoring and educational activities that have been approved by the Minister.

Under the HS/QCS MPA Regulations, the CPZ are closed to all commercial, recreational, and Aboriginal fishing. Anchoring and cable installation, maintenance, and repair are also prohibited in the CPZ.

Management measures under the *Fisheries Act* restricting bottom contact and mid water trawl fishing activity in the MPA were implemented as of February 21, 2017. The VAMZ and AMZ are currently closed to all commercial bottom contact fishing activities for prawn, shrimp, crab, and groundfish (including halibut), as well as for midwater trawl for hake. These closures will be in effect until further notice. For more detail on the fishery closure within the Hecate Strait and Queen Charlotte Sound Glass Sponge Reef MPA, please review the FN0198 Fishery Notice.

A management plan will be developed for the MPA and will seek to align the plan with relevant IFMPs. The management plan will be developed in collaboration with First Nations and in consideration of advice from an advisory committee, stakeholders through existing processes, and the public. This management plan will elaborate on the conservation and management objectives for the MPA and will address matters such as monitoring, enforcement and compliance.

Further details on the locations of these areas can be found in the relevant harvest plan appendices to this IFMP and at: <http://dfo-mpo.gc.ca/oceans/mpa-zpm/hecate-eng.html>.

Offshore Pacific Area of Interest: In May 2017, DFO announced a new Area of Interest (AOI) within the Offshore Pacific Bioregion off the coast of British Columbia, with the intention of making it one of Canada's largest MPAs by 2020. This Offshore Pacific AOI is an important part of DFO's national approach to achieve the Government of Canada's Marine Conservation Targets to increase Canada's marine and coastal protected areas to 10% by 2020.

The Offshore Pacific AOI is located in the southern portion of the Offshore Pacific Bioregion extending from the continental shelf break, west of Vancouver Island, to the Exclusive Economic Zone (EEZ) boundary with an area of approximately 140,000 km². At its closest point, the AOI is approximately 80 km from the west coast of Vancouver Island, but on average is 100-150 km off the coast and extends south to the Canada-US border. The Offshore Pacific AOI will protect ecologically and biologically significant areas (EBSAs), including seamounts and hydrothermal vents.

An Offshore Pacific AOI Advisory Committee has been established to provide a forum for engagement for the AOI and provide feedback on the proposed design of the potential MPA and the associated management approach. The interim conservation objective of the AOI is to contribute to the protection and conservation of the unique seafloor features and the ecosystems they support in Canada's Offshore Pacific Bioregion, and was established based on discussions with DFO Science. This interim conservation objective will be reviewed and adjusted based on consultations with DFO Science, the Province of British Columbia, Indigenous groups, and the AOI Advisory Committee, and will anchor the development of the potential MPA.

In advance of potential MPA designation, fishery closures to restrict commercial and recreational bottom-contact fishing activities within the Offshore Pacific AOI were announced in October 2017. At approximately 83,000 km² in size, the closure marked an important step towards reaching Canada's marine conservation targets of protecting 5% of Canada's marine and coastal areas by 2017 and 10% by 2020. The closure will protect and conserve unique seafloor features, including seamounts and hydrothermal vents, identified through a Canadian Science Advisory Secretariat process as well as a number of species of regional importance, including corals, sponges, and other endemic or rare species.

The closure boundary was informed by available science and input received during consultations with First Nations, federal and provincial government agencies, industry and conservation organizations, and supports the AOI's interim conservation objective of contributing to the protection and conservation of the unique seafloor features and the ecosystems they support in Canada's Offshore Pacific Bioregion. More specific details of the closure will be provided through fisheries notices shortly. These closures will focus on bottom-contact fisheries in respect of the interim conservation objective for the AOI.

More information on the Offshore Pacific AOI can be found on the internet here:

<http://www.dfo-mpo.gc.ca/oceans/aoi-si/offshore-hauturiere-eng.html>.

Race Rocks Area of Interest: Work is ongoing to consider MPA designation for the Race Rocks area off Rocky Point south of Victoria (currently designated as a Provincial Ecological Reserve).

More information on integrated management planning, Pacific Region MPAs and Pacific MPA planning under Canada's *Oceans Act* can be found at the following link:

<http://www.pac.dfo-mpo.gc.ca/oceans/index-eng.htm>

5.3.5 NATIONAL MARINE CONSERVATION AREAS (NMCARS)

GWAII HAANAS

Gwaii Haanas National Park Reserve, National Marine Conservation Area Reserve, and Haida Heritage Site is a 5000 km² land-and-sea protected area in the southern part of Haida Gwaii (formerly the Queen Charlotte Islands), approximately 100 kilometres off the north coast of British Columbia. The Haida Nation designated 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 Canada and the Haida Nation have been managing the area cooperatively since 1993. In 2010, the Gwaii Haanas marine area was designated a National Marine Conservation Area Reserve.

Gwaii Haanas is managed by the Archipelago Management Board (AMB), a cooperative body made up of three representatives of the Council of the Haida Nation and three representatives of the Government of Canada (Fisheries and Oceans Canada (1) and Parks Canada (2)). The AMB is guided by the *Gwaii Haanas Agreement* (1993) and the *Gwaii Haanas Marine Agreement* (2010), which describes how Canada and the Haida Nation will manage Gwaii Haanas cooperatively.

In November 2018, following an extensive consultation process, a new management plan for Gwaii Haanas was approved by Canada and the Haida Nation. The Gina 'Waadluxan KilGuhlGa Land-Sea-People plan includes a shared vision, guiding principles based on Haida cultural values, goals and objectives, and zoning for the land and the sea. The plan will be in place for the next decade.

To develop the zoning plan, key ecological and cultural features were identified using a range of ecological data and traditional knowledge. A set of design considerations, which included minimizing socio-economic impacts, was used to develop an initial zoning proposal. This proposal was reviewed with stakeholder groups including the commercial and recreational fishing sectors and major changes were made to the zoning plan based on advice the AMB received.

The final zoning plan includes several areas of strict protection, where commercial and recreational fishing is prohibited. The zoning plan can be found at:
<https://www.pc.gc.ca/en/pn-np/bc/gwaiihaanas/info/consultations/gestion-management-2018>.

A monitoring plan will be developed to assess the effectiveness of zoning in achieving ecological and cultural objectives. Regular monitoring within and outside of strict protection zones will illustrate ecosystem responses and facilitate adaptive management of the Gwaii Haanas marine area.

Implementation of the Land-Sea-People plan will also involve cooperative management of fisheries using an ecosystem-based management framework, and monitoring activities will be supported through partnerships. For more information on Gwaii Haanas and the Archipelago Management Board, visit www.parkscanada.gc.ca/gwaiihaanas.

Users of the Gwaii Haanas marine area should be aware that, as specified in the *Gwaii Haanas Agreement*, 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 Gwaii Haanas terrestrial area and advanced planning is necessary. Please contact the Gwaii Haanas administration office at 1-877-559-8818 for further information.

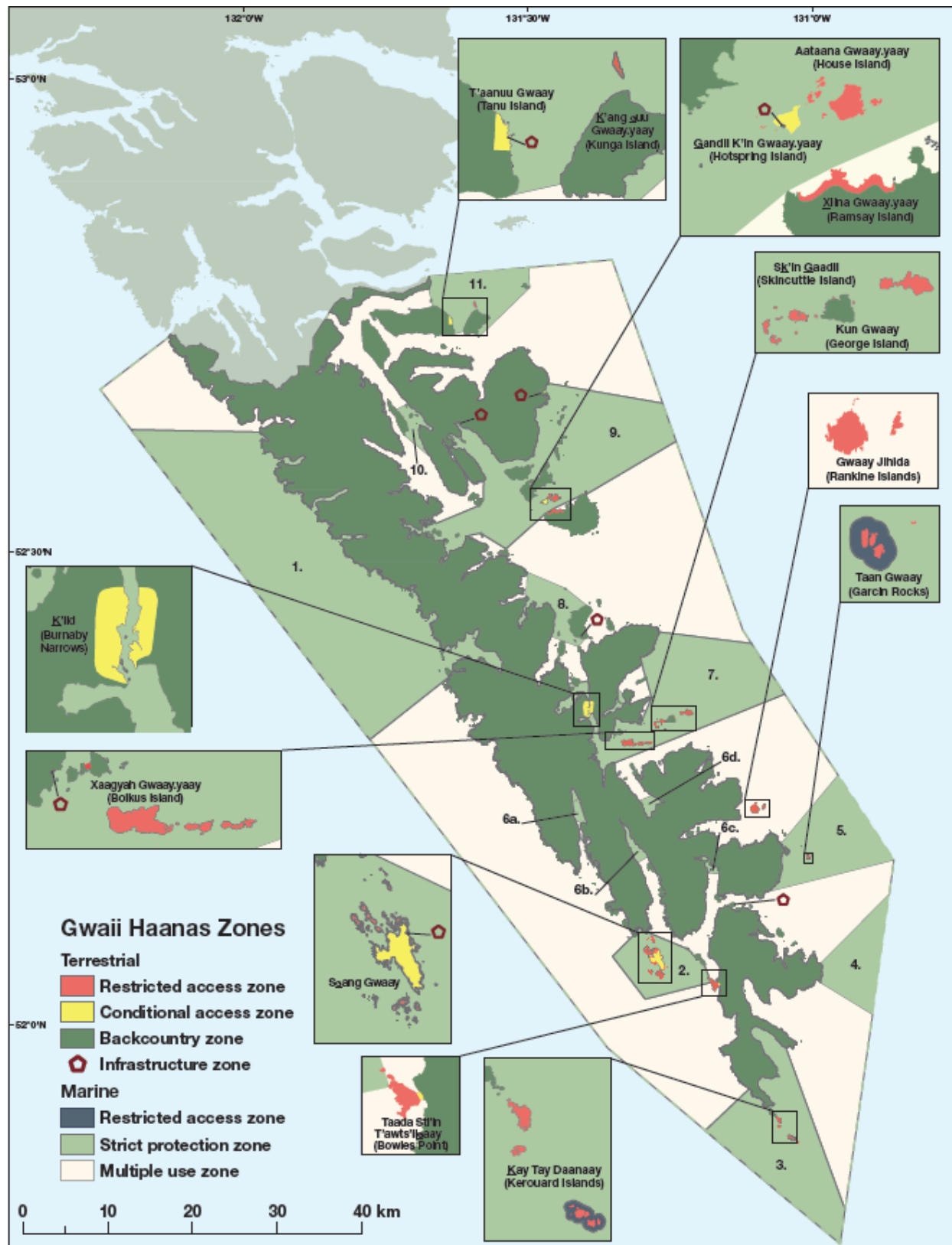


Figure 5.3-1: Gwaii Haanas National Marine Conservation Area Reserve and Haida Heritage Site (Current closures)

SOUTHERN STRAIT OF GEORGIA

Parks Canada, in partnership with the Government of British Columbia, launched a feasibility assessment for a National Marine Conservation Area Reserve (NMCAR) 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 a 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 Indigenous 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.

Parks Canada information on the proposed NMCAR in the southern Strait of Georgia is available on the internet at: <https://www.pc.gc.ca/en/amnc-nmca/cnamnc-cnnmca/dgs-ssg>

5.3.6 MARINE NATIONAL WILDLIFE AREAS

The Scott Islands Marine National Wildlife Area (NWA) is the first protected marine area established by Environment and Climate Change Canada (ECCC) under the Canada Wildlife Act. Established in 2018, the marine NWA covers 11 546 km² around the Scott Islands located off the northwestern tip of Vancouver Island. The five Scott Islands, which are already protected by the Province of British Columbia (BC), and surrounding marine environment make up one of the most productive and biologically diverse ecosystems on the Canadian Pacific coast, particularly for seabirds. The conservation objective of the marine NWA is to conserve migratory seabirds and species at risk as well as the habitats, ecosystems, and marine resources that support them.

ECCC leads the Scott Islands marine NWA planning and management and works with other federal departments with responsibilities in the marine environment including DFO, Transport Canada (TC) and Natural Resources Canada. Fishing and shipping within the marine NWA will continue to be managed by DFO and TC respectively. The Scott Islands Protected Marine Area Regulations, in conjunction with additional measures by DFO and TC to address fishing

and shipping related concerns in the area, will provide the regulatory framework for the management of human activities within the marine NWA.

The Quatsino First Nation, the Tlatlasikwala First Nation, and the Province of BC have expressed interest in participating in the collaborative management of the marine NWA, and discussions are ongoing to develop a management agreement for the area. ECCC and management partners will collaboratively develop a management plan for the area. A final management plan is expected in 2019, which will consider advice and input from an advisory committee with technical and scientific working groups, stakeholders through existing processes, and the public.

ECCC will continue to work collaboratively with DFO to implement voluntary and regulatory measures under the marine NWA management plan as well as the Integrated Fisheries Management Plans to mitigate fishing impacts. This will include measures to improve information on seabird prey habitat impacts and measures to mitigate seabird bycatch as well as initiatives by the existing ECCC-DFO-Pacific Seabird Bycatch Working Group.

In support of the conservation objectives of the Scott Islands mNWA, DFO is consulting on new regulations under the Fisheries Act to restrict certain fisheries that pose a risk to seabirds. The proposed regulations would prohibit fishing for three key forage fish species that serve as a key food source for seabirds—Pacific sand lance, Pacific saury, and North Pacific krill—as well as prohibit groundfish bottom trawling in portions of the marine NWA, consistent with existing fisheries closures. The regulations could also restrict fishing activities that may be deemed to pose a risk to the conservation objectives of the area, based on the best available science, such as salmon gill net and seine. For further information on this, please contact Aleria Ladwig at Aleria.ladwig@dfo-mpo.gc.ca.

More information on the Scott Islands marine NWA can be found at:

<https://www.canada.ca/en/environment-climate-change/services/national-wildlife-areas/locations/scott-islands-marine.html>

The Scott Islands Protected Marine Area Regulations can be found at:

<https://laws-lois.justice.gc.ca/eng/regulations/SOR-2018-119/index.html>

5.3.7 ROCKFISH CONSERVATION AREAS

Between 2003 and 2007, DFO established 164 Rockfish Conservation Areas (RCAs) in the Pacific Region for the long-term protection and conservation of a portion of inshore rockfish populations and their habitat.

DFO is currently undertaking a multi-year review of the conservation effectiveness of RCAs. A review of RCAs is timely as it has been more than ten years since they were established. In addition, some RCAs potentially could qualify as Other Effective Area Based Conservation Measures (OEABCMs) and contribute to Canada's Marine Conservation Target of protecting ten percent of marine waters by 2020.

The RCA Review has three areas of focus:

1. RCA Boundary/Location Review – an assessment of ecological attributes in RCAs to help prioritize those RCAs that may have lower conservation benefit to rockfish;
2. Risk assessment of permitted human activities in RCAs;

These two reports will be published through the Canadian Science Advisory Secretariat (CSAS) and will subsequently inform the Review.

3. Engagement with First Nations and stakeholders. The conservation effectiveness of RCAs might be improved by adjusting boundaries or through relocation, changing management measures, conducting more research, and increasing monitoring and compliance. RCAs in the Northern Shelf Bioregion have been selected for the first phase of engagement starting in the fall of 2018. Engagement in other bioregions will occur in subsequent years.

Information on Rockfish Conservation Areas is available online at: <http://dfo-mpo.gc.ca/rockfish-conservation> or for further information on this, please contact Neil Ladell at Neil.Ladell@dfo-mpo.gc.ca.

5.3.8 STRAIT OF GEORGIA AND HOWE SOUND GLASS SPONGE REEF MARINE REFUGES

Effective April 1st, 2019 all commercial, recreational and Aboriginal Food, Social and Ceremonial (FSC) bottom-contact fishing activities for prawn, shrimp, crab and groundfish, as well as the use of downrigger gear for recreational salmon trolling (restricted via Condition of Licence) are prohibited within portions of Subareas 28-2 and 28-4 to protect nine Howe Sound glass sponge reefs, as marine refuges. This includes prohibition of the following fishing activities:

- prawn and crab by trap
- shrimp and groundfish by trawl
- groundfish by hook and line

- use of downrigger gear in recreational salmon trolling

These eight new closures are in addition to the nine areas closed to all commercial, recreational and Aboriginal FSC bottom-contact fishing activities in the Strait of Georgia and Howe Sound in 2015. Nine remaining areas in Howe Sound require ground-truthing to assess their ecological significance and may be closed in the future.

For further information on this, please contact Deirdre Finn at Deirdre.Finn@dfo-mpo.gc.ca.

Current closure locations and more information is available at <http://www.dfo-mpo.gc.ca/oceans/ceccsr-cerceef/closures-fermetures-eng.html>

5.3.9 COMMITTEE ON THE STATUS OF ENDANGERED WILDLIFE SPECIES ASSESSMENTS

The Committee on the Status of Endangered Wildlife in Canada (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/eng/sct1/searchform_e.cfm

5.3.10 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:

<https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html>. In addition to the existing prohibitions under the *Fisheries Act*, if a species is listed 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. These prohibitions do not apply to species listed as special concern.

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-especies/listing-eng.htm>

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

BIRDS

- 4) [Ancient Murrelet](#) – Special Concern
- 5) [Marbled Murrelet](#) – Threatened
- 6) [Black-footed Albatross](#) – Special Concern
- 7) [Short-tailed Albatross](#) – Threatened
- 8) [Pink-footed Shearwater](#) – Threatened

FISH

- 9) [Basking Shark](#) – Endangered
- 10) [Bluntnose Sixgill Shark](#) – Special Concern
- 11) [Green Sturgeon](#) – Special Concern
- 12) [Longspine Thornyhead Rockfish](#) – Special Concern
- 13) [Rougheye Rockfish Types I & II](#) – Special Concern
- 14) [Tope \(Soupfin\) Shark](#) – Special Concern
- 15) [White Sturgeon](#) – Upper Fraser Designatable Unit – Endangered
- 16) [White Sturgeon](#) – Upper Columbia Designatable Unit – Endangered
- 17) [White Sturgeon](#) – Nechako Designatable Unit – Endangered
- 18) [White Sturgeon](#) – Kootenay River Designatable Unit – Endangered
- 19) Yelloweye Rockfish [Inside](#) and [Outside](#) populations – Special Concern

MAMMALS

- 20) [Blue Whale](#) – Endangered
- 21) [Fin Whale](#) – Threatened
- 22) [Grey Whale](#) – Special Concern
- 23) [Harbour Porpoise](#) – Special Concern
- 24) [Humpback Whale](#) – Threatened
- 25) Killer Whale – [Northern Resident Population](#) – Threatened
- 26) Killer Whale – [Southern Resident Population](#) – Endangered
- 27) Killer Whale – [Offshore Population](#) – Threatened
- 28) Killer Whale – [Transient Population](#) – Threatened
- 29) [North Pacific Right Whale](#) – Endangered
- 30) [Sea Otter](#) – Special Concern
- 31) [Sei Whale](#) – Endangered
- 32) [Steller Sea Lion](#) – Special Concern

REPTILES

- 33) [Leatherback Sea Turtle](#) – Endangered

SHELLFISH

- 34) [Northern Abalone](#) – Endangered
- 35) [Olympia Oyster](#) – Special Concern

Marine or anadromous species assessed by COSEWIC that are currently under consideration for listing under SARA include:

FISH

- 36) Bocaccio Rockfish – assessed as Endangered
- 37) Canary Rockfish – assessed as Threatened
- 38) Darkblotched Rockfish – assessed as Special Concern

- 39) Eulachon – Fraser River Designatable Unit – assessed as Endangered
- 40) Eulachon – Central Pacific Coast Designatable Unit – assessed as Endangered
- 41) Eulachon – Nass/Skeena Rivers Designatable Unit – assessed as Special Concern
- 42) North Pacific Spiny Dogfish – assessed as Special Concern
- 43) Salmon, Chinook (Okanagan population) – assessed as Endangered
- 44) Salmon, Coho (Interior Fraser population) – assessed as Threatened
- 45) Salmon, Sockeye (Sakinaw population) – assessed as Endangered
- 46) Salmon, Sockeye (Fraser River Group, 27 Designatable Units) – Eight Endangered, two Threatened, five Special Concern, nine Not at Risk)
- 47) Steelhead, Thompson – assessed as Endangered
- 48) Steelhead, Chilcotin – assessed as Endangered
- 49) Quillback Rockfish – assessed as Threatened

MAMMALS

- 50) Northern Fur Seal – assessed as Threatened
- 51) Grey Whale, North Pacific Migratory population – assessed as Not at Risk (reclassification from Special Concern, single Pacific population)
- 52) Grey Whale, Pacific Coast Feeding population – assessed as Endangered (reclassification from Special Concern, single Pacific population)
- 53) Grey Whale, Western Pacific population – assessed as Endangered (reclassification from Special Concern, single Pacific population)

1.1.1.1 SALMON AND STEELHEAD SARA LISTING PROCESSES

Over 60 salmon and two anadromous trout designatable units (DUs) have been recently, or will soon be, assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). COSEWIC's submission of its assessments to the Government of Canada, via its annual report, initiates the process to determine whether or not to list a species under the *Species at Risk Act* (SARA). For regular (non-emergency) processes, the Governor in Council (Cabinet) may, on the recommendation of the Minister of Environment and Climate Change, add the species to the List of Wildlife Species at Risk; decide not to add the species to the List; or refer the matter back to COSEWIC. To inform the recommendation and final listing decision, DFO

prepares the following regional information: a Recovery Potential Assessment (science advice); management scenarios (outlining measures to potentially be taken if the species is, or is not listed); Indigenous Cultural Significance information; a Cost-Benefit Analysis; and, consultations with First Nations, stakeholders, and the general public. More details on timelines and opportunities for engagement will be provided at a later date.

| Species | COSEWIC Assessment | # of DUs* | COSEWIC Assessment Date | COSEWIC Annual Report Date |
|---|------------------------------|-----------|-------------------------|----------------------------|
| Sakinaw Sockeye | EN | 1 | April 2016 | Oct 2016 |
| Interior Fraser Coho | TH | 1 | November 2016 | Oct 2017 |
| Okanagan Chinook | EN | 1 | April 2017 | Oct 2017 |
| Fraser Sockeye (Group I) | 8 EN, 2 TH, 5 SC, 9 NAR | 24 | November 2017 | Oct 2018 |
| Interior Fraser Steelhead (Thompson & Chilcotin) – Emergency Assessment | 2 EN** | 2 | January 2018 | N/A |
| Southern BC Chinook (Group I) | 8 EN, 4 TH, 1 SC, 3 NAR | 16 | November 2018 | Expected Fall 2019 |
| Interior Fraser Steelhead (Thompson & Chilcotin) – Regular Assessment | Assessment not yet performed | 2 | Expected November 2019 | Expected Fall 2020 |
| Fraser Sockeye (Group II) | Assessment not yet performed | 7 | Expected November 2019 | Expected Fall 2020 |
| Southern BC Chinook (Group II) | Assessment not yet performed | 12 | TBD | TBD |

EN – Endangered; NAR – Not at Risk

*DU refers to “designatable unit” or population.

** Emergency Assessment, as per SARA S.28 (1).

Further information on the SARA listing process can be found at:

<http://www.dfo-mpo.gc.ca/species-especes/publications/sara-lep/policy-politique/index-eng.html>

DFO has co-developed the following conservation strategies for species that were previously declined for SARA listing:

1. *Conservation Strategy for Coho Salmon, Interior Fraser River Populations*: <http://www.dfo-mpo.gc.ca/Library/329140.pdf>
2. *National Conservation Strategy for Cultus Lake Sockeye Salmon (Oncorhynchus Nerka)*: <http://www.dfo-mpo.gc.ca/Library/337479.pdf>
3. *Conservation Strategy for Sockeye Salmon (Oncorhynchus nerka), Sakinaw Lake Population*: <http://waves-vagues.dfo-mpo.gc.ca/Library/347720.pdf>

In addition to these documents, this IFMP identifies specific conservation objectives for these and other salmon stocks, found in Section 6, Fishery Management Objectives for Stocks of Concern.

1.1.1.2 THOMPSON AND CHILCOTIN STEELHEAD EMERGENCY SARA LISTING PROCESS

Spawning escapement of Interior Fraser Steelhead has been on a downward trend for several years, with recent years' escapements reaching historic lows. In January 2018, COSEWIC performed an Emergency Assessment on Thompson and Chilcotin Steelhead under S.28(1) of SARA to assess whether they face an imminent threat to survival, for the purpose of informing an Emergency Listing decision under S.29(1) of SARA. The assessment found that both the Thompson and Chilcotin Designatable Units (DUs) were Endangered, and as such an emergency listing process is underway to determine whether or not to list the DUs under SARA on an emergency basis. Under this process, the Minister of Environment and Climate Change Canada must form the opinion of whether there is an imminent threat to survival of the DU(s); she may base this decision on the COSEWIC assessment or her own information. If she is of the opinion there is an imminent threat, she must, after consultation with every other competent minister, make a recommendation to Governor in Council (GiC) to list the DU(s) on an emergency basis.

Following such a recommendation, GiC would make a listing decision based on information provided by the Minister, and may consider additional information, such as socio-economic impacts and the results of consultations with Indigenous Peoples and stakeholders. The public consultation period occurred from October 1, 2018 to December 2, 2018. Additional available information includes a CSAS Science Advisory Report for the Recovery Potential Assessment of Thompson and Chilcotin Steelhead Trout⁸ and Management Scenarios⁹.

⁸ http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018_050-eng.html

⁹ <http://www.dfo-mpo.gc.ca/species-especes/consultations/steelheadtrout-saumonarcenciel/management-scenarios-gestion/index-eng.html>

1.1.1.3 SHARK CODES OF CONDUCT

Out of the fourteen shark species in Canadian Pacific waters, three species are listed under SARA. The Basking Shark (*Cetorhinus 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 bycatch 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

1.1.1.4 MARINE MAMMALS

In order to address the conservation concerns with marine mammals, it is important that measures are taken to reduce the harm to and mortality of marine mammals resulting from primary threats they face, including those that may be associated with fishing activity, as well as to improve data quality of any interactions. As such, commercial fishing licences have been amended to include a Condition of Licence for Marine Mammals that specify mitigation measures and new reporting requirements.

1.1.1.5 DEPREDAATION

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. 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 at MarineMammals@pac.dfo-mpo.gc.ca or by calling (604) 666-9965. Reporting all incidents will assist DFO and fish harvesters in understanding this problem and help in developing strategies to avoid it.

5.3.11 WHALE, TURTLE AND BASKING SHARK SIGHTINGS

The Department welcomes assistance in the reporting of any whale, Leatherback Sea Turtle or Basking Shark entanglement or sighting. While there are many whale species found in Pacific Canadian waters, sightings of Basking Shark and Leatherback Sea Turtles are infrequent. The collection of sighting data is useful to scientists in determining population size and species distribution and aids in recovery efforts under the Species at Risk Act (SARA).

Marine Mammal Incident Reporting Hotline

The Department is responsible for assisting marine mammals and sea turtles in distress. If your vessel strikes a whale, or if you observe an entangled, sick, injured, distressed, or dead marine mammal in B.C. waters, please contact the B.C. Marine Mammal Response Network Incident Reporting Hotline immediately:

1-800-465-4336 OR VHF CHANNEL 16

What to report:

- Your name and contact information
- Date and time of incident
- Species
- Animal alive/dead
- Nature of injury
- Location: Latitude/Longitude coordinates, landmarks
- Pictures/Video taken



To report whale or turtle sightings contact the BC Cetacean Sighting Network:

Toll free: 1.866.I.SAW.ONE (1-866-472-9663)

Email: sightings@ocean.org

Internet: www.wildwhales.org

App: WhaleReport

To report basking shark sightings contact the Basking Shark Sightings Network:

Toll free: 1-877-50-SHARK (1-877-507-4275)

Email: BaskingShark@dfo-mpo.gc.ca

Internet: www.dfo-mpo.gc.ca/species-especes/sharks/report-eng.html

5.3.12 RESIDENT KILLER WHALE

Two distinct populations of Resident 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*. Broad strategies for recovery are identified in the *Recovery Strategy for Northern and Southern Resident Killer Whales (Orcinus orca) in Canada*, which was finalized in March 2008, and amended in 2011 and 2018. The Recovery Strategy also identifies key threats to Resident Killer Whales as (1) reduced prey availability, (2) physical and

acoustic disturbance, and (3) environmental contaminants. 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(4) and (5) through the issuance of Critical Habitat Orders. The update to the Recovery Strategy for Resident Killer Whales in 2018 resulted in the identification and protection of two additional areas of critical habitat: the waters on the continental shelf off southwestern Vancouver Island, including Swiftsure and La Pérouse Banks (important for both Northern and Southern Resident Killer Whales), and the waters of west Dixon Entrance, along the north coast of Graham Island from Langara to Rose Spit (important for Northern Resident Killer Whales). The [*Action Plan for Northern and Southern Resident Killer Whales \(Orcinus orca\) in Canada \(DFO 2017\)*](#) follows from the Recovery Strategy, and outlines measures that provide the best chance of achieving the population and distribution objectives for the species, including the measures to be taken to address the threats and monitor the recovery of the species.

1.1.1.5.1 Key Threat: Lack of Prey

Northern and Southern Resident Killer Whales are dietary specialists and feed primarily on Chinook salmon. The seasonal distribution and movement patterns of Resident Killer Whales are strongly associated with the availability of their preferred prey, Chinook salmon (*Oncorhynchus tshawytscha*), and secondarily, Chum Salmon (*O. keta*). During the summer and fall, the principal prey of SRKW appears to be Chinook and Chum Salmon and throughout the Salish Sea, Chinook salmon have experienced poor returns in recent years. There is less known about the winter and spring diet and winter distribution of the Southern Residents but recent and ongoing research will further our understanding and help further identify the principal threats facing the population. 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.

In addition to continued research on the threat of reduced prey availability, the Action Plan identifies measures to explore potential management actions to address this threat, including:

- a) Take into account both the seasonal (acute) as well as the cumulative (chronic) effects of poor returns for Chinook and other important prey species on Resident Killer Whales when managing fisheries.

- b) Investigate the benefits of strategic salmon fishery planning approaches and management actions to reduce Resident Killer Whale prey competition in specific feeding areas (e.g. modeling, retention limits, fishery area boundary adjustments or closures), and implement where appropriate.
- c) Evaluate the potential impacts of disturbance and prey competition from fisheries on foraging success in key Resident Killer Whale foraging areas.

For the 2018 salmon fishing season, the Department focused on ways to support increased Chinook salmon prey availability in key foraging areas within the SRKW Critical Habitat. The primary objective of the measures was to improve Chinook salmon availability for SRKW by decreasing potential fishery competition, as well as, minimizing physical and acoustic disturbance in key foraging areas to the extent possible. The measures were in place from June 1 to September 30

1.1.1.5.2 Key Threat: Environmental 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 U.S. researchers continue to monitor resident killer whale populations.

1.1.1.5.3 Key Threat: Physical and Acoustic 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:

<http://www.dfo-mpo.gc.ca/fm-gp/mammals-mammiferes/viewing-observation-eng.html>.

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

1.1.1.6 SOUTHERN RESIDENT KILLER WHALE

Over the past two years, the Government of Canada has taken important steps to protect and recover the SRKW population, in keeping with direction provided in SARA recovery documents. In May 2018, the Minister of Fisheries, Oceans and the Canadian Coast Guard, and the Minister of Environment and Climate Change Canada (ECCC) determined that the SRKW is facing imminent threats to its survival and recovery. Given the status of the population and ongoing threats to SRKW recovery, DFO implemented a number of measures in 2018, including measures aimed at increasing prey availability and accessibility for SRKW - particularly Chinook Salmon—and reducing threats related to physical and acoustic disturbance in key foraging areas.

Building on the Whales Initiative (2018)¹⁰, the Government announced a suite of new measures focused on broadening and strengthening protection for the SRKW on October 31, 2018, including:

- Protecting and recovering Chinook salmon stocks (the primary prey for SRKW);
- Continuing to identify and protect new areas of critical habitat;
- Advancing feasibility work on killer whale sanctuaries;
- Expanding vessel slow-downs and vessel monitoring systems; and
- Developing underwater noise management plans.¹¹

In order to help inform these measures, DFO, ECCC, and Transport Canada have convened five new Technical Working Groups (TWGs):

- Prey availability and accessibility (led by DFO);
- Identification/development of proposed SRKW sanctuaries (led by DFO);
- Vessel noise measures related to large commercial vessels (led by TC);

¹⁰ Whales Initiative: Protecting the Southern Resident Killer Whale
(<https://www.tc.gc.ca/en/campaigns/whales-initiative-protecting-southern-residen-killer-whale.html>)

¹¹ Government of Canada taking further action to protect Southern Resident Killer Whales
(<https://www.canada.ca/en/fisheries-oceans/news/2018/10/government-of-canada-taking-further-action-to-protect-southern-resident-killer-whales.html>)

- Additional vessel noise measures (led by TC); and
- Contaminants (led by ECCC).

These Working Groups include technical and subject matter experts from Indigenous and coastal communities, stakeholders and other levels of government. They have been tasked with providing recommendations to our Departments and Ministers on a range of measures to address key threats to the SRKW population, including recommendations for immediate action in the 2019 season, and recommendations for longer-term recovery actions.

Where appropriate and feasible, recommendations from these Technical Working Groups will be considered through established consultation and advisory processes, including the Integrated Fisheries Management Planning (IFMP).

Further information regarding SRKW and DFO recovery measures can be obtained by contacting your Regional Fisheries Coordinator or the DFO Marine Mammal Unit.

1.1.1.7 MARINE MAMMAL PROTECTION ACT

In 2016, the US published new regulations (80 FR 54390) implementing the Marine Mammal Protection Act (MMPA) import provisions pertaining to the reduction of marine mammal bycatch in foreign commercial fishing operations. Every four years, the US publishes information on all fisheries that export to the US in the List of Foreign Fisheries (LFF). A harvesting nation intending to export fish and fish products to the US after January 1, 2022, must apply to the US National Oceanic and Atmospheric Administration (NOAA) for a comparability finding for each of its commercial fisheries listed in the LFF.

To receive a comparability finding for a fishery, the US MMPA import provisions mandate that the harvesting nation demonstrate: 1) the prohibition of intentional mortality or serious injury of marine mammals in the course of commercial fishing operations; and 2) the implementation of a regulatory program comparable in effectiveness to the US, including bycatch estimates from at-sea observer programs and management/mitigation measures.

DFO will be working closely with the commercial fishing industry and other stakeholders to facilitate the process under these new regulatory requirements in the US. Further information regarding the US-MMPA import provisions can be obtained by contacting your Regional Fisheries Coordinator or the DFO Marine Mammal Unit (MMU) (Contact: Lee Harber, Marine Mammal Advisor; Lee.Harber@dfo-mpo.gc.ca).

1.1.1.8 AMENDED MARINE MAMMAL REGULATIONS

On June 22, 2018 the amended Marine Mammal Regulations came into force. These amendments include requirements for boats to maintain a minimum approach distance of 200m from all Killer Whales. The amended regulations also provide clarification on what it means to disturb a marine mammal, including feeding, swimming or interacting with them; moving it (or enticing/causing it to move); separating a marine mammal from its group or going between it and a calf; trapping marine mammals between a vessel and the shore, or between boats; as well as tagging or marking it.

Further information regarding the Marine Mammal Regulations can be obtained by contacting your Regional Fisheries Coordinator or the DFO Marine Mammal Unit (MMU) (Contact: Paul Cottrell, Marine Mammal Coordinator; Paul.Cottrell@dfo-mpo.gc.ca).

5.3.13 ENVIRONMENT CANADA ASSESSING THE IMPACT OF SALMON GILL NET FISHING ON LOCAL SEABIRD POPULATIONS

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

Populations of a number of seabird species around the world have declined in recent years; seabird bycatch is a part of the reason.

Seabird bycatch has been reported in all types of fisheries in BC and in fisheries in Alaska and Washington State. However, the number of local seabirds getting entangled in gill nets as a result of the BC 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, have 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 Biologist, Environment Canada

Canadian Wildlife Service, Delta, BC

Telephone: (604) 862-8817

Email: laurie.wilson@canada.ca

5.3.14 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 aquaculture activities at marine finfish, shellfish, freshwater/land-based and enhancement facilities. The Aquaculture Activities Regulations (AAR), which came into force in 2015, further clarify conditions under which aquaculture operators may treat their fish for disease and parasites, as well as deposit organic matter.

The Province of British Columbia continues to have authority over land tenures and workplace safety related to aquaculture in BC. New applications, amendments and related referrals are coordinated through Front Counter BC. More information is available on the BC government's website:

<http://www.frontcounterbc.gov.bc.ca>

DFO requires comprehensive environmental monitoring to be undertaken by the marine finfish industry, and the department also conducts additional monitoring, audits, and investigations (where warranted) to verify information submitted by licence holders and to obtain samples for analysis. Public reporting on the environmental performance of the aquaculture sector in BC is undertaken to ensure the transparency and accountability of the industry. Associated reporting can be found on the DFO web pages:

<http://www.pac.dfo-mpo.gc.ca/aquaculture/reporting-rapports/index-eng.html>.

Within the BC Aquaculture Regulatory Program there is a Compliance and Enforcement Unit, dedicated to aquaculture compliance, as well as an Aquaculture Environmental Operations Unit, which monitors the activities of industry on an on-going basis. The Program provides oversight and works to ensure the orderly management of the industry, including planning and licensing, linkages with national and regional policy, as well as consultation and communications. Contact information for staff with responsibilities related to aquaculture management within DFO can be found in the [Department Contacts](#) section of this plan.

INTEGRATED MANAGEMENT OF AQUACULTURE PLANS:

Integrated Management of Aquaculture Plans (IMAPs) provide an overview of each aquaculture sector and associated management and regulation. IMAPs are available on the DFO

Consultations web pages:

<http://www.pac.dfo-mpo.gc.ca/consultation/aquaculture/index-eng.html>

IMAPs complement IFMPs and the two are reviewed periodically to ensure consistency of management approaches.

AQUACULTURE MANAGEMENT ADVISORY COMMITTEES:

Aquaculture Management Committee Meetings (AMACs) engage the aquaculture industry, First Nations, and other stakeholders in development of IMAPs and on-going feedback relevant to the management of Aquaculture.

More information on IMAPs and AMACs is available through: IMAPS@dfo-mpo.gc.ca

5.3.15 SALMONID ENHANCEMENT PROGRAM

The Salmonid Enhancement Program (SEP) produces Pacific salmon at enhancement facilities, restores habitat, and undertakes projects that include public participation by local communities and First Nations in fisheries and watershed stewardship activities. Enhanced salmon enable economic, social and cultural harvest opportunities for commercial, recreational and First Nations harvesters, support vulnerable stock rebuilding, and contribute to Canada's stock assessment commitments under the Pacific Salmon Treaty with the United States. Projects with community partners include stewardship activities and the development of integrated local and area watershed plans. SEP also support school education and public awareness projects.

With respect to projects that undertake fish culture, about 150 projects release fish annually from sites throughout British Columbia and the Yukon. Projects range in size from spawning channels releasing nearly 100 million juveniles annually to school classroom incubators releasing fewer than one hundred juveniles. SEP enhances Chinook, Coho, Chum, Pink, and Sockeye salmon, as well as small numbers of steelhead and cutthroat trout. Project types include hatcheries, fishways, spawning and rearing channels, habitat improvements, flow control works, lake fertilization, and small classroom incubators. Projects are operated by SEP staff or contracted with some SEP support to First Nations and community and volunteer groups.

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;
- First Nations, and Public Involvement Program projects that are divided into designated (DPI – Designated Public Involvement) and non-designated (PIP – Public Involvement Program) categories. The latter are smaller projects that focus on outreach, stewardship and educational activities, and do not produce large numbers of fish;
- The Resource Restoration Unit, which supports habitat improvements, stock assessment, effectiveness monitoring, watershed planning, and partnerships related to habitat initiatives.
- SEP Planning and Assessment (SPA) that reviews data, analyses returns and incorporates these details into a draft production plan along with major operation facility information.

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. Production planning meetings involve SEP, Science, and Fisheries Management, and external consultation and involvement is achieved through the IFMP process. The production planning cycle establishes maximum numbers of eggs to be collected and juveniles to be released for each enhanced system, 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. SEP priorities are established annually based on the national and regional priorities using a consistent approach across the program.

The information available at the link below addresses production from major DFO Operations (OPS) facilities, contracted Community Economic Development Program hatcheries (CEDP), larger or more complex Public Involvement Projects (Designated Public Involvement or DPI) operated by volunteers, and Aboriginal Fisheries Strategy (AFS). 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. There are two datasets available at the link below:

- 54) Post-Season Production from the 2017 brood year (i.e. 2018 releases, and #'s on hand for 2019 release)

- 55) Draft SEP Production Plan, which include proposed targets for the 2019 brood year. The Production Plan dataset is preliminary, and the final version will be available upon the final publication of the IFMP in June 2019.

<http://www.pac.dfo-mpo.gc.ca/sep-pmvs/projects-projets/ifmp-pgip-eng.html>

Significant production changes for 2019 are incorporated into the *Enhancement Information* in each Species Overview of the Section 12 Fishing Plans.

5.3.16 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.

6 FISHERY MANAGEMENT OBJECTIVES FOR STOCKS OF CONCERN

6.1 RIVERS AND SMITH INLET SOCKEYE

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

For Smith Inlet Sockeye, the Docee Fence has historically provided an accurate in-season estimate of returns that was used to inform management decisions for potential fisheries. Unfortunately, the fence has not been in operation since 2017. Without the Docee Fence, assessing the strength of returns of Sockeye to Smith Inlet will be challenging. New methods for determining in-season run strength based on alternate indicators will need to be developed in order to implement commercial Sockeye opportunities.

For Rivers Inlet Sockeye, commercial openings are unlikely until a clear trend towards higher productivity and consistently better escapements is established and documented by the annual surveys of spawning adults. The run size is predicted using a 5-year model that has performed well in estimating run size. Currently, there is not an established in-season assessment tool to estimate run size in this area.

Updated upper and lower biological escapement targets for Rivers Inlet Sockeye are under development and a process is underway to review the available information, and identify data gaps and associated uncertainties, with the final steps including a full science review of the updated benchmarks through the Canadian Science Advice Secretariat (CSAS) and establishment of updated Management Reference Points . It is anticipated that the Science Review of the biological benchmarks will be completed in 2019 with updated Management Reference Points to be consulted upon through the 2020/21 IFMP consultative process.

6.2 SKEENA RIVER SOCKEYE

The objective for Skeena River Sockeye is to maintain sustainable stocks consistent with the WSP and support FSC, commercial and recreational harvests.

Over the past three years, the Skeena First Nations Technical Committee (SFNTC) has provided recommendations to guide management of First Nations FSC fisheries in the Skeena. Through this collaboration, the SFNTC has recommended that the FSC management trigger be increased from the minimum escapement goal of 400,000 to 600,000. North Coast Stock Assessment has further supported this work and recommendation as an interim measure to increase the

likelihood of attaining the minimum escapement goal for the aggregate of wild Skeena Sockeye. This action is required to meet the interim lower biological benchmark of 240k (40% S_{MSY}) for wild Skeena Sockeye stocks (WSP Conservation Units). A review of biological benchmarks for all Skeena Sockeye CU's will be done as a part of the obligations resulting from the updates to Chapter 2 of the Pacific Salmon Treaty. This work will further inform both updated biological benchmarks for individual Sockeye CU's as well as Management Reference Points for the Skeena Sockeye aggregate.

For commercial fisheries, harvest rates will be based on an abundance-based formula that takes into account the forecasted aggregate Skeena Sockeye return to Canada and the status of Skeena Sockeye stocks where information is available.

6.3 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. In particular, management objectives to reduce harvest impacts on weak stocks such as Kwinageese and Damdochax Sockeye will remain until improvements are observed. 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, recreational and commercial harvest opportunities. Management measures will be in place to reduce impacts to specific stocks of concern.

6.4 NORTH COAST CHUM

The objective for wild north coast Chum is to rebuild weak wild stocks, 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 [Appendix 7](#) and [Appendix 8](#) for more details.

6.5 SKEENA AND NASS CHINOOK

The objective for Skeena and Nass Chinook is to promote Chinook conservation and support rebuilding.

Most Skeena and Nass River Chinook conservation units (CU's) experienced declines in abundance in 2016 and 2017, followed by increases in 2018. Expectations for returns in 2019 are for continued improvements in abundance. However, a precautionary approach to

management will be implemented for the 2019 season to address concerns for the longer term decline in overall abundance of these stocks and uncertain environmental conditions. Please see Section 13 for more details.

6.6 NORTHERN COHO

The objective for Northern Coho is to reduce exploitation in domestic fisheries to promote Coho conservation and support rebuilding.

Returns of Northern Coho in 2018 were the second lowest recorded since the mid 1990's. Reduced survival rates, productivity, and uncertain marine conditions are all potential causes for the marked decline in survivals. In addition, drought conditions to spawning streams in the later part of the 2018 season will have an uncertain impact to the spawning success of the 2018 brood, leading to concerns for future returns.

Reductions to Coho exploitation will be implemented in Northern commercial and recreational fisheries and the results of these management measures will be assessed post season to determine if additional measures are required for the 2020 fishing season. Please see Section 13 for more details.

6.7 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 despite improved returns of enhanced stocks in recent years. WCVI wild Chinook continue to be stocks 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 harvest rate of WCVI Chinook in the Area

F troll fishery is calculated based on 3.2% of the total WCVI return to Canada and is used as an in-season proxy for exploitation rate. The in-season harvest 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 half of June and parts 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.

Chinook will be managed as per Annex IV provisions of the 2019 PST agreement. The harvest reductions are:

- For the U.S., up to a 7.5 per cent reduction in the Southeast Alaska aggregate abundance-based management or “outside, mixed-stock” fishery, as well as reductions of up to 15 per cent from 2009-2015 harvest levels for individual stocks in Washington and Oregon individual stock-based management fisheries.
- For Canada, up to a 12.5 per cent reduction in the West Coast Vancouver Island aggregate abundance-based management fishery and reductions of up to 12.5 per cent from 2009-2015 levels in Canadian individual stock-based management fisheries.

6.8 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.

6.9 INSHORE ROCKFISH

2019/2020: The management objective for Bocaccio and inshore rockfish species (which include Yelloweye, Quillback, Copper, China, and Tiger) is to continue conservation strategies that will ensure stock rebuilding over time. These inshore rockfish species are currently non-retention in the commercial salmon troll fisheries.

The management objective for Bocaccio and inshore rockfish species (which include Yelloweye, Quillback, Copper, China, and Tiger) is to continue conservation strategies that will ensure

stock rebuilding over time. These inshore rockfish species are currently non-retention in the commercial salmon troll fisheries.

In 2002, an inshore rockfish conservation strategy was established with initial measures introduced for recreational and commercial fisheries. The strategy addresses four areas under the fisheries management and stock assessment regime:

- a) Protect a part of inshore rockfish populations from harvest through the use of rockfish conservation areas.
- b) Collect information on total fishery mortalities through improved catch monitoring programs.
- c) Reduce harvests to levels that are less than the estimates of natural mortality (i.e. less than two percent).
- d) Improve the ability to assess the status of inshore rockfish populations and monitor changes in abundance.

There are 164 Rockfish Conservation Areas (RCAs) in place within BC waters. Fish harvesters are reminded prior to fishing to check with the local DFO office to verify RCA and other closures currently in effect. Details of the current RCA process can be found in Section [5.3.7](#). Information on Rockfish Conservation Areas is available online at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/maps-cartes/rca-acis/index-eng.html> or for further information on this, please contact Neil Ladell at Neil.Ladell@dfo-mpo.gc.ca.

ROCKFISH REBUILDING PLANS

Fisheries and Oceans Canada (DFO) has developed “A Fisheries Decision-Making Framework Incorporating the Precautionary Approach” (PA Framework) under the auspices of the Sustainable Fisheries Framework. It outlines the departmental methodology for applying the precautionary approach (PA) to Canadian fisheries. A key component of the PA Framework requires that when a stock has reached or fallen below a limit reference point (LRP), a rebuilding plan must be in place with the aim of having a high probability of the stock growing above the LRP within a reasonable timeframe.

The purpose of rebuilding plans is to identify the main objectives and requirements for any species below an LRP (i.e., in the “critical zone” of the PA Framework), as well as the management measures that will be used to achieve these objectives. Appendix 9 of the Integrated Fisheries Management Plan for Groundfish outlines rebuilding plans for groundfish species that (a) have been identified by peer reviewed stock assessments as currently in the critical zone under the PA framework and (b) are not covered by other management planning

tools for depleted species, such as Species At Risk Act-listed species that require a recovery plan or management plan.

The primary objective of any rebuilding plan, outlined in the PA Framework, is to:

Promote stock growth out of the critical zone ($B > 0.4 B_{msy}$) by ensuring removals from all fishing sources are kept to the lowest possible level until the stock has cleared this zone. There will be no tolerance for preventable decline. This objective remains the same whether the stock is declining, stable, or increasing.

7 GENERAL DECISION GUIDELINES, 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*.

7.1 ALLOCATION GUIDELINES

Allocation decisions are made in accordance with *An Allocation Policy for Pacific Salmon*: <http://www.dfo-mpo.gc.ca/Library/240366.pdf>

An update on the review of the Salmon Allocation Policy can be found in Section 1.6.1.

Table 7.1-1: 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 *An Allocation Policy for Pacific Salmon* on non-target stocks is case specific. The inadvertent harvest of different species 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 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.

7.1.1 FIRST NATIONS – FOOD, SOCIAL AND CEREMONIAL (FSC)

An 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). The Department has announced plans to review *An Allocation Policy for Pacific Salmon*; further details can be found in Section 1.6.1.

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

7.1.2 FIRST NATIONS ECONOMIC OPPORTUNITY AND INLAND DEMONSTRATION FISHERIES

For a more detailed description of Aboriginal commercial fishing opportunities please refer to Section [12](#) – Species Specific Salmon Fishing Plans.

7.1.3 RECREATIONAL FISHERIES

Under *An 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 of 5% of the combined recreational and commercial harvest of each species on a coast-wide averaged over a rolling 5 year period.

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.

7.1.4 COMMERCIAL FISHERIES

An 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.

Please see Section [12](#)– Species Specific Salmon Fishing Plans for the commercial allocation plan with shares by species, fleet and fishery production area. The ability to achieve allocations is often limited by conservation constraints and other factors. Low impact fisheries (limited number of vessels) often 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. Access and Allocation Objectives

7.1.5 INTERNATIONAL OBJECTIVES

The objective is to manage Canadian treaty fisheries to ensure that obligations within the Pacific Salmon Treaty (PST) are achieved. As of January 1, 2019, treaty fisheries were managed in accordance with new amendments under the PST, which were being provisionally applied until the treaty formally entered into force as of May 3, 2019.

Details can be found at the Pacific Salmon Commission (PSC) website at:
<https://www.psc.org/>.

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

7.1.6 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 and *An Allocation Policy for Pacific Salmon*.

An Allocation Policy for Pacific Salmon can be found on-line at:
<http://www.dfo-mpo.gc.ca/Library/240366.pdf>

An Allocation Policy for Pacific Salmon sets out principals for allocation between the recreational and commercial sectors and also identifies sharing arrangements for commercial fisheries. An explanation of some of the features of Allocation planning is set out in Section [7.1](#).

An update on the review of the Salmon Allocation Policy can be found in Section 1.6.1.

7.1.7 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.

Five Nuu-chah-nulth First Nations located on the West Coast of Vancouver Island - Ahousaht, Ehatesaht, Hesquiaht, Mowachaht/Muchalaht, and Tla-o-qui-aht (the Five Nations) - have aboriginal rights to fish for any species of fish within their Fishing Territories and to sell that fish, with the exception of geoduck. DFO is working with the Five Nations to implement a Fishery Management Plan (FMP) for salmon, groundfish, crab and prawn for implementation effective April 1, 2019. This FMP includes specific details about the fishery, such as allocation/access, licensing and designations, fishing area, harvesting opportunities, and fishery monitoring and catch reporting.

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.

7.1.8 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 the opportunity and expectation to catch fish in a predictable manner. 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 objectives.

7.2 GENERAL DECISION GUIDELINES

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 Section [12](#) – Species Specific Salmon Fishing Plans.

7.2.1 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 other interests, and the experience of fishery managers and stock assessment staff.

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

7.2.2 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 guidelines established pre-season; 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.

7.2.3 SELECTIVE FISHERIES

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

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

7.2.4 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 7.2-1](#). 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 7.2-1](#) 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.

For post-season assessments of Chinook salmon, DFO uses the exploitation rates developed by the Pacific salmon Commission Chinook Technical Committee which employ the mortality rates reported by the PSC (2007).

Table 7.2-1: Post-Release Mortality Rates

| Fishery | Pre 2001 Post-Release Rates (for historical comparison) | Post 2001-Release Rates |
|---|---|--|
| First Nations Fisheries | Note: When using the same gear and methods noted below the same mortality rates were applied. | <p>Various – Depending on gear used and fishery</p> <p>Gill net – 60% same as commercial below</p> <p>Beach seine – 5% for Sockeye and Coho in-river Fraser</p> <p>Modified Shallow Seine- 10% for Sockeye and Coho in-river Fraser</p> <p>Tooth Tangle net – 3.5" mesh is 10% Sockeye and 15% Coho</p> <p>Fishwheel - 5% for Sockeye and Coho in-river Fraser</p> |
| 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 | 10% for Coho in South Coast areas; 15% for Chinook in all areas |

| | | |
|--|------------|---|
| Commercial gill net (South Coast) | 60% to 70% | 60% with provision for rates as low as 40% where selective techniques warrant |
| Commercial seine – 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 tooth tangle net 3.5" mesh | n/a | 10% Sockeye, 15% Coho |

*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 2017 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.

8 COMPLIANCE PLAN

8.1 COMPLIANCE AND ENFORCEMENT OBJECTIVES

CONSERVATION AND PROTECTION PROGRAM DESCRIPTION

Conservation and Protection (C&P) is mandated to protect fisheries, waterways, aquatic ecosystems and resources from unlawful exploitation and interference. Fishery officers provide compliance promotion and enforcement services in support of legislation, regulations and management measures implemented to achieve the conservation and sustainable use of Canada's aquatic resources, the protection of species at risk, fish habitat and oceans.

In carrying out activities associated with the compliance and enforcement of Pacific salmon fisheries, outlined in this management plan, C&P will utilize intelligence-led and principle-based approaches and practices consistent with the *Three Pillars of the C&P National Compliance Framework* and the *DFO Compliance Model*:

- I. Voluntary **compliance promotion** through education, stewardship and stakeholder engagement;
- II. Intelligence-led **monitoring, control and surveillance** activities;
- III. Management of **major cases /special investigations** in relation to complex compliance issues.

8.2 REGIONAL COMPLIANCE PROGRAM DELIVERY

C&P utilizes a broad scope of activities to deliver compliance and enforcement services within Pacific Region salmon fisheries. The main activities of C&P include:

- Prioritizing compliance and enforcement measures that support DFO management objectives which aim to sustain the salmon stocks and fisheries;
- Developing and maintaining positive relationships with First Nations communities, recreational groups and commercial interests through dialogue, education and shared stewardship;
- Ensuring the development and supporting of a fishery officer complement that is skilled, well-equipped, well-informed, safe and effective;
- Ensuring that salmon fisheries participants are aware of their obligations to comply with licence conditions;

- Inspecting fish processors, cold storage facilities, restaurants and retail outlets to verify compliant product;
- Conducting high-profile fishery officer presence during patrols by vehicle, vessel and aircraft to detect and deter violations;
- Maintaining a violation reporting 24-hour hotline to facilitate the reporting of violations;
- Supporting traceability initiatives within the salmon fishery for enhanced accountability, e.g., monitoring and verifying salmon catches and offloads to ensure accurate and timely catch reporting and accounting, including coverage of dual-fishing opportunities;
- Collecting and utilizing intelligence to identify and target repeat and more serious offenders for enforcement effort, including laundering and illegal sales of salmon;
- Utilization of enhanced surveillance techniques, technology and covert surveillance techniques as a means to detect violations and gather evidence in salmon fisheries-of-concern;
- Responding to the most serious habitat violations identified by the DFO Fish and Fish Habitat Protection Program;
- Continue to utilize restorative justice forums to reduce harm to fisheries, species-at-risk, and fisheries habitat.

8.3 CONSULTATION

Education, information and shared stewardship activities are the foundation for achieving voluntary compliance. C&P fishery officers regularly participate in consultations with resource users and the general public. C&P participates in all levels of the advisory process and is committed to including local fishery officers to provide users and the community-at-large with specific information related to compliance and enforcement perspectives. C&P will continue to meet with individual First Nations at the local level through the First Nations Liaison Program and with First Nations planning committee meetings where many First Nations gather.

8.4 COMPLIANCE STRATEGY

Salmon fishery compliance and enforcement continues to be a significant priority for C&P. Concurrent to the salmon season, compliance and enforcement attention may be required to address violations related to fisheries habitat, shellfish harvest in contaminated areas, Whale

initiative/response and the protection of species at risk. 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 identifies priorities so that resources are allocated to the areas of greatest need.

9 PERFORMANCE/EVALUATION CRITERIA

This section is intended to outline measurable indicators to determine whether or not those management issues outlined in the IFMP are being addressed. 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; WSP 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. 2018 season) follow below:

9.1 2018/2019 POST SEASON REVIEW FOR STOCKS OF CONCERN

NOTE: The objectives shown in **bold** below is the wording from the 2018/19 Integrated Fisheries Management Plan.

9.1.1 RIVERS AND SMITH INLET SOCKEYE

2018/2019: 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 have been no commercial or recreational fisheries targeting River Inlet Sockeye for many years. Escapements, with the exception of 2011 and 2016, have fallen short of target levels. Commercial and recreational fisheries remain unlikely until a trend towards consistently higher productivity has been established. This trend will be established from the adult spawner survey. A process is underway to establish updated biological benchmarks for Rivers Inlet Sockeye and associated Management Reference Points. It is anticipated that consultation on the results of this work will take place through the 2020/21 IFMP consultative process.

The Docee Fence did not operate in 2017 or 2018 and consequently the strength of returns to Smith Inlet were unknown. Fishing opportunities were not permitted within Smith Inlet in 2018. There is interest in seeking alternate in-season methods to determine run strength in order to realize potential commercial harvest opportunities.

9.1.2 SKEENA RIVER SOCKEYE

2018/2019: The objective for Skeena River Sockeye is to maintain sustainable stocks consistent with the WSP and support FSC, commercial and recreational harvests.

The preliminary post-season estimate of the Skeena Sockeye total return for 2018 was 1.78 million (1.70 million total return to Canada). The preliminary post-season estimate of escapement past the Tyee test fishery was 1.59 million and the in-season estimate at Tyee was 1.3 million.

The 2018 Skeena Sockeye directed marine commercial fishery was open from July 24 to August 19. The recreational fishery was also closed at the start of the season and was opened August 7 with daily limits for Sockeye set at 2 per day.

In light of a low preseason forecast for Skeena Sockeye, the Department worked with First Nations to develop a restricted harvest plan for First Nation FSC fisheries. This resulted in the development of FSC management recommendations from the Skeena First Nations Technical Committee to guide First Nations FSC fisheries that targeted Skeena Sockeye. First Nations agreed to initially restrict FSC fisheries in the marine approaches and the Skeena and Babine Rivers. Once it became clear that the in-season forecast was stronger than originally anticipated, First Nations began directed Sockeye FSC fisheries. The preliminary Skeena Sockeye FSC catch estimate for 2018 is 74,726 pieces. Due to the stronger than anticipated return of Skeena Sockeye, Skeena River First Nations Inland Demonstration Fisheries and the Babine Lake ESSR fishery were able to proceed in 2018. The preliminary harvest of sockeye by these fisheries was 20,827 for the Inland Demonstration Fisheries and 192,712 in the Babine Lake ESSR fishery.

9.1.3 NASS RIVER SOCKEYE

2018/19: 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.

Nisga'a Fisheries Program assessment 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.

The preliminary post-season estimate of the Nass Sockeye total return for 2018 was 318,000 and the Total Return to Canada estimate was 298,000

In-season stock assessment information indicated that the return of Nass Sockeye was poorer than anticipated and, as such, retention of Sockeye in Area 3 fisheries closed on July 5 and any

fisheries in Area 3 remained non-retention of sockeye through to the Kwinageese closure, July 9 and July 22, to reduce impacts on Kwinageese Sockeye stock of concern. There were no further Sockeye-directed commercial opportunities after July 5 and any fisheries remained non-retention of Sockeye to the end of the season. The 2018 Nass Sockeye directed marine commercial fisheries harvested approximately 11,786 Nass Sockeye. In response to poor pre-season forecast, and weak in-season estimates of Nass Sockeye escapements, recreational Sockeye retention limits were set at 0 in the marine waters, and recreational harvest of Sockeye in Meziadin Lake closed on July 31. First Nations FSC fisheries for Nass Sockeye were open in the marine approaches and the Nass River for the duration of the season. The preliminary Nass Sockeye FSC catch estimate for 2018 is 45,880. Due to concerns over poor Nass Sockeye returns at Meziadin, no Sockeye were harvested in Nass River First Nation Inland Demonstration Fisheries and 46,615 Sockeye were harvested in Nisga'a Treaty Sale Fisheries.

9.1.4 NORTH COAST CHUM

2018/2019: 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 2018. There were no commercial net fisheries that targeted wild Chum from Areas 3 to 6 in 2018. 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 when Alaskan hatchery Chum are prevalent, closing to retention on July 27. Chum otoliths collected from this portion of the fishery have been analyzed for hatchery thermal marks to confirm the high proportion of hatchery fish. Preliminary estimates indicate that exploitation rates have remained below the 10% rebuilding exploitation rate objective. There were no commercial opportunities for Chum in Area 6 in 2018.

9.1.5 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%.

The total Area F Troll Chinook catch in 2018 was 70,276 pieces which contained 7,575 WCVI Chinook estimated from DNA analysis of the catch. The post-season reconstructed WCVI return to Canada in 2018 was estimated at 223,794 Chinook salmon. The harvest rate on the return to

Canada was 3.4% measured using DNA. The post season exploitation rate on WCVI Chinook by the NBC troll fishery was 4.4% measured using CWT's.

The exploitation rates estimated from CWT's on WCVI Chinook caught in the northern AABM recreational fishery, the WCVI AABM troll fishery and the WCVI AABM sport fishery in 2018 were 6.2%, 1.3%, and 4.5% respectively for a total of 16.3% which is more than the 10% objective.

9.1.6 NASS AND SKEENA CHINOOK

2018/2019: The objective for Nass and Skeena Chinook is to reduce annual harvest rates to 25%-35% to meet Chinook conservation and support rebuilding.

Management measures were applied across all recreational and commercial fisheries in 2018 in order to meet the harvest rate reduction for Nass and Skeena Chinook. Measures included no Chinook-directed commercial fisheries, non-retention of Chinook in any commercial net fisheries, delayed start date for Area F Troll fishery, and zero retention limits for Chinook for part of the season for marine and in-river recreational fisheries. Overall, a harvest rate reduction was realized due to decreased commercial and recreational effort, and better than anticipated returns of both Nass and Skeena Chinook, with the target being met in the Nass River but not in the Skeena. For 2019, while it is expected that there will be some improvements to Chinook abundance for both the Nass and Skeena Rivers, a precautionary approach to management will continue with some relaxation in management actions for Chinook to be implemented.

9.1.7 INSHORE ROCKFISH

2019/2020: The management objective for Bocaccio and inshore rockfish species (which include Yelloweye, Quillback, Copper, China, and Tiger) is to continue conservation strategies that will ensure stock rebuilding over time. These species are currently non-retention in the commercial salmon troll fisheries.

Based on updated science information, the Department has implemented stepped reductions of total Bocaccio harvest from the estimated total catch mortality of 137 metric tonnes (MT) in 2012 to a mortality cap of 75 MT over 3 years (2013-14 to 2015-16). The Department has also implemented stepped reductions of total Yelloweye Rockfish (outside population) harvest from the estimated total catch mortality of 287 MT in 2014 to a mortality cap of 100 MT over 3 years (2016/17 to 2018/19). The Department established management measures in 2012 for Yelloweye Rockfish (inside population) intended to restrict total mortality to 15 tonnes, an amount that is believed to promote stock rebuilding consistent with the stated objective. The rockfish

rebuilding plan is further described in the Integrated Fisheries Management Plan for Groundfish.

The Department is working collaboratively with all fishing interests to achieve for rockfish conservation and rebuilding. For the salmon troll, recreational, and FSC fisheries, the current emphasis is on increasing awareness, given the limited data available on catch. Current work with these fisheries is focused on:

- Improving rockfish identification among fishers, technicians, guides, lodges, creel surveyors, and other catch monitors;
- Improving fishery monitoring and catch reporting of rockfish by species;

9.2 POST SEASON REVIEW OF ACCESS AND ALLOCATION OBJECTIVES

9.2.1 INTERNATIONAL OBJECTIVES

2018/2019: The objective was to manage Canadian treaty fisheries to ensure that obligations within the Pacific Salmon Treaty (PST) are achieved.

Review and performance of the PST provisions for Sockeye, Coho, Chum and Chinook salmon occur annually at bilateral meetings. Results of the meetings are published in the annual post-season reports available from the Pacific Salmon Commission (PSC). More information is available on the PSC website at:

<http://www.psc.org/index.htm>

9.2.2 DOMESTIC ALLOCATION OBJECTIVES

2018/2019: The objective is to manage fisheries in a manner that is consistent with the Allocation Policy for Pacific Salmon and the 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. Post-season reviews were conducted to provide information on stock status, catches and other fishery information.

9.2.3 FIRST NATIONS OBJECTIVES

2018/2019: : The objective was to manage fisheries to ensure that, after conservation needs are met, First Nations' food, social and ceremonial requirements and treaty obligations to First

Nations have first priority in salmon allocations in accordance with the Allocation Policy for Pacific Salmon.

In 2018, the preseason forecast for Skeena Sockeye was for a low return. As a result all targeted commercial and recreational fisheries were closed at the start of the season. The Department continued to engage with Skeena First Nations to further discuss options for developing a FSC harvest plan considering the low expected returns of Sockeye. This resulted in general support of collaborative discussions through the Skeen First Nations Technical Committee (SFNTC) that resulted in the continued implementation of a First Nations FSC harvest plan for 2018. One of the key recommendations from the SFNTC was to maintain the increased minimum aggregate escapement to 600,000 Sockeye as a management goal. The FSC trigger of 625,000 Sockeye was maintained by First Nations along with a precautionary approach to sockeye harvesting by First Nations in FSC fisheries at the start of the season. Along with the poor pre-season expectations for Chinook returns, the Department also implemented a complete recreational closure to salmon retention of the Skeena River from May 9 to August 6 to reduce recreational harvesting impacts on returning Chinook stocks and also support FSC access to other species. Better than anticipated returns of both Skeena Sockeye and Chinook enabled FSC Sockeye fisheries to proceed at full levels in July once the Skeena Sockeye run was upgraded in-season, based on the Tyee Test Fishery.

Inland Demonstration fisheries took place on the Skeena River; however poor returns of Nass Sockeye precluded any demonstration fisheries from taking place on that river system. The ESSR Sockeye fishery also took place on Babine Lake in 2018.

Full harvest opportunities for First Nations FSC fisheries were in effect for all areas except for some early pre-season cautions listed above for Skeena Sockeye.

9.2.4 RECREATIONAL AND COMMERCIAL OBJECTIVES

2018/2019: The objective was to manage fisheries for sustainable benefits consistent with established policies.

The primary objective in the recreational fishery to maintain the expectation and opportunity to catch fish in a stable manner was achieved. In the commercial fishery, harvest opportunities were planned based on the identification of commercial surpluses and based on the commercial allocation plan.

9.2.5 POST SEASON REVIEW OF COMPLIANCE MANAGEMENT OBJECTIVES

Fishery officers carry out inspections on vessels, buying stations, processors, transporters, cold storage facilities, brokers, restaurants and retailers. In-season and future compliance and enforcement activities are adjusted, in consideration of the outcomes of the inspections program. The annual post-season review of the inspection program further informs C&P about the successes of the program and where to align resources to provide the greatest value to Canadians.

10 NORTHERN BC FIRST NATIONS FISHERIES

10.1 FISHERY MONITORING AND CATCH REPORTING INITIATIVES

The *Strategic Framework for Fisheries Monitoring and Catch Reporting in Pacific Fisheries* (see Section [1.6.4](#)) is being applied to all fisheries across the region including First Nations FSC fisheries. Work includes assessing the ecological risk of fisheries as they are currently managed and ensuring monitoring and reporting programs provide sufficient information to appropriately manage for those risks. The First Nations Fishery Council (FNFC) and other area aggregate groups have assisted in engagement 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 Nations Band offices.

10.1.1 ABORIGINAL HARVEST MANAGEMENT SYSTEM

Since the year 2000, Fisheries and Oceans Canada have been working with First Nations groups to design and develop electronic recording and reporting systems for First Nations FSC catch data, to improve the efficiency and accuracy of reporting FSC catch and other fishing information used by Aboriginal fishery managers and the Department. The 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 harvester designation system, allowing First Nations to track FSC effort and harvest as well as other fishing information for their members.

The initiative first utilized a Microsoft Access database used by interested First Nations groups within the Pacific Region, including the BC Interior area, South Coast and the Central Coast. In the late 2000's approximately 34 First Nations groups employed this software application with different success rates, with a few sending FSC data to DFO's Regional catch database. In 2010, work started on compiling all aspects of the 34 current MS Access databases into one (1) system called the Aboriginal Harvest Management System (AHMS) that could be customizable for each Nation's needs. Since 2010 new Nations have been brought onboard each year bringing the total in 2018 to 16 First Nation's currently using AHMS throughout the Region, with 6 First Nations still using MS Access databases. FSC data is now being maintained by DFO within KREST (the Kept and Released Estimation Survey Tool).

For more information please contact Aleta Rushton at 250-230-1227.

10.1.2 CHINOOK AND COHO CODED WIRE TAG (CWT SAMPLING)

CWT target sample rates are established by the Department to meet bilateral Pacific Salmon Treaty standards. The minimum required sample rates are 20% of the estimated catch of the fishery to recover a minimum quantity of CWTs from indicator stocks. CWT sampling programs in First Nations fisheries are comparable in overall design to CWT sampling in commercial and recreational fisheries but may be different in some aspects to recognize the differences in First Nations economic or demonstration fisheries and FSC fisheries, to recognize regional differences in priorities for CWT sampling, and to integrate sampling into First Nations catch monitoring programs.

In economic and demonstration fisheries, sampling for CWTs is a mandatory catch monitoring requirement in Chinook and Coho retention fisheries that intercept CWT indicator stocks.

Where needed, the Department will:

- 56) Count the landed Chinook and Coho catch by adipose fin-clip status of randomly selected landings or at fish processing plants using designated observers and sample the landed catch to collect snouts from fish that contain CWTs, or
- 57) Work with First Nations catch monitoring programs to establish comparable requirements.

In FSC fisheries, the success in achieving the 20% target sample rate relies on CWT sampling that is integrated into the catch monitoring program or on individual submissions of Chinook or Coho heads to catch monitors or to First Nations Salmon Head Depots. Sample rates may also be known as submission rates in these fisheries. Essential requirements for the “submission-style” sampling for CWTs are:

- 58) Submission of heads from hatchery-marked (adipose fin-clipped) Chinook and Coho. With mass marking, not all hatchery-marked Chinook and Coho contain a CWT, but the missing adipose fin is the only external clue to identify the possibility of an internal CWT.
- 59) Completed head label(s) attached to each head with required catch information including location caught and date caught. For salmon caught together (same date and location), one label may be placed in a sealed bag with multiple heads.
- 60) Provision of catch information (number of hatchery marked kept Chinook and Coho) to monitoring programs.

First Nations Salmon Head Depots with head labels exist in communities where submission-style programs are established. Servicing and maintenance of First Nations Salmon Head

Depots will be delivered by Department employees. In submission-style programs, information about the origin of their fish will be provided to individuals and First Nations when CWT dissection results are available.

For additional information or locations of First Nations Salmon Head Depots:

Salmon Head Recovery Program

Telephone: 1-866-483-9994 (toll-free)

10.1.3 FISHERY MONITORING AND CATCH REPORTING RISK ASSESSMENT TOOL

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 directs that an ecological risk assessment be undertaken for all fisheries to determine the level of monitoring required to provide information necessary to manage for the ecosystem risks posed by a fishery, while allowing for final monitoring and reporting programs to reflect the fishery's unique characteristics.

Risk assessments are performed using an Excel-based tool that provides for a consistent approach to a structured conversation regarding ecological risk and other resource management considerations. For salmon, the draft risk assessments are planned to be initially completed by DFO, then presented to harvesters for review, comment, and revision through existing advisory processes established for fisheries management purposes.

Should the risk assessment indicate a gap between the current level and target level of monitoring identified through the risk assessment, options to address the monitoring gap are to be identified through discussion between DFO and harvesters. The feasibility of these options (e.g. cost, technical considerations etc.) is also to be considered through these discussions. The Strategic Framework directs that monitoring and reporting programs must be both cost-effective and tailor-made for a fishery; as such, a collaborative approach is required.

Where monitoring options are determined to be feasible, the current monitoring and reporting program is to be revised to incorporate these options so the program provides sufficient information to resource managers to manage the ecological risk of the fishery effectively.

Where monitoring options are not feasible, alternative management approaches are required to reduce the ecological risk posed by the fishery. If there is no gap between the current and target level of monitoring, then the management approach would not require any change.

As of January 2019, the Department is in the process of gathering feedback on and will subsequently be finalizing a draft national Fishery Monitoring Policy. That national Policy—an evolution of the existing Strategic Framework—looks to bring consistency in the development, delivery and evaluation of monitoring programs for all federally-managed wild fisheries in Canada, and will ultimately supersede the existing Pacific Framework.

More information on the Pacific Framework and risk assessment is available on the internet at:

www.pac.dfo-mpo.gc.ca/fm-gp/docs/framework_monitoring-cadre_surveillance/page-1-eng.html

10.2 COMMUNAL LICENCE HARVEST TARGET 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 the details of the FSC fishery including the dates, times, methods, locations of harvest. Communal licences for Northern Coastal First Nations are typically multi-species and are issued on an annual basis. Shorter duration amendments to licences are also issued on occasion.

Fisheries and Oceans Canada seeks to provide for the effective management and regulation of First Nations fisheries through the negotiation of mutually acceptable and time-limited Fisheries Agreements, frequently referred to as AFS agreements. Where agreement is reached, agreed-to fisheries provisions form the basis of the communal licence issued by DFO. Where agreement cannot be reached, Fisheries and Oceans Canada will nonetheless issue an Aboriginal communal fishing licence to the group based on DFO's best understanding of the group's Aboriginal fishery.

Target harvest amounts for communal licences in Northern BC are outlined in [Table 10.2-1](#) below. Actual opportunities and catches will be dependent on, among other factors; in-season stock strength, management measures taken to ensure conservation of individual stocks, community needs of First Nations, and alternative sources of salmon if preferred species are not available locally due to low abundance.

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. The department's operational approach and criteria can be found online at:

<http://www.pac.dfo-mpo.gc.ca/consultation/fn-pn/fnfc-2014/docs/aboriginal-fishing-peches-autochtones-eng.pdf>

Table 10.2-1: Communal Licence Harvest Target 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 |

10.3 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, and increasing participation in commercial fisheries as part of relationship-building with the Department. Since 1994-95, when the ATP was first launched and including PICFI, 481 commercial licences have been relinquished for Aboriginal groups.

Discussions regarding demonstration fisheries that will provide commercial opportunities for First Nations and allow for experimentation and testing of inland fisheries are on-going with First Nations and stakeholders through the Commercial Salmon Allocation Framework process. For 2019, as in previous years, the focus with First Nations will be on experimenting mainly in terminal areas on abundant stocks. These fisheries will be conducted separately from FSC fisheries, using the same harvest decision guidelines as the commercial fishery and fish

harvested will be off-set with licences voluntarily relinquished from the commercial fishery. The demonstration fisheries proposed are described in Treaty Fisheries

10.4 TREATY FISHERIES

NISGA'A FISHERIES

The Nisga'a Treaty came into effect on May 11, 2000. Under the treaty an 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 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 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

More information on this Treaty can be found at:

Nisga'a Final Agreement

<http://www.aadnc-aandc.gc.ca/eng/1100100031292/1100100031293>

More information on the Treaty process can be found at:

<http://www.BCtreaty.net/>

Refer to Section [12](#) – Species Specific Salmon Fishing Plans for the specific domestic and commercial allocations.

II NORTHERN BC RECREATIONAL FISHERIES

Recreational fishing opportunities for salmon are regulated by the *British Columbia Sport Fishing Regulations, 1996* made under the *Fisheries Act*. The regulations are detailed in the online *British Columbia Sport Fishing Guide*: <http://www.bcsportfishingguide.ca>. As there are frequent in-season changes, especially for salmon, you are advised to check the online *British Columbia Sport Fishing Guide* for restrictions in the intended area of fishing before going on your trip.

In addition to finding detailed information on tidal and freshwater salmon sport fishing regulations in the *British Columbia Sport Fishing Guide*, the 'Conditions of Licence', as printed to your licence document, advice regarding licence requirements, such as catch recording and species restrictions such as catch limits.

To sign up to have recreational fishery notices sent directly to your email, there is a link to subscribe to fishery notices on the left hand side of the *British Columbia Sport Fishing Guide* web page. Fishery Notices include important alerts to in-season changes for areas and species. The Sport Fishing Institute of BC has recently developed the 'FishingBC App', a free app you may optionally download to your mobile device if you wish to receive up-to-date sport fishing regulation details. The app accesses data made available through the Government of Canada's Open Data Portal Initiative; learn more at <http://open.canada.ca/en/open-data>.

A Vision for Recreational Fisheries in British Columbia was developed cooperatively by DFO, the Province of BC and the Sport Fishing Advisory Board (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 document is available at: <http://www.pac.dfo-mpo.gc.ca/consultation/smon/sfab-ccps/docs/rec-vision-eng.pdf>

II.1 FISHERY MONITORING AND CATCH REPORTING INITIATIVES

The SFAB has been working with DFO on initiatives to strengthen fishery monitoring and catch reporting in the recreational fishery. To this end, a plan has been developed to meet the objectives of the Strategic Framework for Fishery Monitoring and Catch Reporting in Pacific Fisheries (see sec. 1.6.4). The requirement to report catch is a condition of the Tidal Waters Sport Fishing Licence. Licence holders must report information on their recreational fishing activity and catch or provide biological samples to DFO representatives when requested.

The Department collects information used to estimate boat based angling harvest of finfish in marine waters and salmon in fresh waters throughout BC using a variety of methods. Recreational harvesters may be requested by a Fishery Officer or designated DFO

representative, such as a creel interviewer, to provide mandatory catch and effort information or biological samples either on the water or at the dock. Creel surveys for boat based angling in marine waters are the main source of recreational catch and effort information in the highest risk fisheries.

This requirement also includes responding to email requests through the monthly Internet Recreational Effort and Catch - iREC – survey, which started in 2012. Continuing from 2018/19, fishers that are randomly selected for the iREC survey are now advised at time of licence purchase, and have their iREC survey online access code printed to their licence. Learn more about the iREC survey at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/irec/index-eng.html>

This survey provides monthly estimates of effort and catch for areas, months, and fishing methods not covered by the marine creel surveys, which cover only boat based angling. The methods covered by the iREC survey include angling, trapping, beach collecting, and diving for all sport caught species. The iREC survey methodology was peer reviewed and approved by the Canadian Science Advisory Secretariat (CSAS). Efforts are now underway to implement use of iREC results in months and areas not covered by creel surveys, starting with critical species such as halibut and Chinook salmon.

A separate online survey - the Internet Annual Recreational Catch (iARC) survey - annually requests catch records of 20,000 licence holders. In this survey licence holders are asked to provide the catch records as written on their licences for Chinook, lingcod, and halibut. Information on this survey is available at: <http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/irec/iarc-eng.html>

Finally, the Department is continuing to work with identified groups - sport fishing guides, fishing lodges, associations – with the assistance of the Sport Fishing Institute of BC to implement logbooks in areas of highest risk or areas conducive to reporting through the use of logbooks. The latter includes areas such as the central coast, Kyuquot Sound, Port Hardy, and parts of PFMA 13 where there are concentrations of lodges and guided effort. In addition to paper log 'books', the Department has developed a Recreational Electronic Logbook (Rec E-Log) as a tool to record catch and other fishing information and to report this information to the Department. Data recorded is retained by the client for reference and is sent to DFO for further analysis.

11.2 CHINOOK AND COHO CODED WIRE TAG (CWT) SAMPLING

Essential requirements for the sampling for CWTs in recreational fisheries are:

- Submission of heads from hatchery-marked (adipose fin-clipped) Chinook and Coho. With mass marking, not all hatchery-marked Chinook and Coho contain a CWT, but the missing adipose fin is the only external clue to identify the possibility of an internal CWT.
- Completed DFO-supplied head label(s) attached to each head with required catch information including location caught and date caught. For salmon caught together (same date and location), one label may be placed in a sealed bag with multiple heads.
- Provision of catch information (number of hatchery marked kept Chinook and Coho) to DFO catch monitoring programs.

CWT target sample rates are established by the Department to meet bilateral Pacific Salmon Treaty standards. The minimum required sample rates in recreational fisheries are 20% of the estimated hatchery-marked catch to recover a minimum quantity of CWTs from indicator stocks. It is not cost effective or possible to acquire this quota through direct sampling of recreational fisheries due to the wide distribution of the fishery throughout the year and throughout the province. Instead, the success in achieving the 20% sample rate relies on submissions by anglers to a network of Salmon Head Depots. Because of the reliance on fisher-provided samples, sample rates are also known as submission rates in recreational fisheries.

Salmon Head Depots exist at more than 250 locations in BC and are situated at marinas, tackle stores, fishing lodges, and hatcheries. Depot operators provide head labels and store the heads in freezers or buckets containing a brine solution. Servicing and maintenance of Salmon Head Depots will be delivered by a federal government contractor or by Department employees. Information about the origin of their fish will be provided to anglers, guides and depots, when CWT dissection results are available.

While the majority of CWTs are collected from submissions to Salmon Head Depots, recreational harvesters are also required as a condition of the Tidal Waters Sport Fishing Licence to provide biological samples (salmon heads) to Department representatives when requested.

For additional information or locations of Salmon Head Depots:

Telephone: Salmon Head Recovery Program, 1-866-483-9994 (toll-free)

Search: DFO Salmon Head Recovery

11.3 RECREATIONAL ELECTRONIC LOGBOOKS

The development of an improved catch monitoring regime, including reporting standards, will continue to be a priority in the management of recreational fisheries. Since 2007 the Department has been working with Sport Fishing Institute of BC, and identified groups - sport fishing guides, fishing lodges, and associations - to develop a Recreational Electronic Logbook (Rec E-Log) as a tool to collect catch and other fishing information and to report this information to the Department. In 2019/20, the Department will continue to collaborate with the Sport Fishing Institute and the local Sport Fishing Advisory Boards to review options for the use of a Recreational Electronic Logbook Program with these identified groups.

- 1) Rec E-log data collected is retained by the client for reference and sent to DFO for further analysis. Depending on location and business needs, there are up to three components to the Rec E-Log. On Water or Mobile Component – This component can be installed on any smartphone device (Blackberry/Android and iPhone). Catch and other fishing information, is captured by GPS location at sea, by individual fishers. Data can be sent from the device or exported to the Lodge Component.
- 2) Dockside Component – Captures catch and other fishing information at the dock as fishers and guides return from fishing.
- 3) Lodge Component – Data from the On Water and Dockside components are exported to this application. Uploaded data can be reviewed for correctness and a number of printed reports can be generated. The application has a mapping component, which allows catches to be displayed for those with a GPS location. Data from this component can be easily sent to the Department.

Development of all components is now complete. In 2019/20, the Department will continue to collaborate with the Sport Fishing Institute and the local Sport Fishing Advisory Boards to develop a deployment strategy for the application(s).

12 NORTHERN BC COMMERCIAL FISHERIES

12.1 FISHERY MONITORING AND CATCH REPORTING INITIATIVES

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.

Risk assessments are performed using an Excel-based tool that provides a consistent approach to a structured conversation regarding ecological risk and other resource management considerations. Draft risk assessments will be initially completed by DFO, then presented to harvesters for review, comment, and revision through existing advisory processes established for fisheries management purposes. Where no advisory process exists, engagement will occur through alternative means.

Should the risk assessment indicate a gap between the current level and target level of monitoring identified through the risk assessment, options to address the monitoring gap are to be identified through discussion between DFO and harvesters. The feasibility of these options (e.g. cost, technical considerations) is also to be considered through these discussions. The Strategic Framework directs that monitoring and reporting programs are both cost-effective and tailor-made for a fishery. As such, a collaborative approach is required.

Where monitoring options are determined to be feasible, the current monitoring and reporting program is to be revised to incorporate these options so the program provides sufficient information to resource managers to manage the ecological risk of the fishery effectively. Where monitoring options are not feasible, alternative management approaches are required to reduce the ecological risk posed by the fishery. If there is no gap between the current and target level of monitoring, then the management approach would not require any change.

Appendix 8 outlines the initial draft Catch Monitoring and Reporting Risk Assessments for Pacific Salmon completed to date, which are required under the current *Strategic Framework for Fishery Monitoring and Catch Reporting in the Pacific Fisheries*.

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

In 2013, a number of catch monitoring programs were developed to address deficiencies that have been identified with the minimum requirements. These programs will continue in 2019 with revisions to update approaches and potentially include additional areas and objectives. While all fisheries will be required to meet catch monitoring requirements over time, fisheries identified for the programs at this time are: Area E Gill net: Sockeye (Fraser River) and Area G Troll: Chinook (WCVI). Details on the catch monitoring programs are being discussed with Area Harvest Committee representatives and will be communicated via fishery notices and the 2018 Conditions of Licence.

12.2 CHINOOK AND COHO CODED WIRE TAG (CWT) SAMPLING

In 2019, Fisheries and Oceans Canada will use designated observers (CWT samplers) who are federally-contracted to the DFO Mark Recovery Program to sample the entire catch from randomly selected vessels at fish landing stations or processors. CWT target sample rates are established by the Department to meet bilateral Pacific Salmon Treaty standards for statistically reliable data. The minimum required sample rate is 20% of the estimated catch in all Chinook or Coho retention fisheries that intercept CWT indicator stocks. CWT target sampling rates may be adjusted in-season for high abundance or to meet additional CWT program requirements to recover a minimum quantity of CWTs from indicator stocks.

Sampling for CWTs is a mandatory catch monitoring requirement for commercial salmon fisheries. Conforming to the *Fishery (General) Regulations*, when requested, the master or owner of fishing vessels and the owner or any person who has the care, charge or control of a fish landing station must permit access to the catch and provide CWT samplers with assistance that

is reasonably necessary to enable them to perform their duties according to DFO-approved sampling protocols including:

- i) Making the fish readily accessible to the CWT samplers;
- ii) Providing samplers with a suitable work area; and
- iii) Permitting CWT samplers to remove the head from the fish free of charge

In the past, Chinook and Coho were checked for a missing adipose fin to indicate that it had a CWT. Due to mass marking, it is necessary to use electronic equipment such as handheld wands or tube detectors to recover CWTs in most fisheries. Because detection rates may be affected by sampling technique, it is important to ensure CWT samplers are given adequate time and opportunity to sample the entire catch of each vessel selected. Incomplete or unrepresentative sampling of CWTs in fisheries is a serious concern because it generates unknown bias in stock identification for fisheries management, stock assessment, hatchery assessment, and implementation of Pacific Salmon Treaty management regimes.

For more information, please contact Kathryn Fraser at 250-756-7371 or Doug Herriott at 250-756-7383.

12.2.1 RETENTION OF FREEZER TROLL CHINOOK AND COHO HEADS

These requirements apply to all troll licences, unless the license is listed in a fisheries notice that identifies the troll licenses that are exempted from retaining salmon heads during the fishing season.

Head Retention: Troll vessel masters that are freezing their catch at sea must retain all heads from Chinook and Coho. Recognizing that vessels 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'. 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.

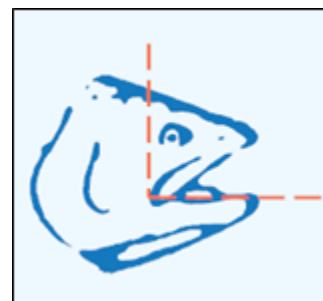


Figure 12.2-1: Fish Head CWT Portion

Head Storage: Heads must be stored in Salmon Head Recovery Program bags with labels. Bags and labels are available free of charge from the Department. Heads must be kept frozen until delivery and each bag must contain only the heads from a single week of fishing (where weeks

run from Sunday to Saturday). All bags must be labelled completely and securely closed. Bags and labels can be obtained in three ways:

- i) Pick them up at DFO offices announced via fishery notice,
- ii) Contact DFO toll-free at 1-866-483-9994 to make arrangements for shipping, or
- iii) Obtain them from CWT samplers at fish landing stations.

Head Delivery: The vessel master shall ensure that all bags containing heads are offloaded at the first designated fish landing station at which Chinook or Coho catch is offloaded.

In accordance with the conditions of the Area F troll license, all vessels are required to bring all Chinook and Coho heads (or snouts) 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 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 (prior to 2013) led to the requirement that 50% of the Area F troll fleet retain salmon heads to ensure that Canada met its obligation to sample a minimum of 20%. In recent years, salmon head recovery compliance by the Area F troll fleet has improved allowing for a reduction in the number of vessels that retain salmon heads and a sampling rate of approximately 30%.

For 2019, the exemption rate will be approximately 70%. As in past seasons, licenses that were insufficiently diligent in carrying out their conditions of license to bring in all Chinook and Coho heads will not be exempted in 2019.

For complete head retention requirements, vessel masters freezing their catch at sea should refer to their conditions of license.

12.3 IMPLEMENTATION

Due to uncertainty of both timing and size of returning salmon runs, many commercial openings are not confirmed until a few days prior to the actual opening. Also, the management plan for any area may change in-season. Fishing Areas, Subareas or portions thereof, provisions for extensions, opening patterns and the duration of the fishing season can all be adjusted based on factors such as weak stock concerns, target stock abundance, fishing effort, rate of gear selectivity, domestic allocations and other factors.

This fishing plan is designed to minimize the incidental harvest and by-catch of a range of stocks of concern (see Section [105](#) – Management Objectives for Stocks of Concern). Fisheries

that occur on the South Coast may be required to release all non-target species to the water with the least harm, depending on local stock concerns.

Under circumstances where there appears to be an abundance of fish that could support a commercial fishery and that fishery is not specifically addressed in the IFMP, DFO will address requests to fish as identified below:

- 1) Attempt to verify the abundance using available observations and information of the salmon species and to determine whether or not it could provide a fishing opportunity consistent with conservation objectives and Allocation priorities for First Nations food, social and ceremonial and recreational fisheries. DFO will consult with local First Nations regarding any interests or concerns they may have.
- 2) If (1) is addressed and there appears to be adequate numbers of fish to support some level of commercial fishery; then a precautionary approach will be taken and information requirements will be discussed and agreed upon. Initially, a limited number of vessels may be licenced, and independent catch verification will be required, with timely reporting of harvest data.
- 3) Regular dialogue between harvesters, DFO, and others as appropriate, will take place throughout the fishery including whether the scope of the fishery could be increased and other relevant parameters.

DFO continues 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 harvest, pacing fisheries to maximize value of the harvest and developing more cooperative fishing arrangements between harvesters.

In addition to existing demonstration fisheries reviewed and approved prior to 2016; the collaborative work of the Department, FNFC SCC and CSAB through the initiative to update the CSAF has resulted in a common assessment process to review and develop flexible harvest arrangements (CSAF Demonstration fisheries). Additional detail on CSAF demonstration fisheries proposed for this season and information on other related work is outlined in [Appendix 6](#).

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.

12.4 COMMERCIAL SALMON ALLOCATION IMPLEMENTATION PLAN

This section describes the commercial salmon allocation implementation plan. An overview of the process to update the CSAF initiated in 2013, with principles and guidelines approved in 2015 and an evaluation framework for assessing CSAF demonstration fishery proposals implemented in 2016. For background information on the CSAF initiative please see:

<http://www.pac.dfo-mpo.gc.ca/consultation/smon/saf-crrs/index-eng.html>

COMMERCIAL ALLOCATION IMPLEMENTATION PLAN FOR THE 2015 – 2019 PERIOD

Over the course of 2019, DFO will be engaging with harvesters and in particular the CSAB to review existing sharing arrangements between fleets. Should any recommendations come forward on the commercial allocation implementation plan, they will be described and consulted on in advance of the 2020 fishing season through the existing IFMP process. DFO staff are currently working with the CSAB and SCC on how best to engage in discussions and what supporting information is required.

Shares recommended by the CSAB were intended to apply for a 5 year period (2015 through 2019 seasons) with provision for a review after year 4 (2018 season) to determine if adjustments should be made to any sharing arrangements in subsequent years. An earlier review could have been considered if circumstances warranted by majority agreement of the commercial salmon advisory board.

The sharing arrangements described in this plan 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.

Although best efforts will be made to achieve these allocation targets/shares, no guarantees are offered that allocations will actually be achieved in any given year. The achievement of these shares will depend upon the ability to fish selectively and the conservation needs of the resource. In the event that allocations are not achieved, no compensatory adjustments will be made to future allocations.

As in previous 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 and First Nations economic fisheries).

The tables below provide a complete list of allocation shares by gear type, species and production area for fisheries starting in 2015 for a period of 5 years with a review planned following the 4th year. Three new production were approved in 2015 to clarify sharing arrangements associated with the Pacific Salmon Treaty for troll harvests of AABM Chinook and AB line Pink fisheries.

SOCKEYE

| Description | Areas | Seine A | Gill Net C | Troll F |
|----------------------|-----------------------|------------------|------------------|--------------|
| Skeena/Nass | 1, 3 to 5, 101 to 105 | 25% | 75% | * |
| Central Coast | 6 to 8 | 80% ^a | 20% ^b | * |
| Rivers/Smiths Inlets | 9 to 10 | 5% | 95% | ^c |

Notes on Sockeye allocation (north):

* by-catch provisions

^a share reflects current Sockeye by-catch during Pink directed fisheries

^b potential for re-negotiation of sharing arrangements in event of a future directed Sockeye fishery

^c potential for future re-negotiation

| Description | Areas | Seine B | Gill Net D | Gill Net E | Troll G | Troll H |
|---|-------------------------------|---------|------------|------------|-------------------|---------|
| South Local | 23 | 60.0% | 40.0% | 0.0% | 0.0% ^c | 0.0% |
| South -Fraser | 11 to 20, 29, 121, 123 to 127 | 48.5% | 21.6% | 25.1% | 0.0% ^d | 4.8% |
| South-Fraser – Large return year (eg. 2010, 2014, 2018) | 11 to 20, 29, 121, 123 to 127 | 48.5% | 21.6% | 25.1% | 0% ^d | 4.82% |

Notes on Sockeye allocation (south):

^c potential for future re-negotiation

^d a 1% share to occur in large Fraser River return years only. A 1% reduction will be proportionately applied across other fleets in those years

PINK

| Description | Areas | Seine A | Gill Net C | Troll F |
|-------------|--------------------------------------|---------|--------------------|---------|
| North | 1, 2E, 2W (even), 3 to 5, 101 to 105 | 75.5% | 22.5% ^a | 2.0% |
| Central | 6 to 10 | 95.0% | 5.0% ^b | * |

Notes on Pink allocations (north):

* by-catch provision

^a Skeena sharing 75% seine: 25% gill net

^b potential for future re-negotiation

| Description | Areas | Seine B | Gill Net D | Gill Net E | Troll G | Troll H |
|-------------|------------------------------------|---------|------------|------------|-------------------|---------|
| Fraser | 11 to 20, 29, 121, 123 to 127 | 82.5% | 4.0%* | 3.0%* | 0.5% ^c | 10.0% |
| Mainland | 12 to 13 (mainland inlets only) | 73.0% | 9.0% | 0.0% | 0.0% | 18.0% |

Notes on Pink allocations (south):

* Pink by-catch provision required for fisheries on more abundant species

^c potential for future re-negotiation. Pink by-catch required for fisheries on more abundant species

<<NEW PRODUCTION AREA STARTED IN 2015>>

| Description | Area | Troll F |
|-----------------------------|------|---------|
| A-B line Pink troll fishery | 101 | 100% |

CHUM

| Description | Areas | Seine A | Gill Net C | Troll F |
|-------------|---------------------------------|--------------------|--------------------|---------|
| North | 1, 2E, 2W, 101 to 111, 130, 142 | 54.0% | 43.0% | 3.0% |
| North | 3 to 5 | 55.0% ^b | 45.0% ^b | * |
| Central | 6 to 10 | 45.0% ^c | 55.0% | * |

Notes on Chum allocations (north):

^b recent Chum non-retention; fishery allows by-catch of Chum only

^c currently Chum non-retention

* by-catch provision

| Description | Areas | Seine B | Gill Net D | Gill Net E | Troll G | Troll H |
|---------------|--------------------|-------------------|------------|------------|---------|---------|
| South Inside | 11 to 19, 28 to 29 | 63.0% | 19.2% | 12.0% | 0.0% | 5.8% |
| Nitinat | 21 to 22 | 65.5% | 0.0% | 34.5% | * | 0.0% |
| South Outside | 23 to 27 | 0.0% ^d | 98.0% | 0.0% | 2.0% | 0.0% |

Notes on Chum allocations (south):

* by-catch provision

^d potential for future re-negotiation if Chum populations re-build

Commercial allocation sharing arrangements in Johnstone Strait are; seine Area B – 77 percent; gill net Area D – 17 percent; and troll Area H – 6 percent.

COHO

| Description | Areas | Seine A | Gill Net C | Troll F |
|-------------|-------------------------------|---------|------------|---------|
| North | 1 to 10, 101 to 111, 130, 142 | 12.5% | 6.5% | 81.0% |

Notes on Coho allocations (north):

| Description | Areas | Seine B | Gill Net D | Gill Net E | Troll G | Troll H |
|---------------|-------------------------|---------|------------|------------|--------------------|---------|
| South Inside | 11 to 20, 29 | TBD | TBD | TBD | TBD | TBD |
| South Outside | 21 to 27, 121 to 127 | 9.5% | 9.5% | 1.0% | 80.0% ^a | 0.0% |

Notes on Coho allocations (south):

^{TBD} currently no directed fisheries in this area. Will be reviewed should future directed opportunity develop.

Principles to be drafted regarding how to distribute impacts.

^a Coho taken primarily in offshore fisheries

CHINOOK

| Description | Areas | Seine A | Gill Net C | Troll F |
|-----------------------------|---------------------------------|---------|---------------------|---------------------|
| Northern BC AABM Chinook | 1, 2E, 2W, 101-105, 130, 142 | * | * | 100.0% ^a |
| Central | 6 to 10 | * | 100.0% ^b | * ^c |

<< NEW PRODUCTION AREA STARTED IN 2015 >>

| Description | Areas | Seine A | Gill Net C | Troll F |
|--------------|--------|---------|---------------------|---------|
| North-Inside | 3 to 5 | * | 100.0% ^d | * |

Notes on Chinook allocations (north):

* by-catch provisions

^a Northern BC AABM Chinook harvest

^b near-terminal fisheries (primarily hatchery origin)

^c review potential re-entry of troll into Production Areas 6 + 7. By-catch provisions

^d by-catch provision and near-terminal directed fisheries (e.g. Skeena)

| Description | Areas | Seine B | Gill Net D | Gill Net E | Troll G | Troll H |
|------------------------------|-----------------------------|-------------------|------------|--------------------|---------------------|---------|
| South- Inside | 11 to 20, 29 | 1.0% ^e | 3.0% | 90.0% ^f | 0.0% | 6.0% |
| South - WCVI AABM Chinook | 21, 23 to 27, 121 to 127 | * | * | 0.0% | 100.0% ^g | 0.0% |

<< NEW PRODUCTION AREA STARTED IN 2015>>

| Description | Areas | Seine B | Gill Net D | Gill Net E | Troll G | Troll H |
|--------------------|----------|-------------------|--------------------|-------------------|--------------------|---------|
| South- WCVI Inside | 21 to 27 | 5.0% ^h | 75.0% ⁱ | 5.0% ⁱ | 15.0% ^j | 0.0% |

Notes on Chinook allocations (south):

^e subject review pending completion of southern BC Chinook initiative

^f directed Fraser Chinook fishery

^g this is WCVI AABM Chinook fishery

^h Area 23 sharing arrangement currently 33.3% seine: 66.7% gill net. May need to review

ⁱ Area 25 fishery (potential for future review. 75% fishery to Area D (e.g. Conuma Bay fishery); potential 5% to Area E if future surplus at Nitinat; otherwise default to Area D)

^j winter troll fishery

12.5 TEST FISHING

DFO uses a range of methodologies to determine in-season stock abundance and composition. Test fisheries play an essential role in providing information to support in-season abundance estimation, driving determination of TACs and ensuring that conservation objectives are met in fisheries management. From 2007- to 2012, \$58 million (Larocque Relief Funding) was provided to support the test fishery programs. In 2012, an amendment to the Fisheries Act granted the Minister the authority to allocate fish for financing purposes.

To implement this authority, DFO adopted a two-track approach.

Track one included a transition, where feasible for existing projects previously funded by Larocque relief funding to the new use-of-fish authority for a period starting April 1, 2013 pending completion of track two.

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. The draft National Policy for Allocating Fish for Financing Purposes has been implemented since 2013 and the Policy has recently been finalized.

While an objective of the use-of-fish arrangements is for fish revenues to address program costs, in a number of cases since 2013, low salmon stock abundance has curtailed test fish revenues, and alternative funding arrangements to support programs have been pursued.

There is one project proposed for the North Coast for 2019; the Tyee Test Fishery in Area 4 (Skeena River), which the North Coast Skeena Stewardship Society will continue to administer the test fishery via a collaborative agreement with the Department.

DFO will work in close collaboration with resource users to ensure that the fisheries data collections necessary to set TACs and to ensure conservation will continue to be undertaken.

12.6 LICENSING

12.6.1 NATIONAL ONLINE LICENSING SYSTEM (NOLS) CLIENT SUPPORT - LICENSING SERVICES

All Fish harvesters/Licence Holders/vessel owners are now required to use the National Online Licensing System (NOLS) to view, pay for and print their commercial fishing licences, licence conditions and/or receipts.

Training materials, including step-by-step guides and a detailed user training manual, are available online (<http://www.dfo-mpo.gc.ca/FM-GP/SDC-CPS/licence-permis-eng.htm>) to guide users of the system in completing their licensing transactions. The Department also provides client support and assistance on how to use the system via e-mail at fishing-peche@dfo-mpo.gc.ca or by calling toll-free at 1-877-535-7307 (7:00 AM to 8:00 PM Eastern, Monday to Friday).

For more information on how to register and use the system, visit the Department's website at the website address above, or contact our client support.

LICENCE RENEWAL

In order to retain the privilege to be issued a commercial licence in the future, it is critical that you renew your licence and pay the applicable licence renewal fees through the online system on an annual basis, whether fishing takes place or not. Should the licence not be renewed by March 31st of the next calendar year, the licence eligibility will cease to exist and DFO will be unable to consider any licence issuance requests in the future.

12.6.2 LICENCE CATEGORY

A salmon licence, category A, N or FA, is required to commercially harvest salmon. Salmon, category A, licence eligibilities are limited entry and vessel-based. Category FA and N licence eligibilities are party based and must be designated to a commercially registered fishing vessel that meets established length restrictions. Category N licence eligibilities are held by the Northern Native Fishing Corporation (NNFC). Category FA is communal commercial licence eligibilities where an aboriginal group is the licence eligibility holder.

Vessels authorized to fish under the authority of a salmon licence are also permitted to catch and retain species described in Schedule II, Part 2 of the Pacific Fishery Regulations, 1993,

transport species caught by other vessels, and be designated to fish under the authority of a category Z licence.

12.6.3 LICENCE CATEGORY BACKGROUND

Salmon has been a limited entry vessel based fishery since 1969. In 1996 under the Pacific Salmon Revitalisation Plan, area and gear selection were introduced in the salmon fishery. Salmon licensed vessel owners selected a gear and area for each licence eligibility. Gear selections were seine, gill net or troll. Gear selection was permanent. Area selections for seine were area A or B; for gill net, areas C, D or E; and, for troll, areas F, G or H. A vessel may hold only one licence eligibility per area. Area licensing has been a feature of salmon management for the past 10 years with area selections processes in 1996, 2000, 2006 and 2007. Initial area selection was for a four year period.

Licence Stacking was also introduced in 1996 as a method to decrease the number of vessels actively participating in the fishery while allow vessel owners to fish in more than one area or with more than one gear.

12.6.4 LICENCE RENEWAL FEES

Salmon licence renewal fees are available at full fee and reduced rates. Annual licence renewal fees are based on the length of the vessel. Reduced fee eligibilities must be held on vessels owned by aboriginal individuals.

| | Vessels under 9.14m | Vessels 9.14m and over | Seine Vessels |
|------------------------------|---------------------|------------------------|---------------|
| Aboriginal Individual | \$ 380.00 | \$ 650.00 | \$ 2670.00 |
| Non-Aboriginal | \$ 430.00 | \$ 710.00 | \$ 3880.00 |

There is no annual licence renewal fee for communal commercial category FAG, FAT, and FAS licences.

12.6.5 LICENCE ISSUANCE

Renewal of a Category A licence and payment of the fees must be done on an annual basis to retain the privilege to be issued the licence in the future, regardless of whether or not fishing is carried out. Those category A licenses not renewed by March 31, 2020 will cease and licence issuance requests will be unable to be considered in future.

Upon the Department receiving the required payment, and information, the licence will be issued and notification will be sent via email to advise Licence Holders 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.

Prior to annual licence issuance of a communal commercial licence, licence eligibility holders are required to annually designate the fishing vessel to hold the licence. This must be done by navigating to the 'Submit a Request' menu selection within the National Online Licensing System (NOLS). Full instructions are available at: <http://www.dfo-mpo.gc.ca/fm-gp/sdc-cps/products-produits/request-demande-eng.htm>).

Prior to annual application, vessel owner(s)/licence eligibility holders are required to:

- 4) Meet any Ministerial conditions placed on the licence eligibility
- 5) Ensure any conditions of the previous year's licence are met, such as:
 - Catch reporting requirements (i.e. all trips are closed), and that all harvest logs are submitted. Submit a nil report if no fishing occurred. For further information contact the Commercial Salmon Catch Monitoring Unit at cscmu-usccs@dfo-mpo.gc.ca; and
 - Submission of all fish slips (for further information contact the Regional Data Unit at (604) 666-2716).
- 6) the designated vessel's overall length does not exceed the maximum vessel length of the category FAG, FAT, FAS licence eligibility

Copies of the Nil Reports and Statutory Declarations may be found under 'Additional Licensing Services Forms' on the licensing webpage located at:
<http://www.pac.dfo-mpo.gc.ca/fm-gp/licence-permis/index-eng.html>.

LICENCE DOCUMENTS

Salmon licence documents are valid from the date of issue to March 31, 2020.

Replacements for lost or destroyed licence documents may be obtained by reprinting the licence documents through the National Online Licensing System.

For further licensing information see:

<http://www.pac.dfo-mpo.gc.ca/fm-gp/licence-permis/index-eng.html>

DESIGNATION OF HARVESTERS TO FISH A COMMUNAL COMMERCIAL LICENCE

Under the *Aboriginal Communal Fishing Licence Regulations*, every person working on a vessel that is fishing under authority of a Communal Commercial Licence must be designated by the First Nation that holds the licence. The designation must be made in writing and include the person's name and reference the Communal Commercial Licence.

First Nations licence holders interested in obtaining an example template to use to designate their fish harvesters may contact a DFO Resource Manager or Pacific Fishery Licensing Unit office.

VESSEL REPLACEMENT (CATEGORY A ONLY)

The owner(s) of a category A licensed Salmon vessel may make an application to replace the commercial fishing vessel. Both the replacement vessel and the vessel being replaced must have a survey on file with the Pacific Fishery Licence Unit (PFLU) or submitted with the vessel replacement application. Vessels must be surveyed according to the Department guidelines.

Communal commercial licenses are not eligible for vessel replacement as the licence eligibility is party-based.

A salmon licence eligibility may not be split from other vessel based licence eligibilities.

Replacement vessels for salmon licence eligibilities where no stacking is involved remain at exact overall length or smaller of the existing vessel.

Temporary vessel replacement (e.g. total loss of vessel) requests are not eligible for any of the salmon stacking allowances.

STACKING

Processing of salmon licence eligibility stacking applications ends May 31. Stacking applications are not accepted from June 01 to November 30, annually.

A salmon licence may not be split from other licence eligibilities.

Different gear and area licence eligibilities may be combined on one vessel. That is, one vessel may have a salmon gill net licence eligibility and a salmon troll licence eligibility. Multiple licence eligibilities of the same gear may be stacked on one vessel, as each licence eligibility will have a different area. A vessel may not hold more than one licence eligibility for the same area.

An area change request may only be made at the time of submission of an application for licence stacking and the area change may only be made for the licence eligibility that is being stacked. The owner of the receiving vessel must make the request by completion of the applicable section on the form.

Reduced fee category A licence eligibilities may be stacked with either another reduced fee licence eligibility or a full fee licence eligibility, but the receiving vessel must be owned by an aboriginal person.

Category N licence eligibilities may be stacked with any category A licence eligibility, full fee or reduced fee, or another category N licence eligibility, in compliance with all stacking rules except that they will not be tied to the other salmon licence eligibility. Stacking a category N licence eligibility does not result in a change of licence area for the category N licence eligibility.

Category F licence eligibilities may be stacked with any category A or category N licence eligibility or another category F licence eligibility, in compliance with all stacking rules except that they will not be tied to the other salmon licence eligibility. Stacking deadline dates may vary for category F licence eligibilities due to the sign off dates of communal or contribution agreements. Stacking a category F licence eligibility does not result in a change of licence area for the category F licence eligibility.

For the purpose of stacking licenses, a single salmon licence eligibility may be stacked to a vessel that is up to 30% longer in overall length than the overall length of the vessel from which the licence eligibility is being removed.

Salmon licence eligibilities that are married to other licence categories (or another salmon licence) may be stacked, but the additional 30% in overall length is not applicable and the salmon stacking cannot result in the stacking of other licence categories, except where permitted for that licence category.

Please visit Salmon page for further information at:

<http://www.pac.dfo-mpo.gc.ca/fm-gp/species-especes/salmon-saumon/fisheries-peches/licence-permis-eng.html>

TRANSPORTING

Please see Part III of the commercial conditions of licence for transporting of salmon for additional details and information.

Transporting conditions for the salmon fisheries include a requirement to submit fish slips for all fish transferred to any commercial vessel transporting salmon; the requirement to maintain a

salmon transfer log on board the vessel receiving fish; and a phone-in hail requirement to the DFO Fishery Manager.

The requirement to submit fish slips is currently in place for commercial salmon licence eligibility holders and has previously been a provincial requirement for transport (packer) vessels. It is a federal requirement for transport (packer) vessels to submit fish slips as a condition of licence.

The phone-in hail will alert DFO fishery managers prior to an opening that the vessel is active for transporting salmon in a fishery and will provide managers a better understanding of the fishing effort during an opening. After each opening, there is a requirement to phone the DFO Fishery Manager with information on where the transport (packer) vessel received fish, approximate amount of fish, total number of landings, and the time and location of the final offload. No service provider will be needed to deliver on this requirement in 2018.

The salmon transfer log will identify when, where and from whom fish were received. This transfer log will be required to be on board the vessel and produced for examination when requested by a representative of DFO. The completed transfer log must also be submitted to the Regional Data Unit at the end of the calendar year. No service provider will be needed to deliver on this requirement in 2018. This condition will complement the existing fish slip program and support improved enforcement of unreported harvests and unauthorized sales in the commercial salmon fishery.

A copy of the salmon transfer log template is available on DFO website at:

<http://www.pac.dfo-mpo.gc.ca/fm-gp/licence-permis/licence-commercial-eng.html>

12.6.6 FISHER IDENTIFICATION NUMBER

Unique Fish Harvester Identification Numbers (FINs) are assigned to all Pacific commercial harvesters. Once the FIN is issued to a fish harvester, it does not change from year to year

12.7 MANDATORY HARVEST LOG AND IN-SEASON CATCH REPORTING PROGRAM

12.7.1 COMMERCIAL HARVEST LOGS

A mandatory harvest log and in-season reporting program for catch information is required in all commercial fisheries. Harvest logs are a record of fishing activities and are required to be kept under the conditions of licence and can be administered through either a hard copy (paper) logbook version or an electronic (E-Log) version, unless otherwise specified. Commercial

salmon harvesters are required to maintain a harvest log of all harvest operations and are responsible for any associated financial costs.

To facilitate reporting of catch information, the Commercial Salmon Advisory Board (CSAB) has identified the following service provider for the paper logbook program:

Paper logbook Program:

Archipelago Marine Research Ltd. (AMR)

525 Head Street

Victoria, BC

V9A 5S1

Telephone: (250) 383-4535

Fax: (250) 383-0103

Toll Free: 1-877-280-3474

Website: <http://www.archipelago.ca>

Email: SalmonRegistration@archipelago.ca

Harvesters may also meet their reporting licence conditions through the E-log Program. The service provider for the E-log Program is:

E-log Program:

M.C. Wright and Associates Ltd.

Telephone: (250) 753-1055

Website: <http://www.mcwrightonline.com>

Email: support@mcwrightonline.com

To make arrangements for their harvest log requirement, harvesters are required to enlist the services of one of these identified service providers. Sample logbook pages are provided in with this change in the final IFMP.

Harvesters can continue to use their existing E-logs as long as software changes are not required to meet licence conditions. If software changes are required to meet licence conditions, harvesters can select to use a paper logbook or arrange to pay for any associated costs for software updates with a service provider.

The Department has been working with the Canadian Pacific Sustainable Fisheries Society to address conditions set out in the Marine Stewardship Council action plan for the continued certification of BC Pink, Chum and Sockeye salmon fisheries. Several conditions within the action plan identify the need for improved reporting of catch, particularly in reference to Endangered, Threatened and Protected species. The harvest logs have been updated and

include additional materials for identifying groundfish, seabirds, and marine mammals at the species level. Harvesters are encouraged to provide the correct identification of all catch to the species level in the harvest logs and when submitting catch reports to the service provider.

12.8 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 in place:

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

12.9 RETENTION OF LINGCOD BY SALMON TROLL

To help meet the conservation and sustainability objectives under groundfish integration, an individual transferable quota (ITQ) management system has been established for the lingcod fishery.

Implementation of an integrated commercial groundfish fishery has monitoring and reporting requirements 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 cover catch.

Requirements include the following (less than 500 lbs. of lingcod per trip):

- Vessel must have or acquire sufficient lingcod to cover catch.
- Transportation requirement – All lingcod must be transported by the licenced 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.
- 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.

12.10 SELECTIVE FISHING / CONSERVATION MEASURES

In 2019, the Department will work with Area Harvest Committee representatives 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, seine bunt mesh size, brailing and sorting for seine vessels, and revival tanks.

12.10.1 OTHER CONSERVATION MEASURES

DFO will once again be seeking the co-operation of harvesters in minimizing fishing activities in Robson Bight. This is part of a long-term management plan to afford protection to the killer whale populations that frequent this area during periods from mid-May to early October. Fish harvesters are requested not to moor in the Robson Bight area. See Section [Error! Reference source not found.](#) – Northern and Southern Resident Killer Whales for more information. Information on this management initiative can also be obtained from Department charter patrol vessels on the grounds and from Fisheries and Oceans Canada offices.

12.10.2 ROCKFISH CONSERVATION MEASURES IN SALMON TROLL

BOCACCIO

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

The Bocaccio mortality cap for the salmon troll fishery is 3.6 tonnes and beginning in 2013/2014, the salmon troll fishery has been subject to daily limits specifically for Bocaccio (please refer to Conditions of Licence for details).

More information on the Bocaccio Rebuilding Plan is available in Appendix 9 of the Groundfish IFMP located at:

<http://www.dfo-mpo.gc.ca/Library/361424.pdf>

Subsequent to the introduction of the rebuilding plan, in November 2013, COSEWIC reassessed Bocaccio as “Endangered”. As such, the federal government is required to consider listing Bocaccio under SARA. This work will include engagement with stakeholders and First Nations.

YELLOWEYE

Based on updated science information, the Department has set out a near term plan for stepped reductions of total Yelloweye outside population harvest from the estimated total catch mortality of 287 MT in 2014 to a mortality cap of 100 MT over 3 years (2016-17 to 2018-19).

Taking into consideration advice provided by fishing interests, the Department has introduced management measures to make steps towards the mortality cap described above and is continuing to have discussions to define more comprehensive plans for achieving the 100 MT mortality cap. As retention of Yelloweye is already prohibited in the salmon troll fishery the Department is focusing on improved reporting and avoidance of Yelloweye in this fishery.

Additional information is available in Appendix 9 of the Groundfish IFMP located at:

<http://www.dfo-mpo.gc.ca/Library/361424.pdf>

12.11 COMMERCIAL FISHERIES

Details regarding specific commercial fisheries are contained in the Section [12](#) - Species Specific Salmon Fishing Plans.

12.12 COMMERCIAL DEMONSTRATION FISHERIES

The Department has conducted extensive consultations with the commercial salmon industry and First Nations concerning fisheries reform and renewal. Changes in the fishery will be designed to improve biological and economic performance of the fishery.

In an ever-changing environment such as resource conservation, a group may want to explore special harvesting initiatives or new management approaches to develop flexible fisheries with

greater harvester control that improve product quality, increase value to the fleet and have better catch monitoring and compliance with catch limits.

The Department is interested in continuing to explore innovative ways to access TAC more efficiently, to increase market value of the product, or to access TAC that may be unavailable due to conservation concerns or that a full fleet fishery is unable to access.

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.

Details regarding demonstration fisheries that the department is considering are contained in Section [12- Species Specific Salmon Fishing Plans](#).

In addition to existing demonstration fisheries within Section [12](#), additional opportunities to demonstrate flexible harvest arrangements were initiated in 2016 in support of updates to the Commercial Salmon Allocation Framework (CSAF). Guidelines and principles associated with work to update the CSAF as well as CSAF demonstration fishery proposals received for consideration in 2018 are included in [Appendix 6](#)

12.12.1 TRANSITION OF FIRST NATION INLAND DEMONSTRATION FISHERIES TO REGULAR COMMERCIAL FISHERIES

In 2014, an independent review and evaluation of the Pacific Integrated Commercial Fishing initiative (PICFI) was completed by Malatest and Associates and a number of recommendations were made. A full copy of the report is available at:

<http://www.dfo-mpo.gc.ca/ae-ve/evaluations/15-16/6B172-eng.html>

Recommendation four was related to development a transition strategy moving demonstration fisheries to regularized fisheries. In response to the review, the Department has developed a transition strategy for the in-river First Nation demonstration component of PICFI. The Department identified criteria to be incorporated into an evaluation framework which will enable the transition of Inland First Nations Demonstration fisheries to regular commercial fisheries in the future.

The Department outlined next steps to support a transition strategy which was described in Appendix 8 of the 2018-2019 South Coast Integrated Fisheries Management Plan. The transition strategy has been approved to proceed on a case by case basis of successful inland demonstration fisheries developed thru the Pacific Integrated Commercial Fishery Initiative (PICFI). The evaluation criteria in the strategy will assess their sustainability and ability to meet management objectives, including the ability to harvest fish allocations, conservation objectives and fishery management requirements. If the criteria are met, the transition to an ongoing commercial fishery would occur and will be defined in an Access Agreement. This work is intended to improve consistency and transparency in how the Department assesses, implements, and reviews demonstration fisheries while supporting integrated commercial fisheries consistent with the vision and principles of Pacific Fishery Reform. If further information is required, contact Resource Manager Dale Michie – dale.michie@dfo-mpo.gc.ca

12.13 TRANSFER GUIDELINES FOR THE TEMPORARY TRANSFER OF COMMERCIAL SALMON SHARES

In consideration of discussions with the First Nations SCC, the CSAB and any feedback received, these guidelines will be reviewed and may be updated annually. **For 2019 there are no proposed updates and the transfer guidelines have remained unchanged since 2017.**

These guidelines address the transfer of commercial salmon shares between the following groups:

- a) Area A-H Fishery participants with a defined percentage share of the commercial TAC
- b) Area A-H fleets or portions of fleets or individual licences
- c) Marine Demonstration Fishery participants
- d) In-river Demonstration Fishery participants
- e) First Nations with one or more Area A-H licences
- f) First Nations entities who are signatories to current arrangements or area provided communal licences allowing sale that provides a defined commercial share of salmon for the given year including;
 - Economic Opportunity agreements
 - Harvest Agreements
 - Demonstration Fisheries

Transfers of harvest shares may occur when there is a formal arrangement outlining possibilities as defined by the Guiding Principles and Operational Considerations below, (approved by DFO) between the original share-holders and the recipient. Requests can include transfer from downstream to upstream locations, and vice versa. These arrangements should identify mechanisms pre-season that will be used for transfers to ensure proper management and accounting of shares (Actual transfers may occur in-season; e.g. between ITQ fishery participants using established transfer request processes). For transfers of commercial licences, arrangements will need to be made in advance of the fishery opening for which the transfer is intended to apply to ensure appropriate allocations associated with the licence can be set aside.

In-season proposals to transfer uncaught commercial Total Allowable Catch (TAC) allocations between the above groups will be reviewed and DFO will determine whether to allow the transfer of some or all of the uncaught TAC.

Requests for temporary transfers of commercial salmon shares 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:

- 1) Result in similar or better 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) Respect the Common property nature of the fisheries resource: subject to Principle 3, access to the resource does not imply ownership of the resource or any portion of the resource, and is not conferred irrevocably to individuals.
- 7) Support opportunities to utilize Canadian commercial total allowable catch while respecting conservation requirements.
- 8) First Nations commercial fisheries and Area A-H commercial fisheries conducted in tidal waters will be managed under common and transparent

rules for each gear type. For example, First Nations commercial troll fisheries conducted in tidal waters where Area F licences are permitted to operate will be managed in accordance with the same rules as the Area F commercial fishery for those tidal waters.

- 9) First Nations commercial fisheries conducted in non-tidal waters will be managed under transparent rules that are consistent with the rules used to manage marine commercial fisheries that target similar stocks associated with that production area.
- 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 Transfers:

- 1) 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.
- 2) 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.
- 3) In most cases, transfers will be based on a percentage share of the available commercial TAC. Alternate approaches for calculating transfer shares may be considered.
- 4) In-season transfers may occur if pre-season plans outline possibilities. For share transfers between Area A-H 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.
- 5) DFO will not be responsible for leading or facilitating the negotiation of transfer arrangements between parties.

- 6) 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).
- 7) If, despite the best efforts of any commercial harvest group, it becomes apparent that it will be 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 any other commercial harvest group already holding a clearly defined percentage share of the Canadian commercial total allowable catch, on a case by case basis, assuming that harvest can occur using fishing methods, times and locations permitted for that commercial harvest group.
- 8) Transfers of commercial salmon allocations must consider shares of all stocks that will be harvested in the recipient area.
 - a) 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 allocated to the Kamloops Lake inland demo fishery will be only for the proportion of Thompson Chinook encountered in the marine commercial troll fishery). Alternative approaches may be considered in specific circumstances (e.g. allocation may not be proportionally reduced if harvest of an allocation in a terminal area reduces impact on stocks of conservation concern). DFO will document the rationale for its decision and make it publicly available.
 - b) 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 example: access to a harvest share of Fraser Pink salmon might require the fishing group or individuals to have some Sockeye remaining in their harvest share of co-migrating Fraser Sockeye.
 - c) For co-migrating stocks/species 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). Limiting stocks/species will only be transferred to the extent needed to harvest the target stock transfer

amount with residual amounts being available for the use by all other commercial harvest groups with a share of the targeted stocks.

- d) Transfers into areas that require management adjustments need to be accounted for in determining TAC (e.g. a similar accounting process to current Fraser Sockeye).
 - e) 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.
- 9) 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.
 - 10) 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.
 - 11) Proposals for transfer arrangement must include contingencies for situations where shares are exceeded. Parties not complying with agreed-to arrangements could face enforcement actions.
 - 12) 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.
 - 13) 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 transfer requests must undergo new process of application, review and approval from DFO.

I3 SPECIES SPECIFIC SALMON FISHING PLANS

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13.1 NORTHERN CHINOOK SALMON FISHING PLAN

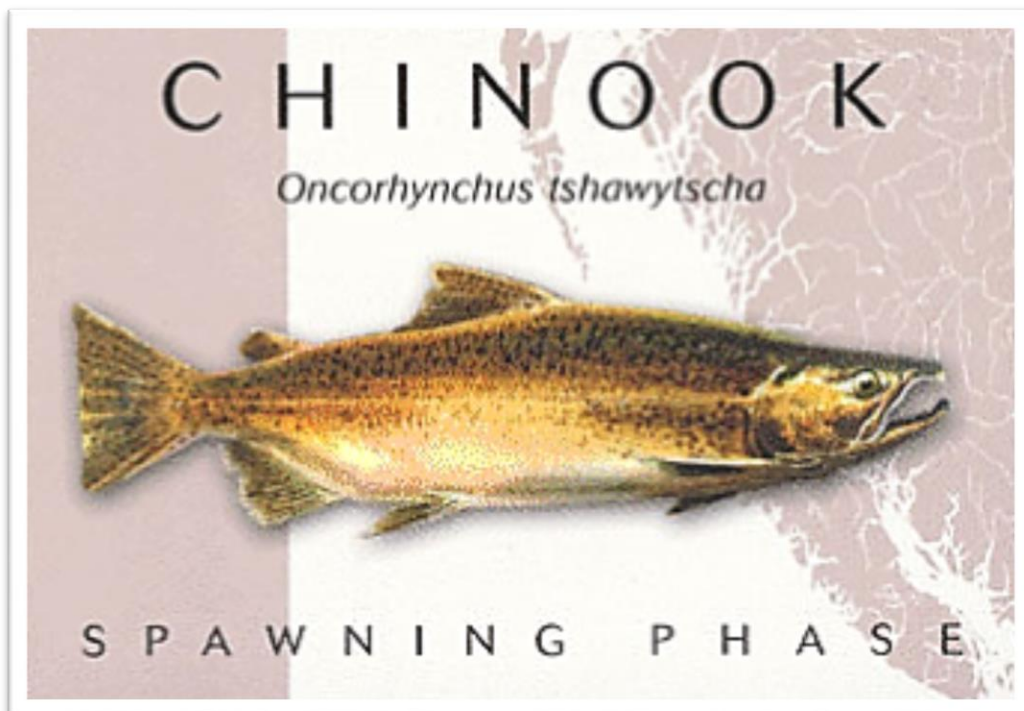
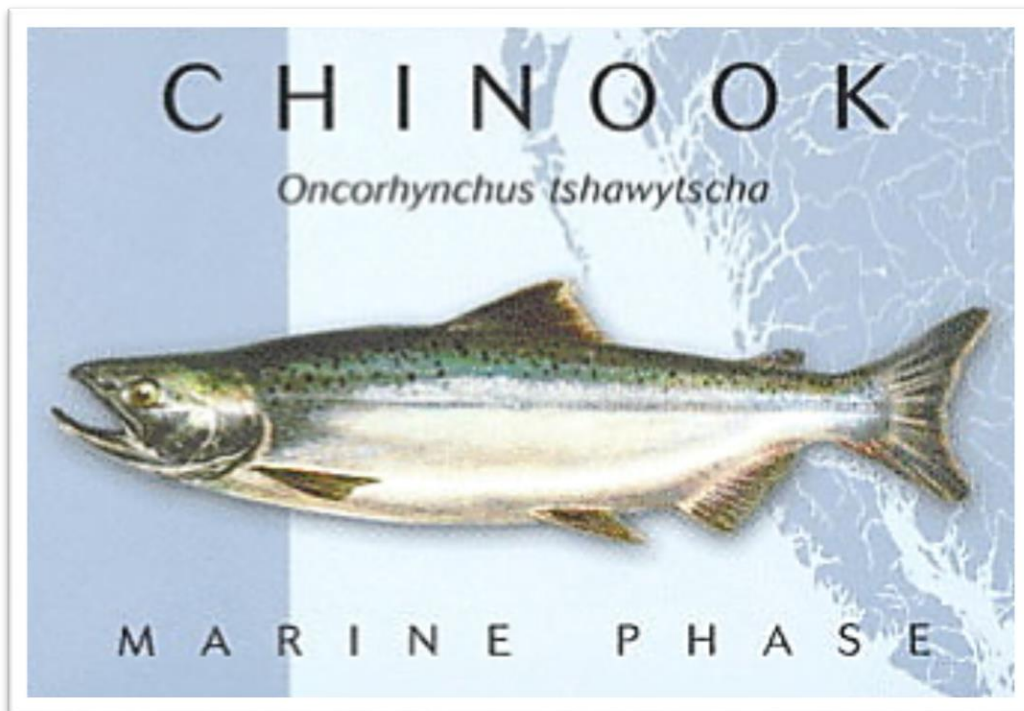


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13.1.1 NORTHERN CHINOOK OVERVIEW

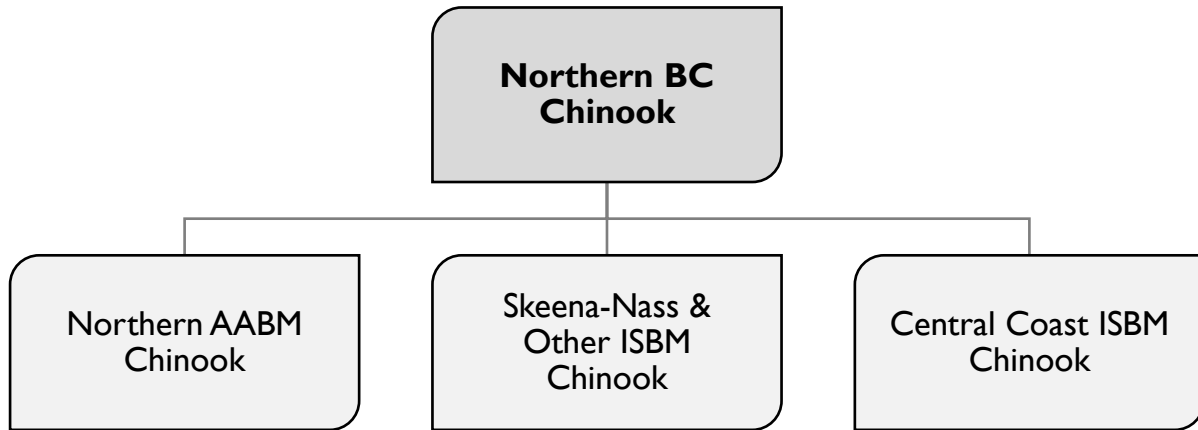


Figure 13.1-1: Overview of Northern Chinook Salmon

Chinook salmon fisheries in British Columbia are managed under the umbrella of the Pacific Salmon Treaty (PST) between Canada and the United States of America. Canada's domestic management considerations include stocks of concern, allocations between sectors, and application of selective fishing practices.

With the exception of the Transboundary Rivers, the basis for managing fisheries impacting Chinook salmon 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 of the PST was revised for implementation in 2009 to maintain the abundance-based management framework established under the 1999 Agreement until 2018. This chapter was recently re-negotiated and the updated version implemented as of January 1, 2019 for a ten-year period.

Further explanation and the text of the Chinook salmon agreements can be found on the PSC website at:

<http://www.psc.org/Index.htm>.

Accounting of Chinook salmon fisheries for the PST occurs from October 1 in one calendar year, to September 30 in the next calendar year.

Two types of fisheries are identified in the PST, Chapter 3:

- Aggregate Abundance Based Management (AABM) fisheries; and
- Individual Stock Based Management (ISBM) fisheries.

Within the PST Chinook management framework, Canadian domestic policy further defines fishing opportunities. The domestic objectives or policies which affect fishing opportunities include: conservation, Canada's constitutional obligations to First Nations, the Wild Salmon Policy (WSP), An Allocation Policy for Pacific Salmon, and the Policy for Selective Fishing in Canada's Pacific Fisheries.

13.1.1.1 OVERVIEW OF NORTHERN CHINOOK CONSERVATION CONCERNS

Escapement of northern Chinook salmon declined dramatically in recent years. Reduced survival rates, and productivity, have been observed across British Columbia and South East Alaska. This led to unprecedented declines of northern Chinook in 2017 and triggered significant management measures that were implemented for 2018 salmon fisheries. Post season evaluation of Nass and Skeena Chinook returns in 2018 were above forecast with increases in younger age classes. It is anticipated that returns of Chinook to the Nass and Skeena Rivers in 2019 will be improved, but a precautionary approach to management will continue for the coming season while allowing for some recreational and commercial harvest opportunities.

To address Fraser Chinook conservation concerns for the 2019 season, the Department is implementing a precautionary approach for Fraser River Chinook populations (including Spring 4₂, Spring 5₂, Summer 5₂, Summer 4₁, and Fall 4₁) to support conservation and promote rebuilding. These measures are planned in addition to existing fishery management measures already in place. New management measures are identified for Northern BC AABM troll fisheries.

13.1.1.2 OVERVIEW AABM FISHERIES

Chinook salmon fisheries implemented under the PST AABM management regime include three mixed-stock fisheries:

- Southeast Alaska recreational, net and troll (SEAK)
- Northern British Columbia troll and Haida Gwaii (Queen Charlotte Islands) recreational (NBC); and
- West Coast of Vancouver Island troll and outside recreational (WCVI).

These fisheries are managed to an annual total allowable catch (TAC) based on the forecast abundance of the aggregate of stocks that contribute to each fishery. Annual quotas for each AABM fishery are developed by prediction of Chinook salmon abundance based upon a Cohort analysis model. For NBC fisheries, a single AABM quota is applied to troll fisheries Pacific

Fishery Management Areas (PFMA) 1 to 5, 101 to 105 and 142 and to recreational fisheries in PFMA's 1, 2, 101, 102 and 142.

In Canada, conservation is the first priority in fisheries management. Once conservation obligations are met, priority access is given to First Nations for food, social, ceremonial, and treaty requirements. Once those obligations are met, priority access to Chinook salmon is provided to the recreational fishery, with commercial fisheries next in priority. Once the AABM quota is defined for the combined troll and recreational fishery, the projected recreational catch is subtracted from the TAC, with the remainder allocated to the troll fishery. Thus, the troll fishery is the first fishery to be impacted if stocks of conservation concern require management actions in NBC fisheries. Management constraints to the fishery include management for stocks of conservation concern, minimizing encounters of undersized Chinook salmon and non-target species and minimizing fisheries where legal and sublegal-sized Chinook salmon have to be released.

Canadian Chinook fisheries in all other areas of the North and Central Coast are managed as ISBM fisheries.

13.1.1.3 OVERVIEW ISBM FISHERIES

Under the PST, an ISBM fishery is an abundance-based regime that constrains to a numerical limit the total catch or the total adult equivalent mortality rate within the fisheries of a jurisdiction for a naturally spawning Chinook salmon stock or stock group. For Canadian ISBM fisheries, the agreement identifies a general obligation that limits the total adult equivalent mortality rate across all fisheries for individual stock groups to 63.5% of that which occurred in the 1979 to 1982 base period.

ISBM management regimes apply to all Chinook salmon fisheries subject to the PST that are not AABM fisheries and include marine and freshwater salmon fisheries from northern British Columbia to northern Oregon coast. ISBM fisheries for Chinook salmon in the North and Central Coast include all First Nations fisheries in both marine and fresh waters, all commercial gillnet and seine fisheries, all freshwater recreational fisheries, marine recreational fisheries in PFMA's 3 to 10, 103 to 110 and 130, and troll fisheries in PFMA's 6 to 10, 106 to 110 and 130.

13.1.1.4 NORTHERN CHINOOK ENHANCEMENT INFORMATION

The major BC North Coast DFO operation enhancement facilities that produce chinook are:

- Kitimat River hatchery
- Snootli Creek hatchery

- There are two Chinook salmon exploitation rate indicator stocks in the North Coast that rely on hatchery production of coded wire tagged fry. The Atnarko River chinook indicator stock is produced at the Snootli Creek hatchery and the Kitsumkalum River chinook indicator stock is produced at the Deep Creek hatchery. Deep Creek hatchery does not appear in the list above since it is not a production facility and the fish are raised for assessment purposes only.

The information available at the link below addresses production from major DFO Operations (OPS) facilities, contracted Community Economic Development Program hatcheries (CEDP), larger or more complex Public Involvement Projects (Designated Public Involvement or DPI) operated by volunteers, and Aboriginal Fisheries Strategy (AFS). 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.

There are two datasets available: **Post-Season Production** from the 2017 brood year (i.e. 2018 releases, and numbers on hand for 2019 release), and the **Production Plan**, which includes proposed targets for the upcoming 2019 brood year. These are available at the following website:

<http://www.pac.dfo-mpo.gc.ca/sep-pmvs/projects-projets/ifmp-pgip-eng.html>

13.1.2 NORTHERN AABM CHINOOK

13.1.2.1 SNAPSHOT OVERVIEW AND MAP OF MANAGEMENT UNIT

An AABM fishery is an abundance-based regime that constrains catch or total mortality to a numerical limit computed from a pre-season forecast of abundance, from which a harvest rate index can be calculated, expressed as a proportion of the 1979 to 1982 base period. Although in-season estimates of abundance are permitted under the PST, none have been approved by the Chinook Technical Committee (CTC) for use in Canadian AABM fisheries.

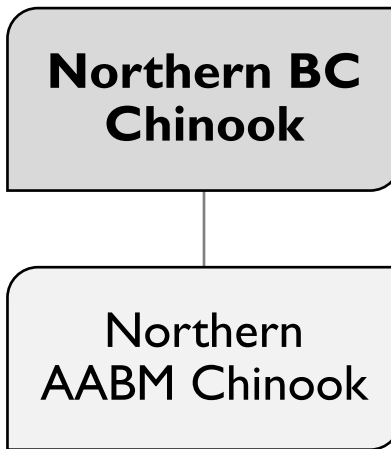


Figure 13.1-2: Overview of Northern AABM Chinook

The Northern AABM fishery includes commercial troll caught Chinook salmon in Pacific Fishery Management Areas 1 to 5, 101-105 and 142 and recreational Chinook fisheries in Haida Gwaii (QCI) in Areas 1, 2, 101, 102 and 142.

The AABM Chinook fishery targets Canadian and U.S. origin wild and enhanced Chinook populations. The main components of the harvest are U.S. and Fraser origin Chinook, however, most BC Chinook conservation units may be encountered in this area. Most of the catch consists of mature fish migrating to spawn but a small portion of the catch includes immature or rearing fish (feeders).

13.1.2.2 STOCK ASSESSMENT INFORMATION

13.1.2.2.1 Pre-season

Stock outlooks that may influence the conduct of NBC AABM Chinook fisheries

| Conservation Unit | Stock Outlook for 2019 |
|---|---|
| Nass / Skeena Chinook | <p>These stocks increased in 2018 after near-record lows in 2017. Below average returns are expected to continue for spring timed Skeena Chinook. Average returns are expected for 2019 summer timed Skeena Chinook. Returns are expected to improve due to the high component of age 4₂ fish seen in 2018. 2018 represented an increase over generally low productivity among stream type stocks in the north-west. Chinook returns to smaller Skeena CU's were low in 2016 and 2017 but improved in 2018.</p> |
| WCVI Chinook | <p>Chinook escapements into 'wild' rivers have been variable in recent years with returns to the Kyuquot area (Nootka-Kyuquot CU) continuing to outpace returns to the Clayoquot Sound area (SWVI CU). The latter continue to be of concern. This variability and low returns into Clayoquot is expected to continue in 2019. Wild WCVI Chinook remains a stock of concern.</p> <p>(2018 Outlook Category was 1)</p> |
| Fraser River Chinook Stocks of Concern | <p>Fraser Spring 4₂:</p> <p>The Outlook is stock of concern. Expectations for 2019 are for continued exceptionally depressed abundance due to low parental escapements in 2015, ongoing unfavorable marine and freshwater survival conditions and low productivity. Escapements in 2018 again declined compared to the parental escapements in 2014. For those systems where escapement estimates are available, escapements were ~12% of the parental escapement and were far below estimated S_{gen} values for Spius, Coldwater and Nicola, despite hatchery supplementation.</p> <p>Fraser Spring and Summer 5₂:</p> <p>The Outlook is stock of concern. Expectations are for continued exceptionally low abundance related to depressed parental escapements, continuing unfavourable marine and freshwater survival conditions and low productivity. Escapements in 2018 were variable, but on average, for Spring 5₂ Chinook escapements attained only 50% of parental escapement level. For Summer 5₂ Chinook, escapements declined compared to parental escapements in 2013, and on average attained approximately 40% of the parental escapement.</p> <p>Summer 4₁:</p> <p>The Outlook is low. Marine survival conditions worsened for the 2018 return, and escapements were below parental levels in 2014 for all populations except Little River. Fecundity has been declining for stocks in this management unit, which is contributing to lower</p> |

| Conservation Unit | Stock Outlook for 2019 |
|-------------------|--|
| | productivity than the long term average. Aggregate escapement appears to be ~50% of the parental escapement. |

The Chinook Technical Committee (CTC) provides a final calibration of the Chinook Model annually. The completed calibration provides the Abundance Indices (AI) that are required for determining the pre-season estimated allowable catches for the three AABM fisheries.

Pre-season Abundance indices and associated allowable catches for the October 1, 2018 to September 30, 2019 NBC AABM Fisheries:

| | SEAK | NBC | WCVI |
|------------------------|---------|---------|--------|
| Abundance Index | 3.38* | 0.96 | 0.61 |
| Allowable Catch | 140,323 | 124,800 | 79,900 |

*SEAK uses a CPUE model (not an AI) to determine annual allowable catch

13.1.2.2.2 In-season

Sport and troll catch and effort in NBC are monitored in-season. Genetic samples are collected from Chinook salmon caught in both fisheries and troll fishery samples are analyzed in-season. Troll effort data are monitored to inform the effort based approach to predict WCVI Chinook harvest rates by the Area F Troll fishery.

13.1.2.3 DECISION GUIDELINES AND MANAGEMENT ACTIONS

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

When there is a TAC identified for the AABM management area, targeted Chinook fisheries are planned for recreational and commercial sectors. The table below describes management measures that will be taken to minimize impacts on stocks of concern in AABM Chinook fisheries.

Table 13.1-1: Stock management actions anticipated in Northern British Columbia AABM Chinook fisheries to limit impacts on stocks of concern

| Stock of Concern (constraint) | First Nations (FN) Fishery | Recreational Fishery | Commercial Fishery |
|-------------------------------|---|---|---|
| Nass / Skeena Chinook | No impacts on First Nations fisheries anticipated | No impacts on recreational fisheries anticipated. | Area F –No impacts on troll fisheries anticipated. |
| WCVI Chinook | No impacts on First Nations fisheries anticipated | No impacts on recreational fisheries anticipated | Area F – restrictions in the North Coast troll fishery to limit ER to 3.2%. Time and area closures and effort limits |
| Fraser River Chinook | No impacts on First Nations fisheries anticipated | No impacts on recreational fisheries anticipated | Start date for Chinook retention delayed to August 20 to address concerns for Spring 4 ₂ , Spring 5 ₂ and Summer 5 ₂ Fraser Chinook and support allocation priorities. |

The Department manages domestic stocks of concern using various approaches. Management actions in northern fisheries to reduce impacts on Fraser River 4-2 and 5-2 Chinook includes delaying the start of the Area F Troll fishery to allow these stocks to migrate through the area. The Area F Chinook troll fishery is also managed to limit its catch of WCVI Chinook to 3.2% of the return to Canada. The Department developed and implemented an in-season management tool to estimate the WCVI harvest rate in 2014. This approach uses the historical daily fishing effort daily WCVI Chinook catch derived from DNA-based stock composition estimates and post-season estimates of WCVI returns to Canada.

For 2019, the Area F fishery will not open to the retention of Chinook until August 20 to address conservation concerns for Fraser River Spring 4₂, Spring 5₂, and Summer 5₂ Chinook and also to pass through *not at risk* Summer 4₁ (South Thompson) Chinook that typically comprise 20-30% of troll harvests to the Fraser River to support priority access for Fraser First Nations FSC and Treaty harvest opportunities. As such, many of the normal management practices for the Area F fishery will be amended for the season due to the later start date. For example, while the Department will continue to use the Effort Harvest Rate Management Tool to manage the Area F Chinook fishery to the 3.2% WCVI exploitation rate, the fishery will relax spatial restrictions

on the west coast of Haida Gwaii. The Department will continue to collect and analyze 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 projected catch of Chinook by the Haida Gwaii recreational Chinook fishery for 2019, based on normal limits, is 36,400. 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. In this case, the amount will be divided up amongst licences based on their in-season proportion of the troll TAC, after all transfers have been taken into account.

13.1.2.4 INCIDENTAL HARVEST, BY-CATCH AND CONSTRAINTS TO AABM CHINOOK FISHERIES

AABM fisheries may be subject to constraints due to concerns for specific domestic stocks and or co-migrating species (such as Coho) as described in the table below.

| Fishery Period | Risk of impact on stocks of concern |
|--------------------|---|
| Oct. – Jan | Low risk. This period is outside the migration timing and area for stocks of concern such as WCVI Chinook, Fraser River Spring 42 and Spring and Summer 52 Chinook. |
| Feb. – June | High risk. Specific concerns for WCVI and spring timed Fraser River 4 ₂ and 5 ₂ Chinook as these stocks are prevalent during parts of this period. For 2019 there is heightened concern for Fraser Chinook. Risk declines into July as the majority of Fraser River Spring stocks have migrated out of the area by early July. Impacts on WCVI Chinook are reduced by time and area restrictions. |
| July | <p>Low risk for WCVI Chinook. Spatial restrictions are implemented to avoid areas with higher prevalence of WCVI Chinook. Fishery is managed to ensure NBC troll impacts do not exceed 3.2% ER.</p> <p>Moderate risk for summer timed Fraser River 4₂ and 5₂. Fisheries are concentrated on abundant stocks that migrate through outside management areas in late June and into July to reduce incidence on stocks of concern. Management actions in 2019 include delaying start of the troll fishery until late August to pass more abundant Fraser stocks to higher priority fisheries.</p> |

| Fishery Period | Risk of impact on stocks of concern |
|------------------|---|
| August | Moderate risk. Specific concerns for WCVI Chinook as peak migration of this stock through the area occurs during August. Reduced NBC troll Chinook fishing opportunities during August. |
| September | Low Risk. WCVI Chinook may be avoided by area restrictions. Risk declines through September as most stocks of concern have migrated out of the area in September. |

In addition to the poor outlook for Fraser River Spring 42 and 5₂ and Summer 5₂ Chinook, very poor returns are expected for Chinook across many parts of the region. The Department will therefore apply a cautious management strategy for 2019 that may include TAC reductions in addition to targeted time and area closures in areas where stocks of concern are prevalent. Additional restrictions may be implemented if required.

The Area F Chinook fishery will close on September 30th which is defined as the end of the AABM Chinook fishing year within Chapter 3 of the Pacific Salmon Treaty. All Chinook must be unloaded and validated within 5 days of the closure date.

13.1.2.5 ALLOCATION AND FISHING PLANS

13.1.2.5.1 First Nations Fisheries

Food, Social and Ceremonial

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 north coast First Nations are typically multi-species, and are issued on an annual basis. Licences may also be amended for shorter durations.

Actual opportunities and catches will be dependent on, among other factors; in-season stock strength, management measures taken to ensure conservation of individual stocks, community needs of First Nations, and alternative sources of salmon if preferred species are not available locally due to low abundance.

Refer to Section 10.2 for Communal Licence Harvest Target Amount [Table 10.2-1](#) in Northern BC First Nations Fisheries.

Fishery Monitoring and Catch Reporting

The Strategic Framework for Fisheries Monitoring and Catch Reporting in the Pacific Fisheries is being applied in First Nations FSC fisheries across the region. Work towards this includes assessing current monitoring practices, programs and gaps. The First Nations Fishery Council (FNFC) and other area aggregate groups have assisted in engagement 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 Nations Band offices.

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 electronic 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 as a Microsoft Access program, the database 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. In 2010, work started on compiling all aspects of the approximate 34 current MS Access databases into one (1) VB style system that would be customizable for each Nations' needs. Work on the new system is ongoing.

For more information please contact Aleta Rushton at 250-230-1227.

Treaty Fisheries

There are no Treaty fisheries for Northern AABM Chinook.

13.1.2.5.2 Recreational Fisheries

Sport fisheries in Canada receive priority access over commercial fisheries to Chinook salmon. Two of the largest recreational fisheries in Northern BC (NBC) occur in Haida Gwaii and Chatham Sound. NBC recreational fisheries experienced significant growth until 2005 when

they reached a maximum catch of 82,000 Chinook. Since that time, catches have fluctuated between 40,000-55,000 Chinook salmon annually. In 2018 the estimated tidal sport catch was 36,700 Chinook salmon for Areas 1 and 2 combined.

The recreational fishery in Haida Gwaii is a mixed stock fishery and encounters migrating stocks of Chinook salmon originating from Alaska to California. In North Coast tidal waters, the minimum size limit for Chinook salmon is 45 cm, the daily limit is 2 and the annual limit is 10. The open time is April 1st to March 31st. Barbless hooks are mandatory. The possession limit for salmon is twice the daily limit.

AABM recreational Chinook fisheries occur in the tidal waters surrounding Haida Gwaii, with the majority of effort focused along the shoreline from Masset to Langara Island in Area 1 and between Englefield Sound and Port Louis in Area 2W. Recreational fishing occurs primarily between May and September with peak effort and catch occurring in July and August. The daily aggregate limit for salmon is four (4) per day. The average annual catch of Chinook from 2009 to 2018 is approximately 43,700 Chinook salmon. In 2018 the estimated tidal sport catch was 36,700 Chinook salmon in Areas 1 and 2 combined. However, the recreational Chinook daily limit was reduced from 2 to 1 Chinook per day from June 1 to July 9, 2018.

Updates to recreational fisheries are provided via Fishery Notice and published on the recreational fisheries website at:

<http://www.bcsportfishingguide.ca>

Fishery Monitoring and Catch Reporting

In Haida Gwaii, DFO has been collecting recreational catch data through the Lodge Log Book Program and the Haida Creel Program since 1995. Participation in monitoring and reporting of recreational catch in Areas 1 and 2 has been excellent over the past 25 years. Monitoring is continuing to improve with region-wide initiatives.

13.1.2.6 ALLOCATION

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) for 2019 is 124,800 Chinook.

13.1.2.6.1 Recreational Fisheries

The expected harvest of Chinook by the Haida Gwaii recreational Chinook fishery is 36,400. The recreational harvest will be re-assessed in-season. If the in-season estimate of total annual recreational catch is anticipated to be less than the forecasted amount, a portion of the total

AABM TAC may be reallocated to the Area F troll fishery. If this is the case, the amount will be divided up amongst licences based on their in-season proportion of the troll TAC, after all transfers have been taken into account.

Specific Conservation Measures:

13.1.2.6.2 Commercial Fisheries

The preliminary Area F troll allowable catch is 88,400 (The total AABM for northern BC minus the recreational expected harvest).

Specific Conservation Measures:

The Department is implementing reductions in Chinook harvest targeted for specific stocks of concern in 2019. The Area F Troll Chinook fishery will be delayed to August 20 to allow the majority of Fraser Chinook stocks to migrate through the fishing area. The fishery will be further restricted by area closures to restrict impacts to a maximum 3.2% harvest rate objective on WCVI Chinook.

Allocation

The overall TAC for northern BC Chinook fisheries is calculated using the Abundance Index (AI) determined by the Chinook Technical Committee of the PSC. The commercial TAC is derived by deducting the expected use by the Haida Gwaii recreational fleet from the overall TAC for northern BC AABM Chinook.

The northern BC Chinook TAC is usually available in April each year.

Table 13.1-2: Commercial Allocation Implementation Plan for the 2015–2019 period

| Description | Areas | Seine A | Gill Net C | Troll F |
|--------------------------|------------------------------|---------|------------|---------------------|
| Northern BC AABM Chinook | 1, 2E, 2W, 101-105, 130, 142 | * | * | 100.0% ^a |

Notes on Chinook allocations (north):

* by-catch provisions

^a Northern BC AABM Chinook harvest

AABM Chinook Fishing Plan

Area F Troll Fishing Plan

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

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

The troll fishery is limited in 2019 to 88,400 Chinook. This equates to 368 Chinook for each of the approximately 240 Area F trollers based on an Individual Transferable Quota (ITQ) of 1/240 (i.e. 0.4167%). 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. With the management measures to reduce impacts on Fraser Chinook, the opening of fishery is delayed to August 20. As such, there is expected to be a low likelihood of the fishery exceeding the 3.2% harvest rate on WCVI Chinook. The harvest rate is 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 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 three licence ITQ allocations which equates to 1.25% of the TAC or 1,105 Chinook in 2019. The amount of uncaught quota shall be determined by fisher-supplied catch reports, dockside validations or a combination of the two. 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:

Subareas 1-1, 101-1, 101-2, 101-4, 101-5.

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, 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 degrees 14.976 minutes north latitude and 133° 04.386 minutes west longitude 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 degrees 56.246 minutes north and 133 degrees 17.500 minutes west then true East to 53 degrees 56.246 minutes north and 133 degrees 11.862 minutes west (Hope Point) then to 53 degrees 57.144 minutes north and 133 degrees 07.938 minutes west (Graham Island) then southerly following the shoreline of Graham Island to the intersection with 53 degrees 47.0 minutes north, then to 53 degrees 47.00 minutes north and 133 degrees 10.00 minutes west 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.

Fishery Monitoring and Catch Reporting

The Area F troll fishery has three levels of catch monitoring. This includes fisher-reported catch, dockside validation and dockside sampling of catch. The first level of catch monitoring is provided fisher reported catch logs. Fishers are required to provide a daily record of their catch and releases by species and area within 24 hours of landing their catch. This information is entered into the Fisheries Operating System (FOS) database by a third party service provider.

The second level of catch monitoring is dockside monitoring of Chinook landings which is mandatory in ITQ fisheries. Therefore 100% of all offloads containing Chinook are required to be validated by a dockside validation service provider. All species are accounted for in these offloads. The third level of monitoring is dockside sampling of catch. This sampling program includes DNA sampling of Chinook as well as salmon head recovery in Chinook and Coho to estimate the stock-specific impacts of the troll fishery.

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 2019 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 led to the requirement that 50% of the Area F troll fleet retain salmon heads to ensure that Canada met its obligation to sample a minimum of 20%. Salmon head recovery compliance by the Area F troll fleet has improved, since 2013 and allowed for a reduction in the number for vessels that retain salmon heads.

For 2019, the exemption rate will be approximately 70%. As in past seasons, licences that were insufficiently diligent in carrying out their conditions of license to bring in all Chinook and Coho heads will not be exempted in 2019.

13.1.2.6.3 ESSR Fisheries

There are no ESSR fisheries for northern AABM Chinook.

13.1.3 SKEENA-NASS ISBM CHINOOK

13.1.3.1 SNAPSHOT OVERVIEW AND MAP OF MANAGEMENT UNIT

Escapement of northern Chinook salmon declined significantly until 2017 then recovered somewhat in 2018 with escapement numbers improved over those seen in 2017 and 2016, due in part to improved productivity and also restrictive management measures implemented in 2018. For 2019, a continued precautionary approach will be implemented for the management of Northern Chinook to further promote rebuilding.

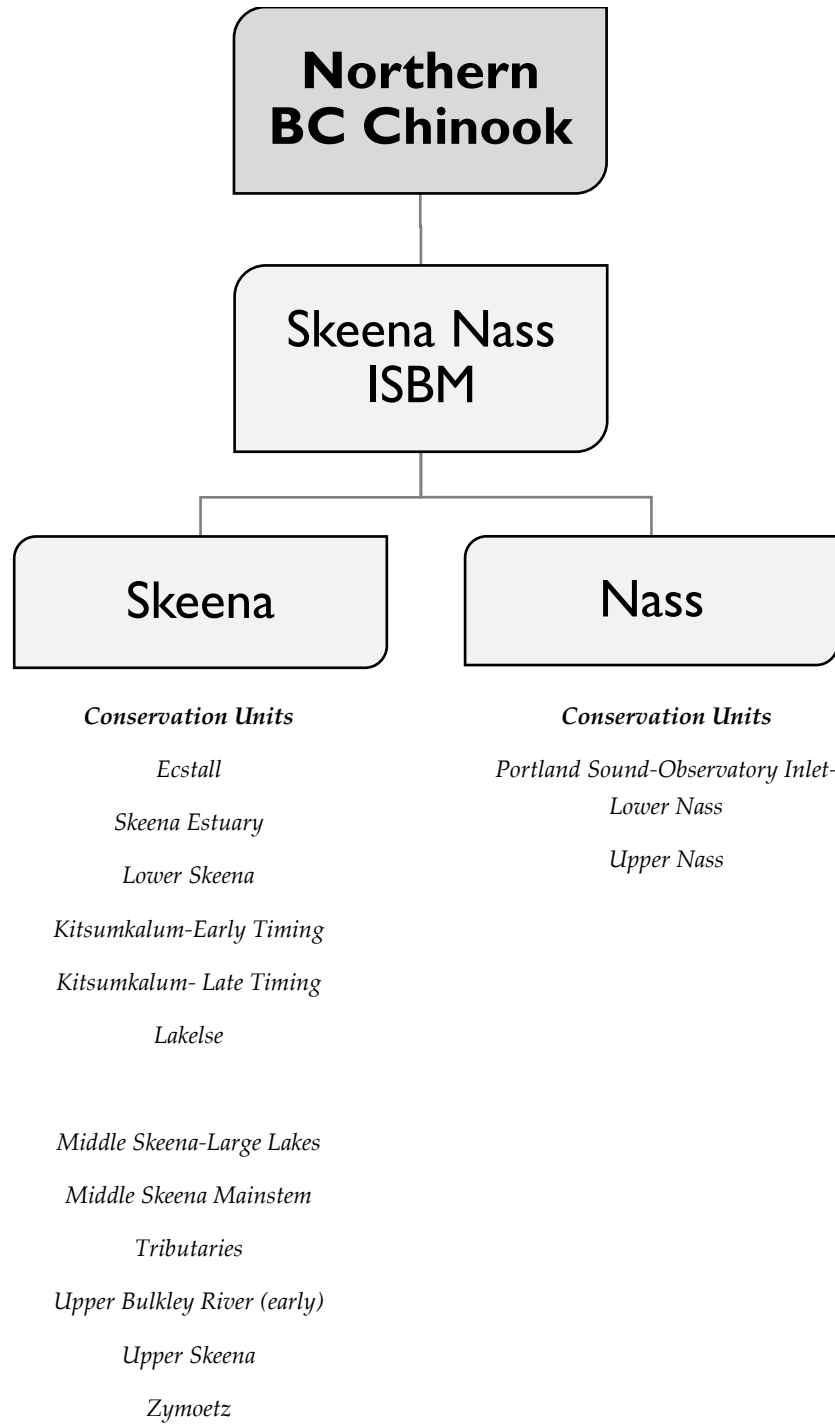


Figure 13.1-3: Overview of the Skeena-Nass ISBM Chinook

13.1.3.2 STOCK ASSESSMENT INFORMATION

13.1.3.2.1 Pre-season

Nisga'a Fisheries and Wildlife has provided an average forecasted return for Nass ISBM Chinook in 2019.

There are no formal pre-season forecasts for Skeena ISBM Chinook stocks however the improvement in 2018 and the very strong age 4 component suggest stronger returns in 2019. The Outlook for Skeena Chinook is considered "average".

13.1.3.2.2 In-season

The status of North Coast Chinook stocks is evaluated primarily by observed escapements to individual streams. On the Nass, in-season assessments of Chinook stocks are conducted by Nisga'a Fisheries through fish wheel catch information. A mark-recapture program is used post-season to estimate Chinook escapements to the Nass River.

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 estimates by the Tyee Test fishery are only available for Sockeye. Tyee Test information requires calibration and this is only possible for Sockeye as a result of Babine fish fence operations which capture the majority of Skeena Sockeye. Salmon returns of other species are more variable as estimates are subject to error as annual run timing and the annual catchability of salmon by the Tyee test fishery net varies. The Department has been requested to further look at the utility of the Tyee Test Fishery as an indicator of in-season Chinook abundance; however, current estimates of Skeena Chinook abundance are based on returns of indicator stocks to the Kitsumkalum River post-season.

13.1.3.3 DECISION GUIDELINES AND MANAGEMENT ACTIONS

The returning run strength to the Nass and Skeena Rivers in 2019 is anticipated to be improved over returns seen in recent years. However, a precautionary approach to management will continue in 2019 to further promote rebuilding of these stocks and to address concerns for uncertain and changing environmental conditions. Consultation with First Nations and recreational advisors has been ongoing to determine the appropriate management actions. Management actions will be in accordance with the allocation policy.

13.1.3.4 INCIDENTAL HARVEST, BY-CATCH AND CONSTRAINTS TO SKEENA-NASS ISBM CHINOOK FISHERIES

- In-river recreational Chinook fisheries will be permitted in the Nass and Skeena Rivers with reduced retention limits. Limited spatial closures will be implemented for both river systems in 2019, including but not limited to:
 - Nass River mainstem at the confluence of the Meziadin River;
 - Skeena River mainstem at the mouth of the Kitsumkalum River, Kitwanga River and Kispiox River;
 - Some tributaries of the Skeena River including the Ecstall River.
- Marine recreational fisheries will be permitted;
- Opportunities for a Chinook-targeted gill net fishery in Area 4 will not be considered in 2019. When abundances permit, this Chinook fishery is managed to a maximum catch of 4,000 Chinook. Fishing opportunities will be dependent upon 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.
- Retention of Chinook in commercial net fisheries will not be permitted for the 2019 season.
- 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 Chinook and Chum are impacted to a lesser degree.

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

13.1.3.5 ALLOCATION AND FISHING PLANS

13.1.3.5.1 First Nations Fisheries

Food, Social and Ceremonial

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 north coast First Nations are typically multi-species, and are issued on an annual basis. Licences may also be amended for shorter durations.

Actual opportunities and catches will be dependent on, among other factors; in-season stock strength, management measures taken to ensure conservation of individual stocks, community needs of First Nations, and alternative sources of salmon if preferred species are not available locally due to low abundance.

The Department will be actively consulting and First Nations regarding appropriate strategies in 2019 and supporting collaborative process of engagement such as the Skeena First Nations Technical Committee.

Refer to Section 10.2 for Communal Licence Harvest Target Amount [Table 10.2-1](#) in Northern BC First Nations Fisheries.

Fishery Monitoring and Catch Reporting

The Strategic Framework for Fisheries Monitoring and Catch Reporting in the Pacific Fisheries (see Section [10.1](#)) is being applied in First Nations FSC fisheries across the region. Work towards this includes assessing current monitoring practices, programs and gaps. The First Nations Fishery Council (FNFC) and other area aggregate groups have assisted in engagement 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 Nations Band offices.

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 electronic 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 as a Microsoft Access program, the database 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. In 2010, work started on compiling all aspects of the approximate 34 current MS Access databases into one (1) VB style system that would be customizable for each Nations' needs. Work on the new system is ongoing.

For more information please contact Aleta Rushton at 250-230-1227.

Specific Conservation Measures for First Nations Fisheries

Protective measures may be considered in terminal areas to reduce harvest impacts. Potential measures will be the subject of discussion with First Nations communities prior to development of First Nations fishing plans.

Treaty Fisheries

Nisga'a Fisheries

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

Harvest Agreement of the Nisga'a Treaty. The Nisga'a Harvest Agreement includes Nisga'a fish allocations expressed as a percentage of the adjusted total allowable catch of Sockeye and Pink salmon. The NAFP is developed in accordance with Chapter 8 of the Nisga'a Final Agreement. Once approved by the Federal Minister of Fisheries, the Nisga'a 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 salmon allocations, as defined in the Nisga'a Treaty, are set out as a percentage of the Total Return to Canada (TRTC) up to maximum catch thresholds (63,000 Sockeye [10.5%], 6,300

Pink [0.6%], 12,600 Chinook [21%], 19,200 Coho [8%], and 12,000 Chum [8%]) in large return years. These Nisga'a salmon allocations have the same priority in fisheries management decisions as domestic [food, social and ceremonial (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 provided to other Nass watershed First Nations for their information and 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 2019 are:

Nass Chinook: Two methods (sibling and a 5 year average) are used to estimate the pre-season TRTC forecasts that are based on Total Run forecast estimates and a mean Alaska Harvest Rate (5.8%) from 2000 to 2017. The TRTC 50% probability point estimate for 2019 from the average of the two different pre-season forecast methods and a 5.8% Alaska Harvest rate (~1,000 Nass Chinook) is 23,000 with a range of point estimates from 17,000 (75% probability estimate) to 31,000 (25% probability estimate). The averaging forecast method's mean absolute accuracy for predicting TRTC returns was 71.1% (range: 10–99%) for 2000 to 2018 returns. Based on the pre-season TRTC forecasts and the minimum escapement goal (10,000) for Nass Chinook for 2019, the Nisga'a allocation ranges between 3,500 and 6,400. While returns of Chinook to the Nass are anticipated to be healthy in 2019, caution in future years may be required due to recent poor returns in 2017 and 2018.

| KWINAGEESE CHINOOK ESCAPEMENT | | | | | | | | | | | | | | |
|-------------------------------|------|------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | YEAR | ESCAPEMENT | RETURN YEAR | | | | | | | | | | | |
| | | | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
| BROOD YEAR | 2006 | 410 | Age 5 | | | | | | | | | | | |
| | 2007 | 70 | Age 4 | Age 5 | | | | | | | | | | |
| | 2008 | 16 | | Age 4 | Age 5 | | | | | | | | | |
| | 2009 | 895 | | | Age 4 | Age 5 | | | | | | | | |
| | 2010 | 131 | | | | Age 4 | Age 5 | | | | | | | |
| | 2011 | 740 | | | | | Age 4 | Age 5 | | | | | | |
| | 2012 | 715 | | | | | | Age 4 | Age 5 | | | | | |
| | 2013 | 813 | | | | | | | Age 4 | Age 5 | | | | |
| | 2014 | 560 | | | | | | | | Age 4 | Age 5 | | | |
| | 2015 | 1,093 | | | | | | | | | Age 4 | Age 5 | | |
| | 2016 | 853 | | | | | | | | | | Age 4 | Age 5 | |
| | 2017 | 241 | | | | | | | | | | | Age 4 | Age 5 |
| | 2018 | 456 | | | | | | | | | | | | Age 4 |

| UPPER NASS CHINOOK ESCAPEMENT | | | | | | | | | |
|--|--------|------------|-------------|-------|-------|-------|-------|-------|-------|
| | YEAR | ESCAPEMENT | RETURN YEAR | | | | | | |
| | | | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
| BROOD YEAR | 2011 | 9,600 | Age 5 | | | | | | |
| | 2012 | 8,688 | Age 4 | Age 5 | | | | | |
| | 2013 | 8,011 | | Age 4 | Age 5 | | | | |
| | 2014 | 11,509 | | | Age 4 | Age 5 | | | |
| | 2015 | 18,262 | | | | Age 4 | Age 5 | | |
| | 2016 | 9,037 | | | | | Age 4 | Age 5 | |
| | 2017 | 4,419 | | | | | | Age 4 | Age 5 |
| | 2018* | 7,235 | | | | | | | Age 4 |
| * Preliminary enroute mortality estimated at 50%. | | | | | | | | | |
| HABITAT GOAL FOR UPPER NASS = 14,000 (80% of 17,800) | | | | | | | | | |
| | Esc | Poor | Fair | Good | | | | | |
| | 14,240 | 7000 | 14000 | 14001 | | | | | |

13.1.3.5.2 Recreational Fisheries

Recreational fisheries in Canada receive priority access to Chinook over commercial fisheries. Two of the largest recreational fisheries in Northern BC (NBC) occur in Haida Gwaii and in Chatham Sound. NBC recreational fisheries experienced significant growth until 2005 when they reached a maximum catch of approximately 82,000 Chinook.

The recreational fisheries in Haida Gwaii and Chatham Sound are mixed stock fisheries and migrating stocks of Chinook salmon originating from Alaska to California are encountered.

Recreational salmon fishing occurs in the tidal waters adjacent to the Nass and Skeena Rivers with the peak of the season being from June to the end of July. The minimum size limit for Chinook salmon is 45 cm, with daily, total possession and annual possession limits in effect. The open time is April 1st to March 31st. Barbless hooks are mandatory.

The possession limit for salmon is twice the daily limit.

The Skeena River and tributaries are also in Region 6 freshwater fishing area, and there have traditionally been openings for Chinook salmon throughout the watershed at different time periods. On the lower Skeena River mainstem the fishery was open April 1st. On the upper Skeena River mainstem, some sections of the river was open in April and some in June. Many of the Skeena river tributaries are closed year-round for Chinook salmon. There are also monthly and annual quotas for Chinook that apply to non-tidal waters.

In-season updates and fishery regulation changes can be found on the recreational fisheries website: <http://www.bcsportfishing.ca>.

For direct notification of regulatory changes, individuals may sign up to have recreational fishery notices sent directly to their email at the website above. Refer to the link to subscribe to fishery notices on the right hand side of the page.

Fishery Monitoring and Catch Reporting

The Area 3 and 4 creel program operated from June 1 to August 31, 2018 with 10,734 boat trips and a retained catch of 5,822 Chinook.

A creel survey of freshwater recreational fisheries on the Skeena River watershed was not conducted in 2018.

A creel survey of the freshwater recreational fisheries in four river systems of the Nass watershed was not conducted in 2018.

13.1.3.5.3 Commercial Fisheries

Allocation

Table 13.1-3: Commercial Allocation Implementation Plan for the 2015–2019 period

| Description | Areas | Seine A | Gill Net C | Troll F |
|---------------------|--------------|----------------|---------------------|----------------|
| North-Inside | 3 to 5 | * | 100.0% ^d | * |

Notes on Chinook allocations (north):

* by-catch provisions

^d by-catch provision and near-terminal directed fisheries (e.g. Skeena)

Skeena ISBM Chinook Fishing Plan

Area C Gill Net Fisheries

For 2019, directed gill net opportunities for Chinook salmon in Area 4 will not be considered.

When abundances permit, this Chinook fishery is managed to a maximum catch of 4,000 Chinook. In most years, the fishery begins with an initial opening of 18 hours. Subsequent fishing opportunities are dependent upon 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 First Nations and 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.

Fishery Monitoring and Catch Reporting

Fishery Monitoring and Catch Reporting includes the following:

- Mandatory requirement to file fishing reports in all commercial fisheries, including “Start/Pause/Cancel/End” Fishing reports.
- Mandatory catch reporting by phone-in with a paper harvest log and electronic transmission with an electronic harvest log (E-log) in all commercial fisheries. (*Catch reporting requirements are specific to each licence group and are detailed in the conditions of licence for each gear type*).

13.1.3.5.4 ESSR Fisheries

There are no ESSR fisheries for Chinook on the North Coast

13.1.4 CENTRAL COAST ISBM CHINOOK

13.1.4.1 SNAPSHOT OVERVIEW AND MAP OF MANAGEMENT UNIT

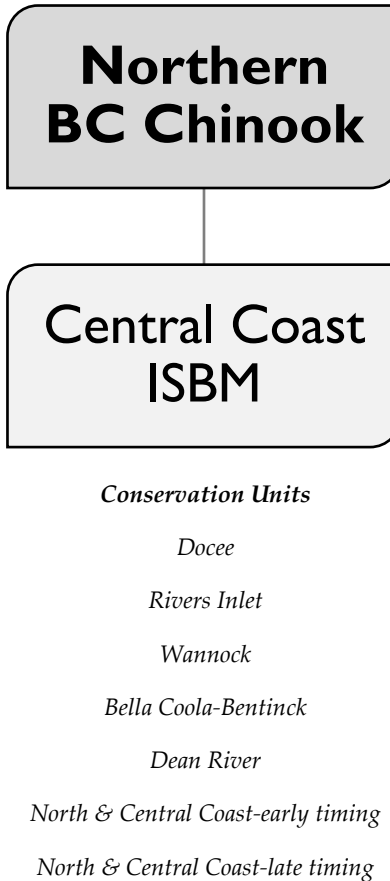


Figure 13.1-4: Overview of Central Coast ISBM Chinook

ISBM management regimes apply to all Chinook salmon fisheries subject to the PST that are not AABM fisheries and include marine and freshwater salmon fisheries from northern British Columbia to northern Oregon coast. ISBM fisheries in Northern BC include First Nations, recreational, and Central Coast gill net.

Atnarko Chinook

The Atnarko Chinook stock in Area 8 is an enhanced Chinook population that supports First Nations FSC and recreational fisheries, as well as, a terminal commercial Chinook gill net fishery.

13.1.4.2 STOCK ASSESSMENT INFORMATION

13.1.4.2.1 Pre-season

There is no formal pre-season forecast for Central Coast ISBM Chinook.

Area 6 Chinook populations are generally small and with very little stock assessment information. The Outlook for Area 6 Chinook is “average”

There are no known Chinook populations within Area 7. The Outlook for Area 8 for 2019 is “average to above average.” Returns for the Bella Coola/Atnarko system have been good over the last several years with escapement greater than management targets. Should the stocks remain productive the 2019 returns to the Bella Coola/Atnarko River should be above average. The Outlook for Areas 9 and 10 is “average” for the Wannock River and “below average” for Owikeno tributary stocks and the Chuckwalla/Kilbella systems based on recent trends.

There are few in-season estimates of abundance for Central Coast ISBM Chinook.

For Atnarko Chinook, commercial catch per unit effort and the Nuxalk First Nation’s FSC fishery provide the best indication of run strength.

13.1.4.3 DECISION GUIDELINES AND MANAGEMENT ACTIONS

Atnarko Chinook

DFO is working with local advisors and the First Nations Central Coast Salmon Coordinating Committee for advice on fisheries in these areas.

There are currently no biologically based escapement goals for Atnarko Chinook but there are estimates of the escapement required to produce maximum sustained yield (S_{MSY}) and the spawning escapement at replacement (S_{REP}). S_{MSY} was estimated to be 5,009 and the spawning escapement at replacement S_{REP} was estimated to be 14,595 (Vélez-Espino et. al. 2014).

Opportunities for a one day gill net fishery on the last week in May or the first week in June are 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, these opportunities are evaluated based mainly on First Nations FSC fishery catches with consideration of commercial and recreational catches as well. Atnarko Chinook have shown a trend of increased escapements since 2013 with a record return of 44,329 in 2015. The 2018 return was slightly below recent years’ average at 15,000.

Incidental Harvest, By-catch and Constraints to Inside Chinook ISBM Fisheries

Atnarko Sockeye continue to be a stock of concern and any fisheries will be managed to avoid or minimize impacts on these stocks.

13.1.4.4 ALLOCATION AND FISHING PLANS

13.1.4.4.1 First Nations Fisheries

First Nations Food Social and Ceremonial

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 north coast First Nations are typically multi-species, and are issued on an annual basis. Licences may also be amended for shorter durations.

Actual opportunities and catches will be dependent on, among other factors; in-season stock strength, management measures taken to ensure conservation of individual stocks, community needs of First Nations, and alternative sources of salmon if preferred species are not available locally due to low abundance.

Refer to Section 10.2 for Communal Licence Harvest Target Amount [Table 10.2-1](#) in Northern BC First Nations Fisheries.

Fishery Monitoring and Catch Reporting

The Strategic Framework for Fisheries Monitoring and Catch Reporting in the Pacific Fisheries (see Section [1.6.4](#)) is being applied in First Nations FSC fisheries across the region. Work towards this includes assessing current monitoring practices, programs and gaps. The First Nations Fishery Council (FNFC) and other area aggregate groups have assisted in engagement 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 Nations Band offices.

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 electronic 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 as a Microsoft Access program, the database 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. In 2010, work started on compiling all aspects of the approximate 34 current MS Access databases into one (1) VB style system that would be customizable for each Nations' needs. Work on the new system is ongoing.

For more information please contact Aleta Rushton at 250-230-1227.

Specific Conservation Measures for First Nations Fisheries

Protective measures may be considered in terminal areas to reduce harvest impacts. Potential measures will be the subject of discussion with First Nations communities prior to development of fishing plans.

Treaty Fisheries

There are no treaty fisheries for Central Coast ISBM Chinook stocks.

13.1.4.4.2 Recreational Fisheries

Recreational salmon fishing occurs in the tidal waters of the Central Coast (Areas 6 to 10), with interception fisheries beginning in late April and the peak of the season being from June to August. The minimum size limit for Chinook salmon is 45 cm, with daily, total possession and annual limits in effect. The open time is April 1st to March 31st. The possession limit for salmon is twice the daily limit.

In Area 6, the initial effort is mostly by local independent anglers out of Kitimat, however the most significant portion of the recreational fishing season develops late May and continues to mid-September with the addition of a number of charter operators to the recreational fleet. One recreational fishing lodge operates in Area 6.

In Area 7, the main recreational fishing activity takes place in Milbanke Sound off of St. Johns Harbour and in Seaforth Channel between St. Johns and Idol Point; fishing effort is primarily from several recreational lodges and charter operators.

In Area 8, the main recreational fishing effort in tidal water is concentrated in the Hakai Pass area by guests of the recreational lodges in the area. There were four lodges operating in 2018.

In Area 9, a total of six lodges operated in Rivers Inlet during the 2018 season.

A condition of licence in the recreational Tidal Waters Sport Fishing Licence, applies to all angling in the Rivers Inlet Special Management Zone (SMZ). Any anglers fishing in this area should consult the Tidal Waters Sport Fishing Regulations before commencing fishing.

Recreational harvesting occurs in Area 10 with participation by independent anglers and charter operators.

The Central Coast non-tidal waters are in Regions 5B and 6 freshwater fishing areas, and there are openings for Chinook salmon in the different watersheds at different time periods. The minimum size limit is 30 cm, with daily and total possession limits in effect. There are also monthly and annual quotas for Chinook that apply to non-tidal waters.

In-season updates and fishery regulation changes can be found on the recreational fisheries website:

<http://www.bcsportfishing.ca>.

For direct notification of regulatory changes, individuals may sign up to have recreational fishery notices sent directly to their email at the website above. Refer to the link to subscribe to fishery notices on the right hand side of the page.

Fishery Monitoring and Catch Reporting

In Areas 6 to 9, DFO has been collecting recreational catch data through the Lodge Log Book Program. In Area 10, Logbook information is used to provide catch and release numbers from anglers fishing there.

Area 7

A total of 3,484 Chinook were caught during the 2018 season. The 2018 Chinook CPUE of 0.55 is above the 10 year average of 0.42.

Area 8 - Tidal

Chinook catch in the Hakai Pass area during the 2018 season was 1,553 with a CPUE of 0.21. The 2018 CPUE is above the 10 year average of 0.16.

Area 8 – Non-Tidal

Salmon sport fishing on the Bella Coola and Atnarko Rivers was below average for Chinook in 2018.

Area 9

In Area 9 a total of 2,438 Chinook were caught during the 2018 season. The 2018 Chinook CPUE of 0.26 is greater than the 10 year average of 0.16.

Area 10

A total of 218 Chinook were reported caught during the 2018 season. The 2018 Chinook CPUE of 0.80 is above the 5 year average of 0.39.

13.1.4.4.3 Commercial Fisheries

Allocation and Fishing Plans

Table 13.1-4: Commercial Allocation Implementation Plan for the 2015–2019 period

| Description | Areas | Seine A | Gill Net C | Troll F |
|-------------|---------|---------|---------------------|----------------|
| Central | 6 to 10 | * | 100.0% ^b | * ^c |

Notes on chinook allocations (north):

* by-catch provisions

^b near-terminal fisheries (primarily hatchery origin)

^c review potential re-entry of troll into Production Areas 6 + 7. By-catch provisions

Central Coast Chinook ISBM Fishing Plan

Area C

Area 8: **June 03** – First anticipated gill net opening in the Bella Coola gillnet area. This will be a directed Chinook fishery. Minimum mesh size 203 mm (7.99 inches).

Atnarko Chinook are harvested by the commercial gillnet 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.

Gill nets have a 203 mm mesh restriction. This restriction is in place so that chinook are selectively targeted and other non-target species, such as sockeye, are impacted minimally.

Fishery Monitoring and Catch Reporting

Fishery Monitoring and Catch Reporting includes the following:

- Mandatory requirement to file fishing reports in all commercial fisheries, including “Start/Pause/Cancel/End” Fishing reports.
- Mandatory catch reporting by phone-in with a paper harvest log and electronic transmission with an electronic harvest log (E-log) in all commercial fisheries. (*Catch reporting requirements are specific to each licence group and are detailed in the conditions of licence for each gear type*).

13.1.4.4.4 ESSR Fisheries

There are currently no ESSR fisheries for Central Coast Chinook.

13.2 NORTHERN CHUM SALMON FISHING PLAN

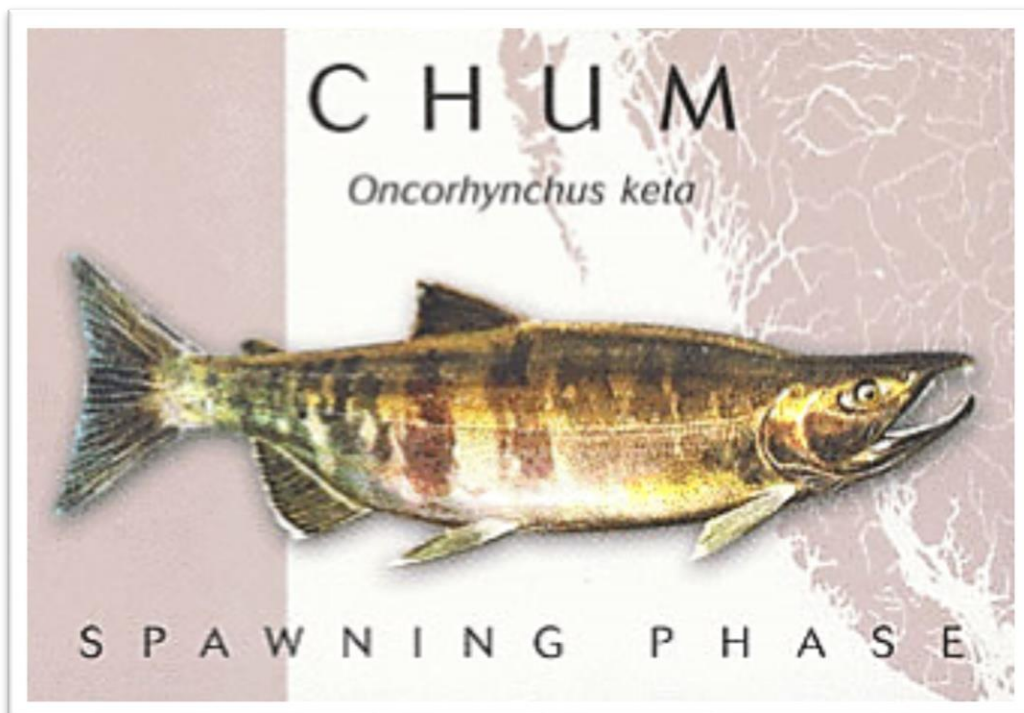
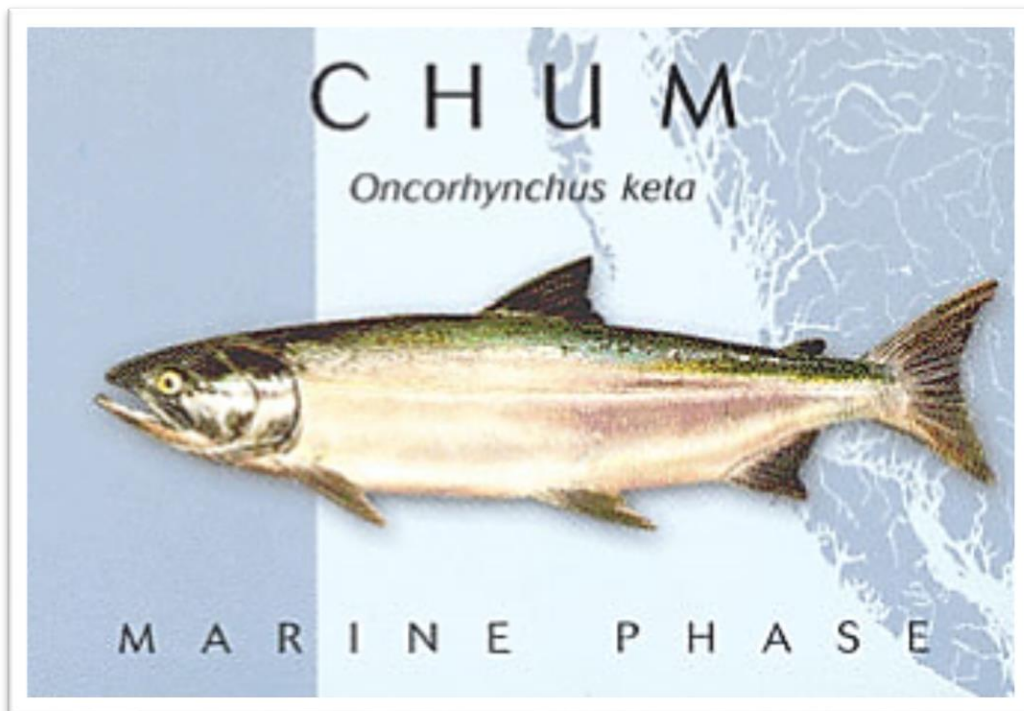


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13.2.1 NORTHERN CHUM OVERVIEW

Chum salmon have the most extensive geographic distribution of all the salmon species and can be found from northern California to Alaska, including the Aleutian Islands, as well as the Yukon and Mackenzie rivers in the Arctic.

Returns are predominately age 3 to 5 fish and in some systems are the latest of the five salmon species to enter their natal rivers and stream to spawn. Chum salmon have pale flesh and a low fat content, and are usually marketed as a fresh, frozen or smoked product.

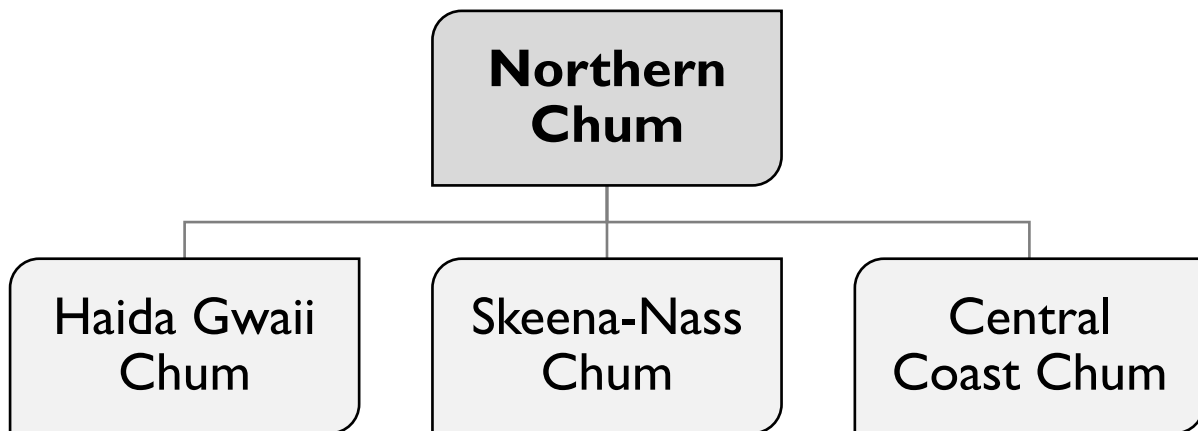


Figure 13.2-1: Overview of Northern Chum

13.2.1.1 NORTHERN CHUM ENHANCEMENT INFORMATION:

The major BC North Coast DFO operation enhancement facilities that produce chum are:

- Kitimat River hatchery
- Snootli Creek hatchery

The information available at the link below addresses production from major DFO Operations (OPS) facilities, contracted Community Economic Development Program hatcheries (CEDP), larger or more complex Public Involvement Projects (Designated Public Involvement or DPI) operated by volunteers, and Aboriginal Fisheries Strategy (AFS). 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.

There are two datasets available: **Post-Season Production** from the 2017 brood year (i.e. 2018 releases, and numbers on hand for 2019 release), and the **Production Plan**, which includes

proposed targets for the upcoming 2019 brood year. These are available at the following website:

<http://www.pac.dfo-mpo.gc.ca/sep-pmvs/projects-projets/ifmp-pgip-eng.html>

13.2.2 HAIDA GWAII CHUM – OVERVIEW

13.2.2.1 SNAPSHOT OVERVIEW AND MAP OF MANAGEMENT UNIT

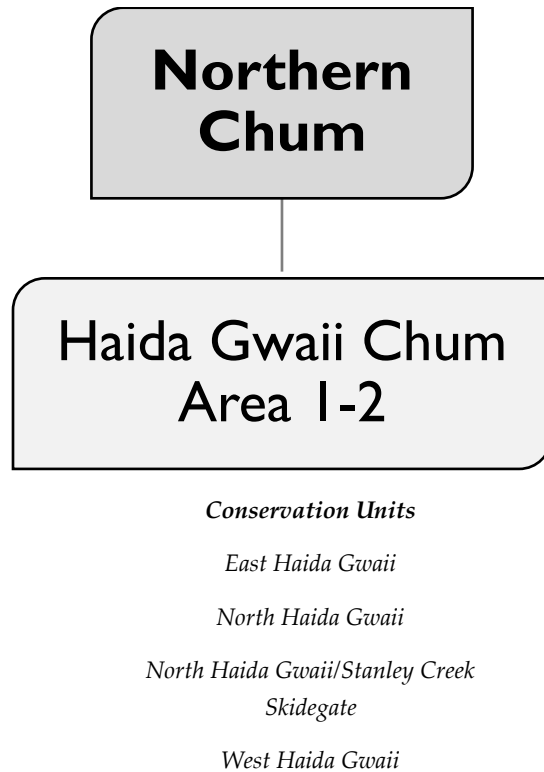


Figure 13.2-2: Overview of Haida Gwaii Chum

Historically, terminal Chum salmon harvesting opportunities have occurred in a variety of wild stock locations in Haida Gwaii. In general, returns to Haida Gwaii have been below management targets with the exception of west Haida Gwaii where returns have been consistently at or slightly above management targets. Chum returns have declined to levels where fishing opportunities for commercial net fisheries are infrequent. 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. Chum net fisheries will be managed in-season on a local basis.

13.2.2.2 STOCK ASSESSMENT INFORMATION

13.2.2.2.1 Pre-season

Formal quantitative forecasts are not prepared for Haida Gwaii Chum, but the qualitative Salmon Outlook for 2018 is “poor” for Area 2E and “moderate” for Area 2W. Chum salmon harvesting opportunities are expected to be limited in 2019.

13.2.2.2.2 In-Season

Monitoring to determine incoming runs throughout the season will be concentrated on the east coast of Haida Gwaii between Skidegate Inlet and Darwin Sound, and on the west coast between Dawson Inlet and Tasu Sound.

13.2.2.3 DECISION GUIDELINES AND MANAGEMENT ACTIONS

Terminal net fishery openings are based on fish observed to be schooling in front of the various systems. Fisheries will only be considered if the estimated return of salmon is sufficient to meet escapement goals. The size of the return will be estimated by charter patrolmen using visual assessments.

For Area F troll, there will be non-retention of Chum in effect in Dixon Entrance and Hecate Strait to protect northern and eastern Haida Gwaii Chum stocks as well as northern mainland BC Chum stocks. Retention of Chum may be allowed along the west coast of Haida Gwaii during August and September as west Haida Gwaii stocks are considered healthy.

13.2.2.4 INCIDENTAL HARVEST, BY-CATCH AND CONSTRAINTS TO FISHERIES

- Assessment of escapements to streams in and near any identified surpluses to be harvested will need to be conducted. 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 foregoing 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 may be required.
- To minimize the amount of by-catch, all fisheries will be held during daylight hours, generally 11 or 12 hour days during September reducing to 10 or 11 hour days in October.

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

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

13.2.2.5 ALLOCATION AND FISHING PLANS

13.2.2.5.1 First Nations Fisheries

Food Social and Ceremonial

First Nations opportunities to harvest salmon for FSC 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 north coast First Nations are typically multi-species, and are issued on an annual basis. Licences may also be amended for shorter durations.

Actual opportunities and catches will be dependent on, among other factors; in-season stock strength, management measures taken to ensure conservation of individual stocks, community needs of First Nations, and alternative sources of salmon if preferred species are not available locally due to low abundance.

Refer to Section 10.2 for Communal Licence Harvest Target Amount [Table 10.2-1](#) in the Northern BC / First Nations Fisheries.

Fishery Monitoring and Catch Reporting

Fishery monitoring will be conducted by DFO and the First Nations under Fisheries Agreements if applicable. First Nations keep records of harvest and provide catch information to DFO in a variety of formats. If a commercial vessel is used for fishing under this licence, First Nations are asked to provide information respecting the species and quantity of fish harvested by the vessel to the DFO Catch Reporting Officer within 24 hours of the landing of fish harvested from that vessel. With respect to timing of catch reports, First Nations are requested to report as follows: by the end of each month between April 1 and May 14; weekly (Wednesdays) between May 15 and October 31 inclusive; and at the end of each month between November 1 and March 31.

Treaty Fisheries

There are no Treaty fisheries for Haida Gwaii Chum.

13.2.2.5.2 Recreational Fisheries

Recreational salmon fishing occurs primarily in the tidal waters surrounding Haida Gwaii, with the majority of effort focused along the shoreline from Masset to Langara Island in Area 1 and between Englefield Bay and Port Louis in Area 2W. Recreational fishing occurs primarily between May and September with peak effort and catch occurring in July and August. Chum salmon are incidentally retained in the recreational fishery which primarily targets Chinook and Coho salmon. The daily aggregate limit of salmon is four (4) per day and a maximum 2 of which may be Chinook.

In-season updates and fishery regulation changes can be found on the recreational fisheries website:

<http://www.bcsportfishing.ca>.

For direct notification of regulatory changes, individuals may sign up to have recreational fishery notices sent directly to their email at the website above. Refer to the link to subscribe to fishery notices on the right hand side of the page.

Fishery Monitoring and Catch Reporting

DFO has been collecting recreational catch data through the Lodge Log Book Program and the Haida Creel Program since 1995. Participation in monitoring and reporting of recreational catch in Areas 1 and 2 has been excellent over the past 25 years. Monitoring is continuing to improve with region wide initiatives.

13.2.2.5.3 Commercial Fisheries

Allocation

Table 13.2-1: Commercial Allocation Implementation Plan for the 2015–2019 period

| Description | Areas | Seine A | Gill Net C | Troll F |
|-------------|---------------------------------|---------|------------|---------|
| North | 1, 2E, 2W, 101 to 111, 130, 142 | 54.0% | 43.0% | 3.0% |

Haida Gwaii Chum Fisheries

Area A and Area C

Mid-September to October: Possible terminal fisheries directed on identified surpluses of local Chum stocks in Areas 1, 2E and 2W.

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

Area F Troll

Chum retention will not be permitted in Dixon Entrance and Hecate Strait. Retention of Chum may be allowed along the west coast of Haida Gwaii during August and September depending on in-season indications of Chum stock strength.

Fishery Monitoring and Catch Reporting

Fishery Monitoring and Catch Reporting includes the following:

- Mandatory requirement to file fishing reports in all commercial fisheries, including “Start/Pause/Cancel/End” Fishing reports.
- Mandatory catch reporting by phone-in with a paper harvest log and electronic transmission with an electronic harvest log (E-log) in all commercial fisheries. (*Catch reporting requirements are specific to each licence group and are detailed in the conditions of licence for each gear type*).

13.2.2.5.4 ESSR Fisheries

There are no ESSR fisheries anticipated for Haida Gwaii Chum.

13.2.3 SKEENA-NASS CHUM

13.2.3.1 SNAPSHOT OVERVIEW AND MAP OF MANAGEMENT UNIT

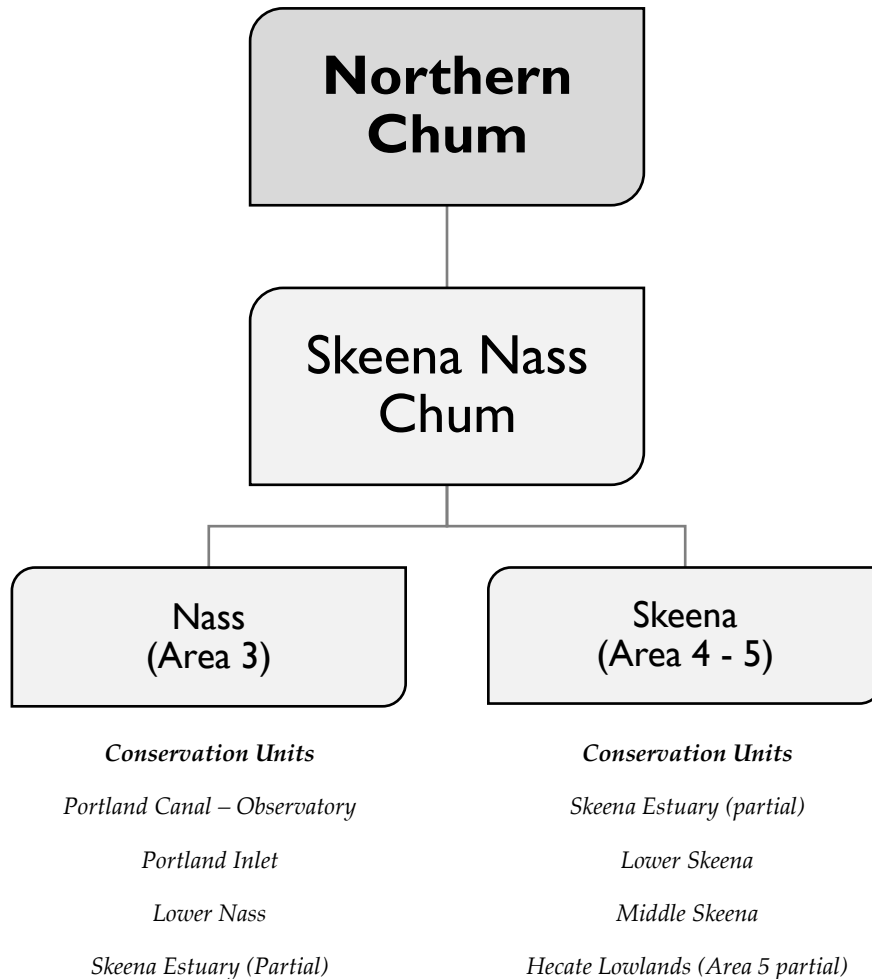


Figure 13.2-3: Overview of Skeena-Nass Chum

Chum salmon are the least abundant salmon species in Areas 3 to 5 and return to the fewest number of streams.

Even so, Nass and Skeena River-destined Chum are considered depressed and thus directed-effort by commercial fisheries on wild stocks is restricted ; except for some limited opportunities as by-catch in pink and sockeye-directed fisheries in Area 3 when enhanced Chum are present. Rebuilding plans for both stocks can be found in [Appendix 7](#) and [Appendix 8](#).

13.2.3.2 STOCK ASSESSMENT INFORMATION

13.2.3.2.1 Pre-season

Formal quantitative forecasts are not prepared for Nass or Skeena (Area 3 to 4) Chum, but the qualitative Salmon Outlook for both stocks for 2019 is “poor” based on poor brood year escapements. The qualitative outlook for Area 5 to 6 Chum is also “poor” and are dependent on ocean survival. Chum salmon surpluses are not expected in 2019.

Table 13.2-3: Management Escapement Goals (MEGs) and escapements for major Chum systems in Areas 3-5. Note: MEGs were developed in the 1980s and require review.

| Area | System | MEG | 2017 | 2016 | 2015 | 2014 | 2013 |
|------|--------------------|--------|------|------|-------|------|------|
| 3 | Khutzymateen River | 20,000 | N/I | N/I | 31000 | 5100 | 4800 |
| 3 | Kshwan River | 15,000 | 6640 | 270 | 17400 | N/I | 1100 |
| 3 | Stagoo Creek | 15,000 | 6730 | 6228 | 6758 | 8200 | 7100 |
| 3 | Toon River | 7,000 | N/I | N/I | N/I | N/I | 1080 |
| 4 | Ecstall River | 20,000 | A/P | N/I | A/P | A/P | A/P |
| 5 | No major producers | | | | | | |

N/I defines Not Inspected, and A/P defines that Adults were present but that an estimate was not developed due to a lack of sufficient inspection information.

13.2.3.2.2 In-season

Returns of Chum salmon to the Nass River are monitored through the fish wheel program operated by Nisga’a Fisheries and by escapement surveys to indicator systems. Chum stocks are managed to stream-specific escapement goals in Area 3.

The Tyee test fishery on the Skeena River is the main indicator for relative abundance of Chum salmon in Areas 4 and 5 through the use of a multi-panel gill net with varying mesh sizes. Returns are variable and estimates are subject to error as annual run timing and catchability of salmon by the Tyee test fishery net varies.

13.2.3.3 DECISION GUIDELINES AND MANAGEMENT ACTIONS

Commercial fisheries in Areas 3 to 5 will be managed to avoid wild Chum stocks. There will be no opportunities for directed harvest on wild Nass or Skeena Chum.

Retention of Chum in Area 3 will be permitted as by-catch 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 in Area 3 to determine the presence of US hatchery Chum in both retention and non-retention area.

13.2.3.4 INCIDENTAL HARVEST, BY-CATCH AND CONSTRAINTS TO SKEENA AND NASS CHUM FISHERIES

Area 3:

- Area 3 Chum are a stock of concern and will require focused management planning. A rebuilding plan can be found in [Appendix 7](#). Fisheries will continue to be managed to reduce impacts to Canadian Chum. Part of the rebuilding plan for the immediate future is to keep the Canadian average exploitation rate (ER) below 10%.
- Commercial fisheries are limited to daylight hours.
- Non-retention of Steelhead is mandatory in all fisheries.
- Gill nets have a 137 mm (5.39 inch) 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.
- Pink fishing opportunities will be managed to conserve weak stocks of Area 3 Chum.

Area 4:

- 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. Directed Chinook fisheries are not anticipated for 2018.
- Retention of Chum and Steelhead is prohibited in all fisheries.
- Gill nets have a 137 mm (5.39 inch) 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.
- 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 that these management measures will be in place for an extended period. A rebuilding plan for Skeena Chum can be found in [Appendix 8](#).

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

13.2.3.5 ALLOCATION AND FISHING PLANS

13.2.3.5.1 First Nations Fisheries

First Nations opportunities to harvest salmon for FSC 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 north coast First Nations are typically multi-species, and are issued on an annual basis.

Licences may also be amended for shorter durations.

Actual opportunities and catches will be dependent on, among other factors; in-season stock strength, management measures taken to ensure conservation of individual stocks, community needs of First Nations, and alternative sources of salmon if preferred species are not available locally due to low abundance.

Refer to Section 10.2 for Communal Licence Harvest Target Amount [Table 10.2-1](#) in the Northern BC First Nations Fisheries.

Fishery Monitoring and Catch Reporting

The Strategic Framework for Fisheries Monitoring and Catch Reporting in the Pacific Fisheries is being applied in First Nations FSC fisheries across the region. Work towards this includes assessing current monitoring practices, programs and gaps. The First Nations Fishery Council

(FNFC) and other area aggregate groups have assisted in engagement 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 Nations Band offices.

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 electronic 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 as a Microsoft Access program, the database 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. In 2010, work started on compiling all aspects of the approximate 34 current MS Access databases into one (1) VB style system that would be customizable for each Nations' needs. Work on the new system is ongoing.

For more information please contact Aleta Rushton at 250-230-1227.

Treaty Fisheries

Nisga'a Fisheries

The Nisga'a Annual Fishing Plan (NAFP) is developed by the Nisga'a-Canada-BC Joint Fisheries Management Committee (JFMC) and governed by the terms of the Nisga'a Final Agreement and the Nisga'a Harvest Agreement of the Nisga'a Treaty. The Nisga'a Harvest Agreement includes Nisga'a fish allocations expressed as a percentage of the adjusted total allowable catch of Sockeye and Pink salmon. The NAFP is developed in accordance with Chapter 8 of the Nisga'a Final Agreement. Once approved by the Federal Minister of Fisheries, 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 salmon allocations, as defined in the Nisga'a Treaty, are set out as a percentage of the Total Return to Canada (TRTC) up to maximum catch thresholds (63,000 Sockeye [10.5%], 6,300 Pink [0.6%], 12,600 Chinook [21%], 19,200 Coho [8%], and 12,000 Chum [8%]) in large return

years. These other Nisga'a salmon allocations have the same priority in fisheries management decisions as domestic [food, social and ceremonial (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 2019 are:

Nass Chum: The Total Run size probability point estimate for 2019 from a pre-season model based on a 4-year average brood return is 38,000 (50%) with a range in point estimates between 29,000 (75%) and 49,000 (25%). Assuming a 16% Alaskan exploitation rate (based on the average of odd-year harvests from 2009 to 2017, approximately 6,000 Nass Chum), the 50% probability point estimate for the Total Return to Canada (TRTC) of Nass Chum is 32,000 with a range of point estimates from 24,000 (75% probability) to 42,000 (25% probability). The forecast method's mean absolute accuracy for predicting TRTC returns was 66.3% (range: 16–96%) for 2013 to 2017 returns. Based on the pre-season TRTC forecasts and the minimum escapement goal (30,000) for Nass Chum for 2019, the Nisga'a allocation ranges between <500 (incidental by-catch only) and 3,400. The mean TRTC estimate (32,000) will be used for calculating the initial target for the in-season Nisga'a allocation (2,600) for 2019.

13.2.3.5.2 Recreational Fisheries

Recreational salmon fishing occurs in the tidal waters adjacent to the Nass and Skeena Rivers, Areas 3 and 4. The fishery is open April 1st to March 31st, with the peak of the season from June to August. Due to the fact that both Nass and Skeena Chum are subject to rebuilding plans, the daily limit for Chum salmon is zero.

The Skeena and Nass Rivers are in Region 6 freshwater fishing area, and are closed to fishing for Chum salmon.

In-season updates and fishery regulation changes can be found on the recreational fisheries website:

<http://www.bcsportfishing.ca>.

For direct notification of regulatory changes, individuals may sign up to have recreational fishery notices sent directly to their email at the website above. Refer to the link to subscribe to fishery notices on the right hand side of the page.

Fishery Monitoring and Catch Reporting

The Area 3 and 4 Creel Program operated by the North Coast Skeena First Nations Stewardship Society ran from June 1st to August 31st, 2018, with a recorded total of 10,734 boat trips and a retained catch of 176 Chum salmon.

13.2.3.5.3 Commercial Fisheries

Table 13.2-2: Commercial Allocation Implementation Plan for the 2015–2019 period

| Description | Areas | Seine A | Gill Net C | Troll F |
|-------------|--------|--------------------|--------------------|---------|
| North | 3 to 5 | 55.0% ^b | 45.0% ^b | * |

Notes on Chum allocations (north):

^b recent Chum non-retention; fishery allows by-catch of Chum

* by-catch provision

Area A (Seine) and Area C (Gillnet)

- There will be no directed commercial opportunities for wild Nass or Skeena Chum.
- Retention of Chum as by-catch 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 in Area 3 to determine the presence of US hatchery Chum in both retention and non-retention area. All fisheries will be announced via fishery notice.

Area F (Troll)

- There will be non-retention of Chum in effect all year in Dixon Entrance and Hecate Strait to protect wild Skeena and Nass Chum.

Fishery Monitoring and Catch Reporting

- Mandatory requirement to file fishing reports in all commercial fisheries, including “Start/Pause/Cancel/End” Fishing reports.

- Mandatory catch reporting by phone-in with a paper harvest log and electronic transmission with an electronic harvest log (E-log) in all commercial fisheries. (Catch reporting requirements are specific to each licence group and are detailed in the conditions of licence for each gear type).

13.2.3.5.4 ESSR Fisheries.

There are no ESSR fisheries for Skeena or Nass Chum.

13.2.4 CENTRAL COAST CHUM

13.2.4.1 SNAPSHOT OVERVIEW AND MAP OF MANAGEMENT UNIT

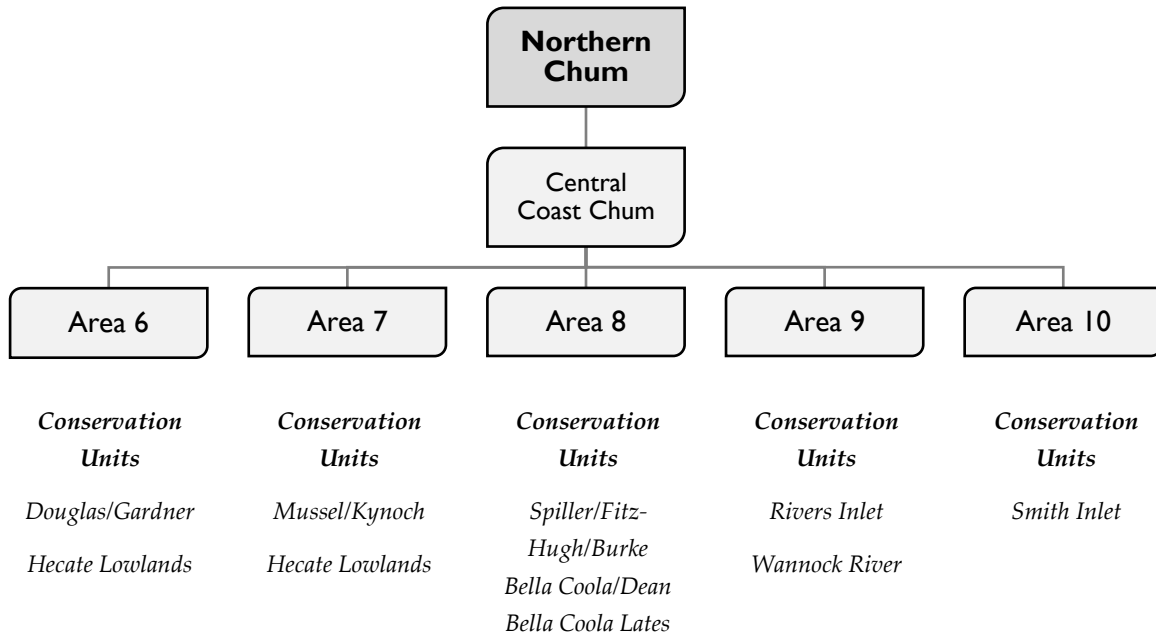


Figure 13.2-4: Overview of Central Coast Chum

Wild Chum stocks in Area 6 to 10 have been below target but stable in recent years.

Commercial fisheries target hatchery enhanced Chum stocks in Area 6 (Kitimat Hatchery), Area 7 (Kitasoo and McLoughlin Bay Hatcheries), and Area 8 (Snootli Hatchery). The fisheries occur in approach areas where timings of the returns are known.

Commercial fisheries also target stronger wild stocks. For instance, in Area 7, fisheries for Mussel and Kainet Chum generally occur in late July and August, while fisheries for the other stocks occur in the later part of August and September. Chum fisheries in Area 8 occur on returns to Kimsquit and Lower Dean streams (Elcho, Cascade and Jenny). There are no anticipated fisheries in Areas 9 and 10 in 2019.

Stock Assessment Information

13.2.4.1.1 Pre-season

Formal quantitative forecasts are not prepared for Central Coast Chum (Area 6 to 10). The qualitative Salmon Outlook for Area 6 wild Chum for 2019 is for poor expectations due to poor brood year escapement. The qualitative Salmon Outlook for Chum stocks in Areas 7 is “poor” based on a pattern of poor returns regardless of brood year, and for Area 8 the Outlook is “good” based on generally good brood year escapements. Returns of enhanced stocks to Area 6 to 10 are dependent upon ocean survival which has been highly variable in recent years.

13.2.4.1.2 In-season

There are no in-season assessment tools for Chum stocks in Areas 6 to 10. Opportunities for harvest will be considered based on in-stream escapement assessments in Area 6 and reports from the hatchery on run strength of the enhanced stock.

In Areas 7 and 8, harvest opportunities will be based on brood year escapements, in-stream escapement assessments and the success of assessment fisheries that will be run to gauge run strength.

13.2.4.2 DECISION GUIDELINES AND MANAGEMENT ACTIONS

Area 6:

Opportunities for a directed terminal gill net fishery in Kitimat Arm are based on Kitimat Hatchery Chum production, assessment fisheries and in-season escapement estimates. The Department’s plans to pilot an otolith study in 2018 to determine the enhanced contribution to the fishery did not take place due to poor returns. It is hoped that the study will go forward in 2019.

Area 7:

For Areas 7 to 10, decisions are made in consultation with local First Nations, the Central Coast First Nations Salmon Coordinating Committee, and Central Coast advisors, for the management of fisheries in these areas.

Opportunities for one-day gillnet and seine assessment fisheries in the last week of July or first week of August are determined pre-season based on recent trends in brood year escapement and in-season information. If recent escapements indicate an increasing or stable run, the assessment fisheries will very likely proceed. Given the recent trend of poor returns, one-day assessment fisheries for lower Finlayson, lower Mathieson, Sheep Pass and the eastern portion of Seaforth Channel may be curtailed unless in-river assessment suggest improved returns.

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 the local advisory group. 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 at 1600 hours or Friday of the week preceding the proposed fishery.

Subject to in-season assessment, 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. Seines and gill nets will alternate fishing opportunities each week with the gill net fleet going first in 2018.

Subject to in-season assessment, 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 follow the pattern of gill nets fishing first day and seines the second day.

Subject to in-season assessment, portions of Spiller Channel may be opened to seines and gill nets in late August. Openings in that area will depend on Chum returns to Neekas Creek.

Subject to in-season assessment, 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 returns to the Roscoe, Quartcha, and Clatse systems.

Area 8:

In November/December during the pre-season planning process, opportunities for 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 to better manage the fishery later in the season.

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. This is not anticipated for the 2018 season.

- 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.

Area 9:

Escapement levels for Area 9 Chum have been below target for several years. No fishery is anticipated.

Area 10:

In-season escapement information will be used to evaluate fishing opportunities for Nekite Chum. No fishery is anticipated. Should commercial Sockeye opportunities occur during the 2019 season, Chum retention is unlikely to be permitted.

13.2.4.3 INCIDENTAL HARVEST, BY-CATCH AND CONSTRAINTS TO CENTRAL COAST CHUM FISHERIES**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

Area 6:

- Commercial net fishing is limited to daylight hours.

- 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.

Area 7:

- Gill nets with 149mm minimum mesh restriction all season to protect Sockeye stocks in central coast systems.
- Seines are required to brail and release Sockeye, Chinook and Steelhead to the water with the least possible harm for the duration of the 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 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 coordinated to distribute effort appropriately.
- Additional fishing time: A large fleet size could adversely affect small mixed-stock runs in the area. Extra fishing time may depend on openings in other areas in the North Coast.

Area 8:

- 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.
- 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.
- When possible, openings will be coordinated with other North and Central Coast areas.

Area 10:

- 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.

13.2.4.4 ALLOCATION AND FISHING PLANS

13.2.4.4.1 First Nations Fisheries

Food Social and Ceremonial

First Nations target local salmon stocks for food, social and ceremonial (FSC) purposes throughout the North Coast.

Actual opportunities and catches will be dependent on, among other factors; in-season stock strength, management measures taken to ensure conservation of individual stocks, community

needs of First Nations, and alternative sources of salmon if preferred species are not available locally due to low abundance.

Refer to Section 10.2 for Communal Licence Harvest Target Amount [Table 10.2-1](#) in Northern BC First Nations Fisheries.

Fishery Monitoring and Catch Reporting

The Strategic Framework for Fisheries Monitoring and Catch Reporting in the Pacific Fisheries is being applied in First Nations FSC fisheries across the region. Work towards this includes assessing current monitoring practices, programs and gaps. The First Nations Fishery Council (FNFC) and other area aggregate groups have assisted in engagement 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 Nations Band offices.

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 electronic 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 as a Microsoft Access program, the database 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. In 2010, work started on compiling all aspects of the approximate 34 current MS Access databases into one (1) VB style system that would be customizable for each Nations' needs. Work on the new system is ongoing.

For more information please contact Aleta Rushton at 250-230-1227.

Treaty Fisheries

There are no Treaty fisheries for Central Coast Chum.

13.2.4.4.2 Recreational Fisheries

Recreational salmon fishing occurs in the tidal waters of the Central Coast (Areas 6 to 10). The Chum salmon fishery is open April 1st to March 31st, with the peak of the season being from June to August. The daily limit for Chum salmon is four (4) per day, unless otherwise varied.

The minimum size limit for Chum salmon is 30 cm, in tidal waters and freshwater. The possession limit for salmon is twice the daily limit.

In Area 6 the early season effort is mostly by local independent anglers out of Kitimat, however the most significant portion of the recreational fishing season develops late May and continues to mid- September with the addition of a number of charter operators to the recreational fleet. One recreational fishing lodge operates in Area 6.

In Area 7, the main recreational fishing activity takes place in Milbanke Sound off of St. Johns Harbour and in Seaforth Channel between St. Johns and Idol Point, by several recreational lodges and charter operators.

In Area 8, the main recreational fishing effort in tidal water is concentrated in the Hakai Pass area by guests of the recreational lodges in the area. There were four lodges operating in 2018.

In Area 9, a total of six lodges operated in Rivers Inlet during the 2018 season.

There is a condition of licence in the recreational Tidal Waters Sport Fishing Licence that applies to all angling in the Rivers Inlet Special Management Zone (SMZ). Any anglers fishing in this area should consult the Tidal Waters Sport Fishing Regulations prior to commencing fishing.

Recreational harvesting occurs in Area 10, with participation by independent anglers and charter operators.

The Central Coast non-tidal waters are in Regions 5B and 6 freshwater fishing areas, and there are openings for Chum salmon in the different watersheds at different time periods. The minimum size limit is 30 cm, with daily and total possession limits.

In-season updates and fishery regulation changes can be found on the recreational fisheries website:

<http://www.bcsportfishing.ca>.

For direct notification of regulatory changes, individuals may sign up to have recreational fishery notices sent directly to their email at the website above. Refer to the link to subscribe to fishery notices on the right hand side of the page.

Fishery Monitoring and Catch Reporting

In Areas 6 to 9, DFO has been collecting recreational catch data through the Lodge Log Book Program. In Area 10, logbook information is used to provide catch and release numbers from anglers fishing in the area.

13.2.4.4.3 Commercial Fisheries

Table 13.2-3: Commercial Allocation Implementation Plan for the 2015–2019 period

| Description | Areas | Seine A | Gill Net C | Troll F |
|----------------|---------|--------------------|------------|---------|
| Central | 6 to 10 | 45.0% ^c | 55.0% | * |

Notes on Chum allocations (north):

^c currently Chum non-retention

* by-catch provision

Area 6

- **Area C:** Gill net openings will be dependent upon in-season assessments of hatchery Chum returns to the Kitimat River.
- **Area A:** Seine openings will be targeting Pink salmon populations in the Area. Bycatch of Chum is not permitted. Opportunities for targeting hatchery Chum will be assessed in-season.
- **Area F:** No troll opportunities for Chum fisheries in this area in 2019.
-

Area 7

- **Area A & C:** July 29 – First potential gill net and seine opening in 7-5, portion of 7-6 (Finlayson), portions of 7-9 (Mathieson) and 7-29 (Sheep), dependent on in-season assessment. Minimum mesh size 149 mm.
- Mid-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 Channell to harvest Neekas Creek Chum.
- Late August to early September – Considerations for net openings in 7-30 (Johnson Channel), 7-15 (Roscoe Inlet) and 7-13 (Spiller Channel).

- **Area F:** No troll opportunities for Chum fisheries in this area in 2019.

Area 8

- **Area C:** July 1 – Anticipated Chum gill net opening in the Bella Coola gillnet area and Fisher Channel/Fitz Hugh Sound. Minimum mesh size 158 mm (6.22 inches).
- **Area A:** July 15 – First anticipated seine opening in Fisher Channel/Fitz Hugh Sound.
- Minimum bunt mesh size 70 mm (2.76 inches)
- July 15 to August 15: Weedlines are in effect in upper 8-5 (Fisher Channel) and 8-8 (Upper Dean Channel)
- **Area F:** No troll opportunities for Chum fisheries in this area in 2019.

Area 9

- No Chum fisheries for any gear type are anticipated for this area in 2019.

Area 10

- No Chum fisheries for any gear type are anticipated for this area in 2019

13.2.4.4.4 ESSR Fisheries

There are no ESSR fisheries for Central Coast Chum

13.3 NORTHERN COHO SALMON FISHING PLAN

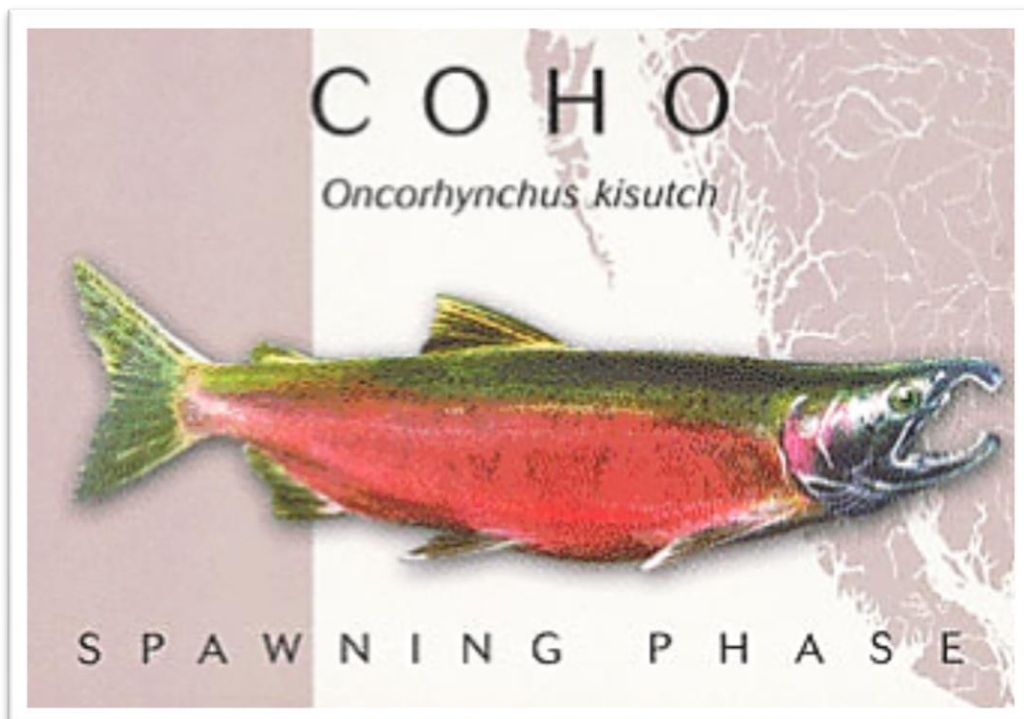
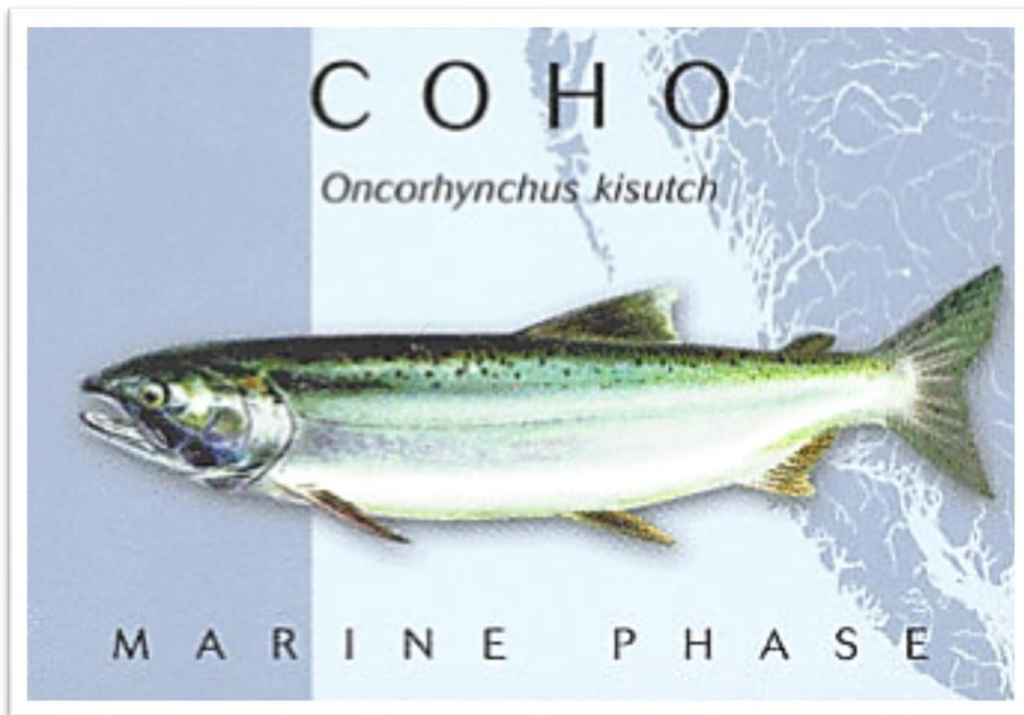


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13.3.1 NORTHERN COHO OVERVIEW

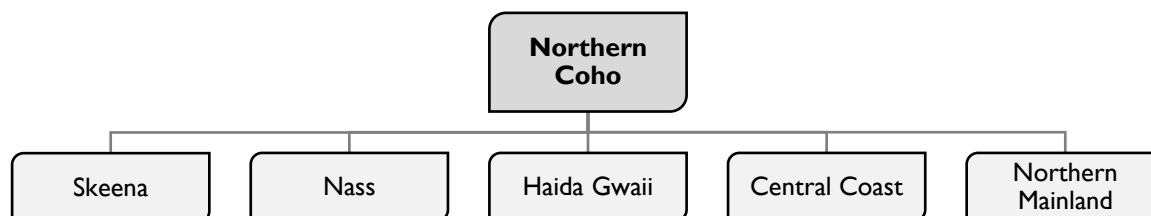


Figure 13.3-1: Overview of North Coast Coho

In recent years, Northern Coho are primarily harvested commercial troll and mixed-species fisheries; formal guidelines for abundance based harvest levels have not been developed. In general, commercial net fisheries on the North Coast and Central Coast start with Coho non-retention, which is reviewed in- season in each area based on observed abundance.

For 2019, lower productivity over previous years is forecasted based on low returns in 2018 for both interior and coastal Coho populations and continuance of lower marine survivals. However, there is very little data to review to develop an overall assessment.

13.3.1.1 NORTHERN COHO ENHANCEMENT INFORMATION:

The major BC North Coast DFO operation enhancement facilities that produce Coho are:

- Kitimat River hatchery
- Snootli Creek hatchery

The information available at the link below addresses production from major DFO Operations (OPS) facilities, contracted Community Economic Development Program hatcheries (CEDP), larger or more complex Public Involvement Projects (Designated Public Involvement or DPI) operated by volunteers, and Aboriginal Fisheries Strategy (AFS). 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.

There are two datasets available: **Post-Season Production** from the 2017 brood year (i.e. 2018 releases, and numbers on hand for 2019 release), and the **Production Plan**, which includes proposed targets for the upcoming 2019 brood year. These are available at the following website:

<http://www.pac.dfo-mpo.gc.ca/sep-pmvs/projects-projets/ifmp-pgip-eng.html>

13.3.2 NORTHERN COHO

13.3.2.1 SNAPSHOT OVERVIEW AND MAP OF MANAGEMENT UNIT

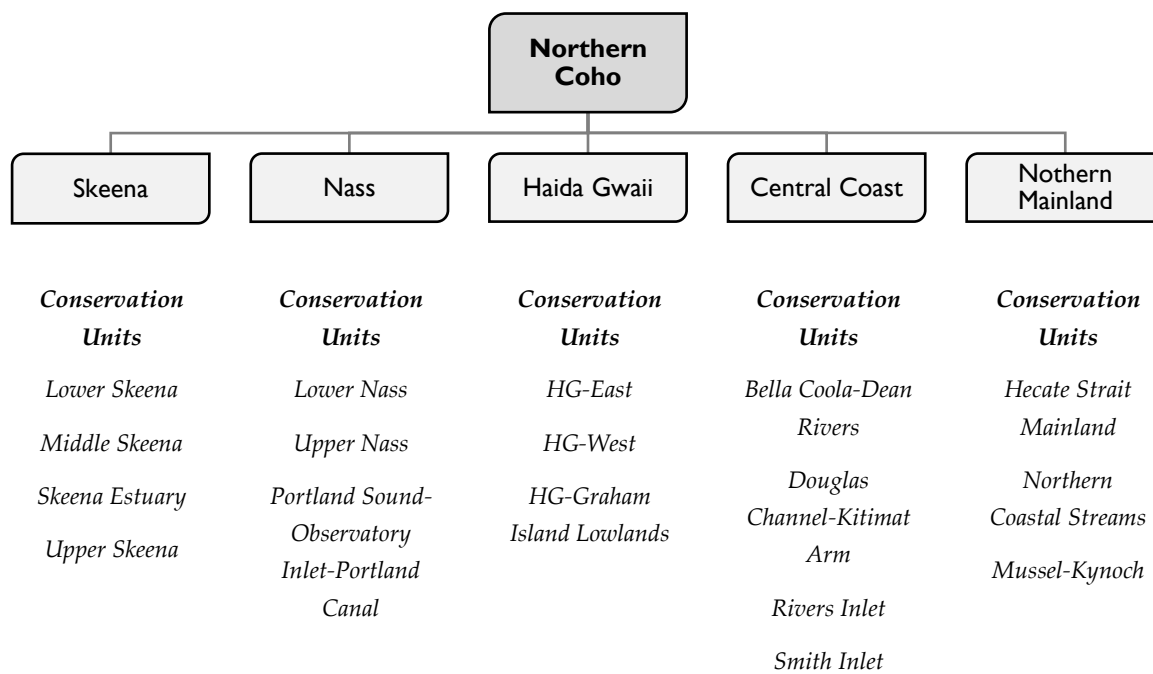


Figure 13.3-2: Overview of North Coast and Central Coast Coho

In Northern BC, Coho are typically caught as by-catch during First Nations' FSC fisheries that are directed on Sockeye but some small directed Coho FSC fisheries do occur. Nisga'a Coho catches are limited by the Nisga'a Final Agreement that depends on in-season abundance estimates generated from the Nass fishwheel mark-recapture program. First Nations Coho FSC catches have rarely been constrained by conservation objectives in the North and Central Coast.

Coho catches in the recreational fishery are managed by daily/possession limits and time and area closures. Poor returns of Coho to many North and Central Coast areas in 2018 has resulted in precautionary management measures to reduce overall exploitation in 2019. As such, there will be reduced commercial opportunities for Coho for the coming season and recreational freshwater regulations will be amended and are stream specific with restrictions in daily limits and time and area closures for some streams.

While directed marine commercial net fisheries for Coho are rare in the North and Central coasts, fisheries may be directed toward Coho where in-season abundance indicate strong returns. Coho by-catch may be permitted in commercial marine net fisheries depending on in-

season indices of abundance. For the start of the 2019 season, Coho by-catch will not be permitted in any commercial marine net fishery.

Coho harvest by Area F troll in western Dixon Entrance and around northern Haida Gwaii are composed of a wide variety of stocks, mostly from northern coastal mainland streams. In-season opportunities in mainland and terminal areas are made based on observations of Coho abundance. As noted above, poor returns of Northern Coho in 2018 will result in a delayed start date for this fishery in 2019 to reduce exploitation on Coho.

13.3.2.2 STOCK ASSESSMENT INFORMATION

13.3.2.2.1 Pre-season

There are no formal pre-season forecasts for Northern BC Coho. Most adults returning in 2019 are from the 2016 brood year that went to sea in 2018. Ocean indicators suggest conditions affecting early marine survival have been variable in recent years. Therefore, pre-season predictions for Coho returns in 2019 are uncertain. The qualitative Salmon Outlook contains the following predictions:

Haida Gwaii

Stocks in Haida Gwaii (Areas 1, 2E, 2W) have not been issued an Outlook category due to a lack of consistent assessment information across stocks. Deena Coho in the East Haida Gwaii CU are used as an indicator stock for Haida Gwaii. Returning Coho and are also enumerated at the Tlell counting fence. Limited stock assessment information is available for the remainder of Haida Gwaii CU's. Coho returns to Haida Gwaii are generally considered to be healthy.

Nass River

Nass River Coho (Area 3) returns are expected to below average but improved over 2018. Returns will depend on the survival of juveniles that went to sea in 2018.

Skeena River

Returns are expected to be low due to recent lower productivity, poor marine survivals and low returns in 2018. Returns are uncertain and depend on the survivals of the juveniles that went to sea in 2018.

Areas 5 and 6

Returns are uncertain and depend on the survival of the juveniles that went to sea in 2018.

Central Coast

Low returns are anticipated due to a period of lower productivity and low returns in 2018. However, there is very little data to develop an overall assessment. Returns are uncertain and depend on the survival of juveniles that went to sea in 2018.

13.3.2.2.2 In-season Assessment

At this time, there are no in-season assessments done on most Northern BC Coho stocks. On the Skeena River, the Tyee test fishery provides a relative index abundance but can only provide in-season escapement estimates for Sockeye due to calibration from Babine fence counts. On the Nass River, in-season estimates of Coho abundance are gained from the Nass fish wheel program operated by Nisga'a Fisheries.

13.3.2.3 DECISION GUIDELINES AND MANAGEMENT ACTIONS

Coho may be retained as by-catch during Sockeye-directed fisheries in Areas 3 and 4 when abundance permits. Changes to retention rules can occur in-season as abundance information is received. For 2019 there will be non-retention of Coho in all North Coast net fisheries. In Areas 6, 7 and 8, net fisheries will begin the season as non-retention Coho. Should returns indicate sufficient numbers, this may be re-evaluated in-season.

For Area F troll, management adjustments are made on an annual basis based on trends in abundance or impacts of the troll fishery on specific stocks. For 2019, the start date for this fishery has been delayed to **July 17** to reduce overall harvest rate by approximately 20% on northern Coho. More severe reductions may be required for 2020 should low productivity and poor marine survival continue.

The Coho-directed troll fishery may open in Area 3 depending on in-season Coho abundance indicator information. While the 50% probability forecasted point estimate for the Total Return to Canada (TRTC) of Nass Coho is 277,000, in-season estimates will be used to trigger directed fisheries. DFO will work closely with the Nisga'a to monitor Coho run strength via Nisga'a fish wheels.

Central Coast areas will initially be closed to full fleet troll opportunities but this may be adjusted in-season depending on Coho abundance. Continuation of the Central Coast Limited Effort Coho Demonstration Fishery, as proposed within Commercial Salmon Allocation Framework discussions is being considered for 2019.

13.3.2.4 INCIDENTAL HARVEST, BY-CATCH AND CONSTRAINTS TO NORTHERN COHO FISHERIES

Coho retention will not be allowed in Sockeye-directed fisheries in Areas 3 and 4. Changes to retention rules may change in-season if there are indications of stronger abundance through the Nass fishwheels and/or through the Tyee test fishery.

Non-retention of Coho in all net fisheries in Areas 1, 2 and 7 through 10.

The Pacific Salmon Treaty (PST) includes a provision for closing North Coast troll fisheries. Specifically, a Coho CPUE for a specified time period and location of the southeast Alaska troll fishery is used as a trigger for closures to areas 1, 3, 4, 5 and adjacent offshore areas. This provision of the treaty has never been invoked. Further work to develop this trigger and others for use in domestic management decisions regarding Coho is currently underway.

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

13.3.2.5 ALLOCATION AND FISHING PLANS

13.3.2.5.1 First Nations Fisheries

Food Social and Ceremonial

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 north coast First Nations are typically multi-species, and are issued on an annual basis. Licences may also be amended for shorter durations.

Actual opportunities and catches will be dependent on, among other factors; in-season stock strength, management measures taken to ensure conservation of individual stocks, community needs of First Nations, and alternative sources of salmon if preferred species are not available locally due to low abundance.

Refer to Section 10.2 for Communal Licence Harvest Target Amount [Table 10.2-1](#) in the Northern BC First Nations Fisheries.

Fishery Monitoring and Catch Reporting

The Strategic Framework for Fisheries Monitoring and Catch Reporting in the Pacific Fisheries is being applied in First Nations FSC fisheries across the region. Work towards this includes assessing current monitoring practices, programs and gaps. The First Nations Fishery Council (FNFC) and other area aggregate groups have assisted in engagement 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 Nations Band offices.

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 electronic 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 as a Microsoft Access program, the database 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. In 2010, work started on compiling all aspects of the approximate 34 current MS Access databases into one (1) VB style system that would be customizable for each Nations' needs. Work on the new system is ongoing.

Treaty Fisheries

Nisga'a Fisheries

The Nisga'a Annual Fishing Plan (NAFP) is developed by the Nisga'a-Canada-BC Joint Fisheries Management Committee (JFMC) and governed by the terms of the Nisga'a Final Agreement and the Nisga'a Harvest Agreement of the Nisga'a Treaty. The Nisga'a Harvest Agreement includes Nisga'a fish allocations expressed as a percentage of the adjusted total allowable catch of Sockeye and Pink salmon. The NAFP is developed in accordance with Chapter 8 of the Nisga'a Final Agreement. Once approved by the Federal Minister of Fisheries, the Nisga'a 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 salmon allocations, as defined in the Nisga'a Treaty, are set out as a percentage of the Total Return to Canada (TRTC) up to maximum catch thresholds (63,000 Sockeye [10.5%], 6,300 Pink [0.6%], 12,600 Chinook [21%], 19,200 Coho [8%], and 12,000 Chum [8%]) in large return years.

These other Nisga'a salmon allocations have the same priority in fisheries management decisions as other domestic [food, social and ceremonial (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 2019 are:

Nass Coho: The Total Run size probability point estimate for 2019 from a pre-season brood regression model of 3 and 4 year old returns for Coastal, Lower, and Upper Nass Coho stocks is 529,000 (50%) with a range in point estimates between 456,000 (75%) and 613,000 (25%).

Assuming a 47.7% Alaskan exploitation rate (based on the average from 2013 to 2017, approximately 252,000 Nass Coho), the 50% probability point estimate for the Total Return to Canada (TRTC) of Nass Coho is 277,000 with a range of point estimates from 239,000 (75% probability) to 321,000 (25% probability). The forecast method's mean absolute accuracy for predicting TRTC returns was 71.4% (range: 46–98%) for 2013 to 2017 returns. Based on the pre-season TRTC forecasts and the minimum escapement goal (40,000) for Nass Coho for 2019, the Nisga'a allocation is near the 19,200 maximum entitlement limit. The mean TRTC estimate

(277,000) will be used for calculating the initial target for the in-season Nisga'a allocation (19,100) of Nass area Coho for 2019. The actual allocation target may be larger (up to 35,000), depending on run strength, to account for the current cumulative underage (approximately 16,000) accrued from 2000 to 2018. The cumulative underage would only be targeted in years where adequate abundances are available for harvest, as indicated by in-season assessments.

13.3.2.5.2 Recreational Fisheries

Recreational fisheries targeting Northern BC Coho take place in marine Areas 1 through 10 and in-river. Conservation measures to protect Coho will be in place in a number of areas and times.

In-season updates and fishery regulation changes can be found on the recreational fisheries website:

<http://www.bcsportfishing.ca>.

For direct notification of regulatory changes, individuals may sign up to have recreational fishery notices sent directly to their email at the website above. Refer to the link to subscribe to fishery notices on the right hand side of the page.

The possession limit for salmon is twice the daily limit.

In North Coast tidal waters, the minimum size limit for Coho salmon is 30 cm, with daily and total possession limits in effect. The open time is April 1st to March 31st.

Haida Gwaii (Areas 1 and 2)

Recreational salmon fishing primarily occurs in the tidal waters surrounding Haida Gwaii, with the majority of effort focused along the shoreline from Masset to Langara Island in Area 1 and between Englefield Bay and Port Louis in Area 2W. Recreational fishing occurs primarily between May and September with peak effort and catch occurring in July and August. The recreational fishery targets Coho of mixed stocks from across the north and central coast of B.C.

Nass (Area 3)

Recreational salmon fishing occurs in the tidal waters adjacent to the Nass River, with the peak of the season being from June to August.

The Nass River and tributaries are in Region 6 freshwater fishing area, and there are openings for Coho salmon throughout the watershed at different time periods. The standard close time for Coho is November 1st to December 31st. The minimum size limit is 30 cm, with daily and total possession limits in effect.

Skeena (Area 4)

Recreational salmon fishing occurs in the tidal waters adjacent to the Skeena River, with the peak of the season being from June to August.

The tidal waters salmon recreational fishery in Pacific Fishery Management Area 4 begins with low effort in late April with early season participation by local area residents. Independent and guided day charter effort increases significantly in late May and remains high throughout the peak season in June, July and August, decreasing at the end of August with primarily local participants again by the end of September.

The Skeena River and tributaries are in Region 6 freshwater fishing area, and there are openings for Coho throughout the watershed at different time periods. On the lower Skeena River mainstem, the standard opening is July 15th to November 30th, with daily and total possession limits in effect. On the upper Skeena River mainstem, the standard opening is July 15th to October 15th. The minimum size limit is 30 cm. .

Areas 5 & 6 Tidal Waters

The Area 5 tidal water interception salmon recreational fishery begins in late April. Initial effort is mostly by local independent anglers out of Prince Rupert and Port Edward, however the most significant portion of the recreational fishing season develops late May and continues to mid- September. The fleet operating in Area 5 is made up mainly of independent anglers and charter operators.

The Area 6 tidal water interception salmon recreational fishery begins in late April. Initial effort is mostly by local independent anglers out of Kitimat. One recreational fishing lodge and a number of charter operators also fish in Area 6 with the most significant portion of the recreational fishing season taking place between late May and mid-September.

In the mainland watersheds of Region 6 freshwater fishing area, a standard closed time for Coho is November 1st to December 31st. Depending on the watershed, openings occur on different dates, with daily and total possession limits in effect.

Central Coast (Areas 7 to 10)

In Area 7, the main recreational fishing activity takes place in Milbanke Sound off of St. Johns Harbour and in Seaforth Channel between St. Johns and Idol Point, by several recreational lodges and charter operators.

In Area 8, the main recreational fishing effort in tidal water is concentrated in the Hakai Pass area by guests of the recreational lodges in the area. There were four lodges operating in 2018.

In Area 9, a total of six lodges operated in Rivers Inlet during the 2018 season.

A condition of licence in the recreational Tidal Waters Sport Fishing Licence, applies to all angling in the Rivers Inlet Special Management Zone. Any anglers fishing in this area should consult the Tidal Waters Sport Fishing Regulations prior to commencing fishing. The online guide can be found at:

<http://www.bcsportfishingguide.ca>

Recreational harvesting does occur in Area 10, with participation by independent anglers and charter operators.

The Central Coast non-tidal waters are in Regions 5B and 6 freshwater fishing areas, and there are openings for Coho salmon in the different watersheds at different time periods. The minimum size limit is 30 cm, with daily and total possession limits in effect. Many rivers have closures from October to December.

Fishery Monitoring and Catch Reporting

In Haida Gwaii, DFO has been collecting recreational catch data through the Lodge Log Book Program and the Haida Creel Program since 1995. Participation in monitoring and reporting of recreational catch in Areas 1 and 2 has been excellent over the past 25 years. Monitoring is continuing to improve with region wide initiatives.

The Area 3 and 4 creel program operated by the North Coast Skeena First Nations Stewardship Society ran from June 1 to August 31, 2018 with a recorded total of 10,734 boat trips and a retained catch of 10,438 Coho.

A creel survey of the freshwater recreational fisheries on the Skeena River watershed was not conducted in 2018

A creel survey of the freshwater recreational fisheries in four river systems of the Nass watershed was not conducted in 2018. The mean average in-river recreational catch of Nass Sockeye from 2000-2015 is 540 fish. In Areas 6 to 9, DFO has been collecting recreational catch data through the Lodge Log Book Program. In Area 10, Logbook information is used to provide catch and release numbers from anglers fishing there.

Area 7

A total of 3,639 Coho were reported caught during the 2018 season. The Coho CPUE for 2018 of 0.57 is below last year's 0.73 and below the 10 year (2008-2017) average of 0.90.

Area 8 - Tidal

A total of 4,895 Coho were reported caught during the 2018 season. The 2018 CPUE was 0.66 compared to the 10 year (2008-2017) average of 0.83.

Area 8 – Non-Tidal

Anecdotal reports of recreational Coho fishing in 2018 indicates that fishing was below average

Area 9

A total of 7,535 Coho were reported caught during the 2018 season. The Coho CPUE of 0.81 for 2018 is slightly below the ten year (2008-2017) average of 0.84.

Area 10

13 Coho were reported caught during the 2018 season. The Coho CPUE of 0.27 for 2018 is below the 5 year average of 0.33.

13.3.2.5.3 Commercial Fisheries

When abundance permits, Coho may be taken as by-catch in Sockeye-directed net fisheries in Areas 3 and 4. Commercial opportunities for Coho for the Area F troll fleet occur in off-shore portions of Haida Gwaii and in Dixon Entrance. Additional opportunities in Area 3 and in the Central Coast are possible in years of sufficient abundance.

Allocation

Table 13.3-1: Commercial Allocation Implementation Plan for the 2015–2019 period

| Description | Areas | Seine A | Gill Net C | Troll F |
|--------------|-------------------------------|---------|------------|---------|
| North | 1 to 10, 101 to 111, 130, 142 | 12.5% | 6.5% | 81.0% |

*Northern BC Coho Fisheries**Area C Gillnet*

The Area C Harvest Committee has indicated interest in creating a Coho-directed fishery in portions of Areas 3, however further discussion is required to develop fishery strategies that mitigate stocks of concern such as Area 3 Chum which currently limit directed fisheries and has a rebuilding management objective.

Retention of Coho will not be allowed in Sockeye-directed gill net fisheries in Areas 3 and 4. This may be modified in-season as more information on stock abundance becomes available.

Non-retention of Coho in all gill net fisheries in Areas 1 and 2.

In the Central Coast, gill net opportunities will be non-retention Coho unless otherwise specified.

Area A Seine

There are no directed fisheries for Northern BC Coho.

Retention of Coho will not be allowed in Sockeye and Pink-directed seine fisheries in Areas 3 and 4. This may be modified in-season as more information on stock abundance becomes available. Non-retention of Coho in all seine fisheries in Areas 1, 2 and 6.

In the Central Coast, seine openings will be non-retention Coho unless specified in the fishery notice.

Area F Troll

Opening dates for the Area F Coho-directed Troll fishery are as follows:

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

- Subarea 101-2 north of 54 degrees 10.552 minutes north latitude.
- Subareas 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 degrees 14.976 minutes North and 133 degrees 04.386 minutes West 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 2-3, 2-4 and 102.
- Those portions of Subareas 3-1 and Areas 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 degrees 27.900 minutes North and 130 degrees 39.800 minutes West then to 53 degrees 27.985 minutes North and 130 degrees 35.246 minutes West then to 53 degrees 23.700 minutes North and 130 degrees 22.700 minutes West then to 53 degrees 18.700 minutes North and 130 degrees 21.500 minutes West then to 53 degrees 24.300 minutes North and 130 degrees 38.000 minutes West and then to the beginning point.

Subarea 105-2, except that portion inside or shoreward of a line that begins at 53 degrees 15.900 minutes North and 130 degrees 22.200 minutes West then to 53 degrees 16.100 minutes North and 130 degrees 16.700 minutes West then to 53 degrees 10.000 minutes North and 130 degrees 06.200 minutes West then to 53 degrees 10.000 minutes North and 130 degrees 21.300 minutes West and then to the beginning point.

- Coho retention will be permitted during the Chinook directed fishery opening on Aug. 20th which will include additional areas along the west coast of Haida Gwaii.
- Trolling is closed in all rockfish conservation areas listed in Appendix 3 and the strict protection zones of the Gwaii Haanas National Marine Conservation Area Reserve and Haida Heritage Site.

Full fleet troll fishing opportunities in Area 3 and Central Coast will be determined by in-season monitoring of Coho abundance. Continuation of the Central Coast Limited Effort Coho demonstration fishery for the Area F troll fishery may occur in 2019.

Fishery Monitoring and Catch Reporting

Fishery Monitoring and Catch Reporting includes the following:

- Mandatory requirement to file fishing reports in all commercial fisheries, including “Start/Pause/Cancel/End” Fishing reports.

- Mandatory catch reporting by phone-in with a paper harvest log and electronic transmission with an electronic harvest log (E-log) in all commercial fisheries. (*Catch reporting requirements are specific to each licence group and are detailed in the conditions of licence for each gear type*).
- Mandatory validation of all salmon for vessels that have retained Chinook.

All Area F trollers are required to submit daily catch reports within 24 hours of landing.

Retention of freezer troll salmon heads

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 2018 fishing season. This fisheries notice is expected to be released prior to the opening of the fishery.

Poor compliance and head retention practices prior to 2013 led to the requirement that 50% of the Area F troll fleet retain salmon heads to ensure that Canada met its obligation to sample a minimum of 20%. In recent years, salmon head recovery compliance by the Area F troll fleet has improved allowing for a reduction in the number for vessels that retain salmon heads.

For 2019, the exemption rate will be between 70%. As in past seasons, licences that were insufficiently diligent in carrying out their conditions of license to bring in all Chinook and Coho heads will not be exempted in 2018.

Skeena Coho Inland Demonstration Fishery

The inland demonstration fishery will only take place if the Skeena Coho run returns in sufficient strength to trigger retention in a commercial fishery in Area 4. The total inland allocation will be determined in-season and based off of historic and in-season stock assessment information, specific to the harvest area.

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 Jen Gordon at (250) 627-3421.

13.3.2.5.4 ESSR Fisheries

There are currently no ESSR fisheries for Northern BC Coho.

13.4 NORTHERN PINK SALMON FISHING PLAN

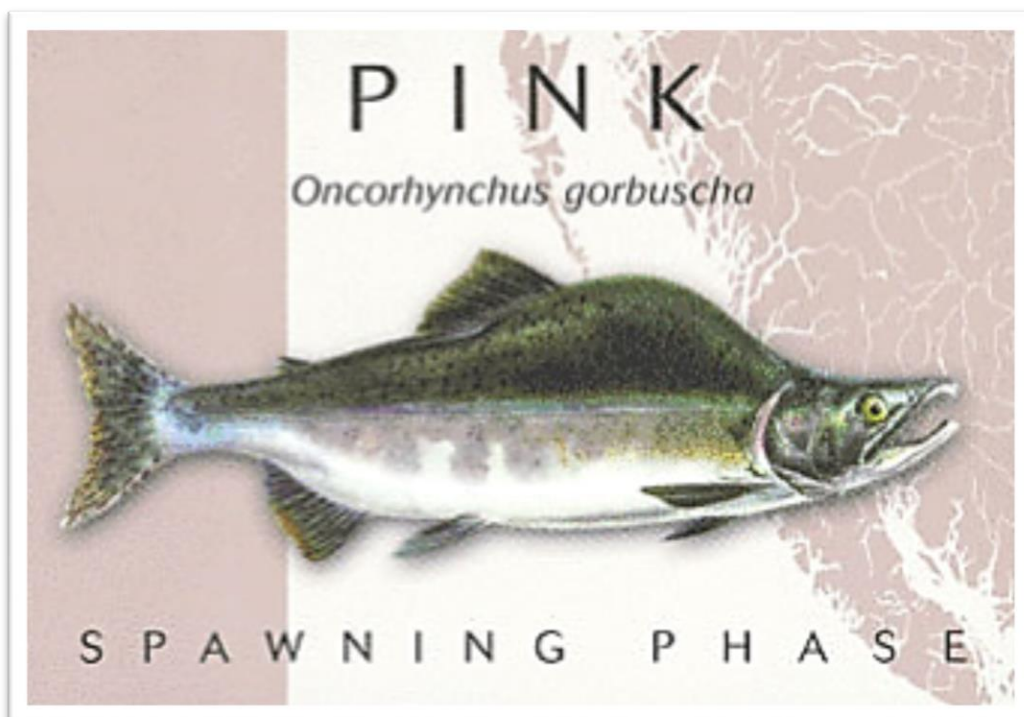
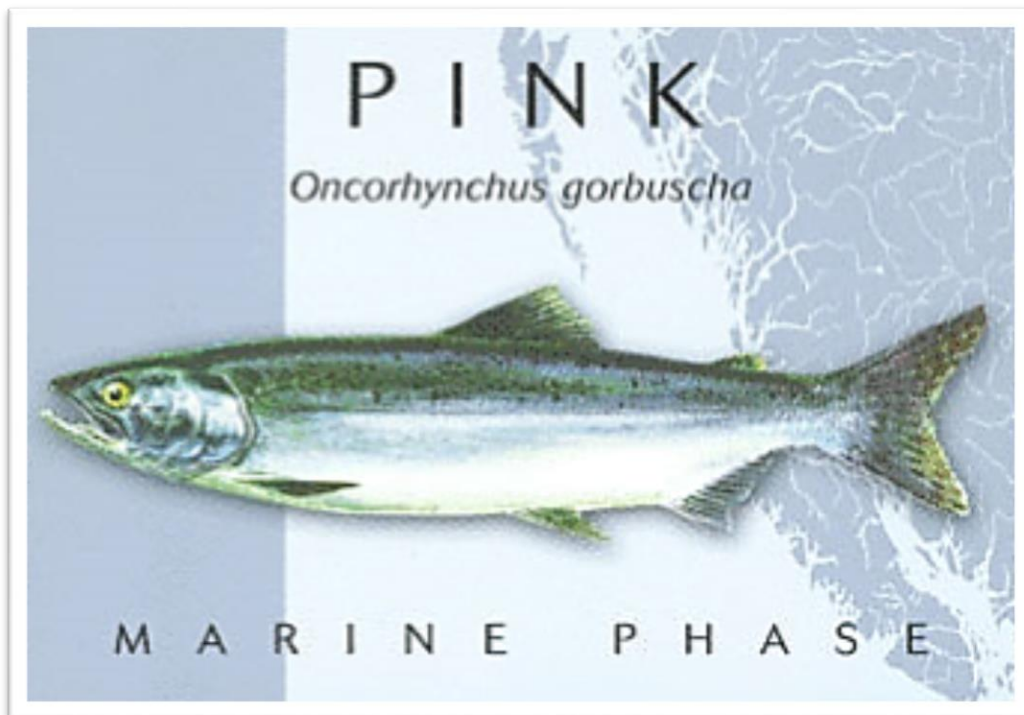


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13.4.1 NORTHERN PINK SALMON OVERVIEW

Pink salmon are the most abundant of the salmon species. They are unusual in having a fixed 2-year life span and also are the smallest in size as adults. Most areas of the North Coast see a dominant year class in Pink returns, with either an odd-year or even-year class returning in much greater numbers than the year previous.

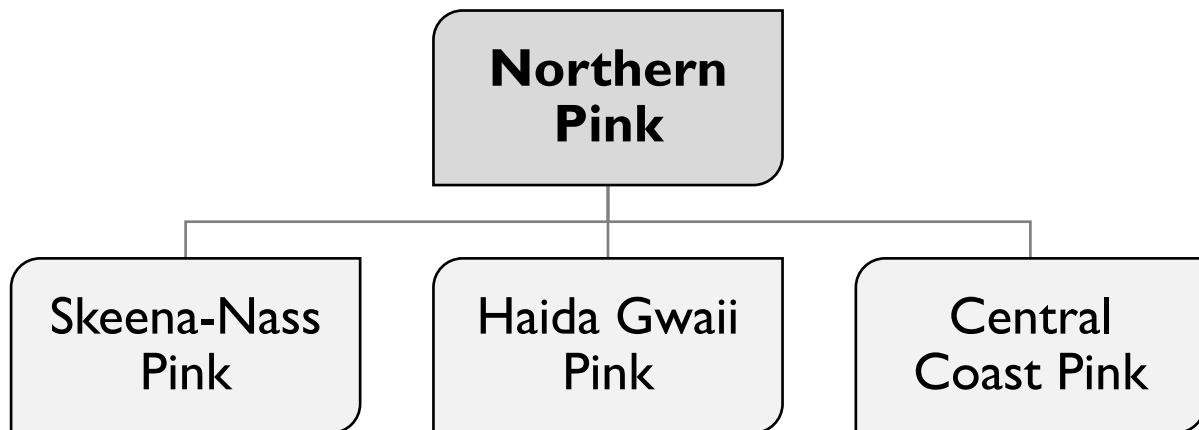


Figure 13.4-1: Overview of Northern Pink Salmon

13.4.2 HAIDA GWAII PINK SALMON

13.4.2.1 SNAPSHOT OVERVIEW AND MAP OF MANAGEMENT UNIT

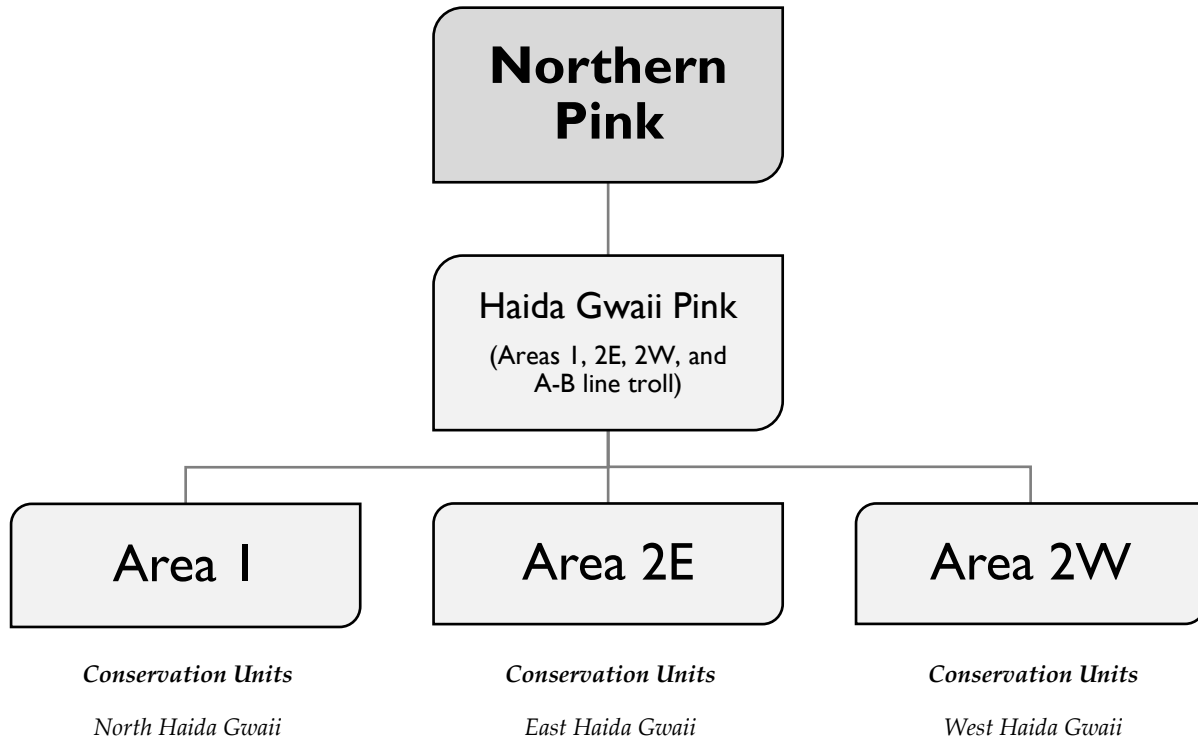


Figure 13.4-2: Conservation Units in the Haida Gwaii Pink Salmon Management Unit (1 CU)

Haida Gwaii Pink salmon return on a two year cycle, with dramatic differences in return strength between even and odd calendar years. Most streams have a strong return of Haida Gwaii Pink salmon during even calendar years only. Directed harvests are only anticipated during even years.

Pink salmon are also harvested in the Area F troll fishery.

13.4.2.2 STOCK ASSESSMENT INFORMATION

13.4.2.2.1 Pre-season

There are no formal pre-season forecasts for Haida Gwaii Pinks. Pre-season predictions for Pink salmon surpluses are not reliable and opportunities for Pink salmon fisheries are managed in-season.

The Outlook prediction for Haida Gwaii odd year Pinks is poor based on the fact that they are odd-year dominant and poor brood year escapements in 2017.

13.4.2.2.2 In-season

In odd numbered years, there is no in-season assessment for Pink salmon.

In even years, assessment of Haida Gwaii Pink run size and escapement is visually assessed by charter patrolmen and opportunistically by DFO staff. Additional assessments are coordinated with the Haida Fisheries Program and Parks Canada. The main areas assessed for harvest opportunities are Masset Inlet, Skidegate Inlet, Cumshewa Inlet, Selwyn Inlet, Darwin Sound, Rennel Sound, West Skidegate and Englefield Sound.

13.4.2.3 DECISION GUIDELINES AND MANAGEMENT ACTIONS

Terminal net fishery openings are based on fish observed schooling in front of the various systems. Fisheries will only be considered if sufficient salmon return to meet escapement goals. The size of the return will be estimated by charter patrolmen visual assessments.

For Area F troll, 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.

13.4.2.4 INCIDENTAL HARVEST, BY-CATCH AND CONSTRAINTS TO HAIDA GWAII PINK FISHERIES

Odd year Haida Gwaii Pink returns are low and fisheries are not planned to target directly on the stock.

In even years, assessment of escapements to streams in and near the surplus to be harvested will need to be conducted. 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 fishing opportunity.

Coho by-catch may be a concern in some areas. Brailing by seines and the use of revival boxes by both gill nets and seines will be required.

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

13.4.2.5 ALLOCATION AND FISHING PLAN

13.4.2.5.1 First Nations Fisheries

Food Social and Ceremonial Fisheries

First Nations opportunities to harvest salmon for FSC 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 north coast First Nations are typically multi-species, and are issued on an annual basis. Licences may also be amended for shorter durations.

Actual opportunities and catches will be dependent on, among other factors; in-season stock strength, management measures taken to ensure conservation of individual stocks, community needs of First Nations, and alternative sources of salmon if preferred species are not available locally due to low abundance.

Refer to Section 10.2 for Communal Licence Harvest Target Amount [Table 10.2-1](#) in Northern BC First Nations Fisheries.

Fishery Monitoring and Catch Reporting

The Strategic Framework for Fisheries Monitoring and Catch Reporting in the Pacific Fisheries is being applied in First Nations FSC fisheries across the region. Work towards this includes assessing current monitoring practices, programs and gaps. The First Nations Fishery Council (FNFC) and other area aggregate groups have assisted in engagement 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 Nations Band offices.

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 electronic 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 as a Microsoft Access program, the database 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. In 2010, work started on compiling all aspects of the approximate 34 current MS Access databases into one (1) VB style system that would be customizable for each Nations' needs. Work on the new system is ongoing.

For more information please contact Aleta Rushton at 250-230-1227.

Treaty Fisheries

There are currently no Treaty fisheries for Haida Gwaii Pink salmon.

13.4.2.5.2 Recreational Fisheries

Recreational salmon fishing occurs primarily occurs in the tidal waters surrounding Haida Gwaii, with the majority of effort focused along the shoreline from Masset to Langara Island in Area 1 and between Englefield Bay and Port Louis in Area 2W. Recreational fishing occurs primarily between May and September with peak effort and catch occurring in July and August. Pink salmon are incidentally retained in the recreational fishery which primarily

targets Chinook and Coho salmon. The daily aggregate limit of salmon is four (4) per day and a maximum 2 of which may be Chinook.

In-season updates and fishery regulation changes can be found on the recreational fisheries website:

<http://www.bcsportfishing.ca>.

For direct notification of regulatory changes, individuals may sign up to have recreational fishery notices sent directly to their email at the website above. Refer to the link to subscribe to fishery notices on the right hand side of the page.

Fishery Monitoring and Catch Reporting

DFO has been collecting recreational catch data through the Lodge Log Book Program and the Haida Creel Program since 1995. Participation in monitoring and reporting of recreational catch in Areas 1 and 2 has been excellent over the past 25 years. Monitoring is continuing to improve with region wide initiatives.

13.4.2.5.3 Commercial Fisheries

In 2019, potential opportunities for commercial fisheries for Haida Gwaii Pink salmon are not anticipated.

| Description | Areas | Seine A | Gill Net C | Troll F |
|--------------------|--------------------------------------|----------------|--------------------|----------------|
| North | 1, 2E, 2W (even), 3 to 5, 101 to 105 | 75.5% | 22.5% ^a | 2.0% |

Notes on Pink allocations (north):

^a Skeena sharing 75% seine: 25% gillnet

Haida Gwaii Pink Fisheries

Although 2019 is an odd year cycle and no directed fisheries are anticipated for Haida Gwaii Pink salmon, fishing opportunities may be considered if stocks appear to be returning in sufficient abundance. Commercial harvest opportunities are dependent on run timing, but typically occur in the last half of August.

Area A (Seine) and Area C (Gill Net)

No gillnet or seine fisheries will be directed on passing stocks.

Area F Troll

Retention of Pink salmon will be permitted in conjunction with troll openings targeting Coho and Chinook as follows; the opening dates for the Area F Coho-directed Troll fishery are under discussion:

July 1– AB Line Targeted Pink and Coho fishery opening. See Section [13.3](#) – Northern Coho for details.

July 17– Coho fishery opening. See Section [13.3](#) – Northern Coho for details.

August 20 – Chinook ITQ opening. See Section 13.1 – Northern AABM Chinook for details.

Fishery Monitoring and Catch Reporting

Fishery Monitoring and Catch Reporting includes the following:

- Mandatory requirement to file fishing reports in all commercial fisheries, including “Start/Pause/Cancel/End” Fishing reports.
- Mandatory catch reporting by phone-in with a paper harvest log and electronic transmission with an electronic harvest log (E-log) in all commercial fisheries. (*Catch reporting requirements are specific to each licence group and are detailed in the conditions of licence for each gear type*).

13.4.2.5.4 ESSR Fisheries

There are no anticipated ESSR fisheries for Haida Gwaii Pink salmon

13.4.3 SKEENA-NASS PINKS

13.4.3.1 SNAPSHOT OVERVIEW AND MAP OF MANAGEMENT UNIT

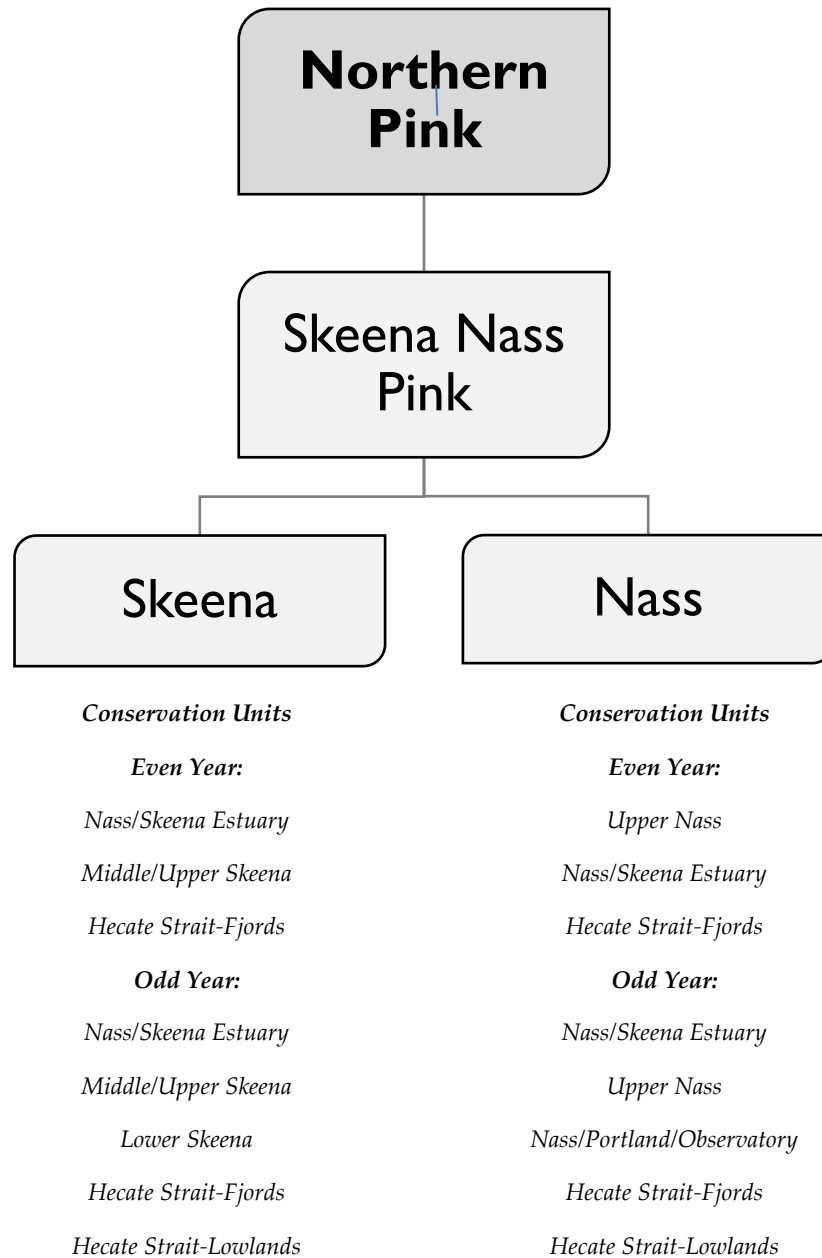


Figure 13.4-3: Conservation Units in the Skeena-Nass Pink Salmon Management Unit

Pink returns to the Nass watershed are dominant in odd-years with major returns seen to the Iknouk, Kwinimass and Khutzeymateen Rivers. Most Area 3 Pink stocks arrive in the fishing area at approximately the same time, usually in mid-July. The outer coastal stocks are an exception, arriving in August and early September.

In the Skeena River, 128 systems have recorded Pink salmon presence. Tagging studies were conducted in 1982, 1984 and 1985. These studies were designed primarily to provide information on interception rates of southeast Alaskan Pink stocks, but also provided information on stock abundance, migration and timing of Canadian stocks. Management stock groupings are Skeena River and Coastal. There are no major coastal Pink stocks in Areas 4 or 5; the majority of returns to these areas are from a number of small streams that contribute to the total return.

13.4.3.2 STOCK ASSESSMENT INFORMATION

13.4.3.2.1 Pre-season

There are no formal pre-season forecasts for Pinks in the Nass or Skeena systems. Both systems usually see greater returns in odd years, with smaller returns in even years. Historically Pink returns have been highly variable and expectations are highly uncertain.

The 2019 Salmon Outlook prediction for Skeena-Nass Pinks is low to average based on the strength of the brood year. However, returns are known to be highly variable. Fishing opportunities in Areas 3, 4 and 5 will be based on in-season indications of abundance.

13.4.3.2.2 In-season

Returns of Pink salmon to the Nass River are monitored through the fish wheel program operated by Nisga'a Fisheries. 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.

The Tyee test fishery on the Skeena River is the main indicator for relative abundance of Pink salmon in Areas 4 and 5 through the use of a multi-panel gill net with varying mesh sizes. 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. Fishing opportunities for Pinks in Area 5 are managed in conjunction with Area 4 openings.

13.4.3.3 DECISION GUIDELINES AND MANAGEMENT ACTIONS

In-season Decisions

Weekly in-season decisions for Nass Pinks 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 Pinks.
- 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.

Fisheries on the Skeena traditionally switch focus from Sockeye to Pink salmon in mid-August when abundance permits. Once the fishery switches to Pink management, if 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. Coastal Area 4 and 5 Pink stocks are traditionally managed in accordance with Skeena runs until early-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 generated from Charter Patrol assessments.

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. Small mesh nets would be implemented to minimize the by-catch of Sockeye and Chum, and the fishery would be terminated if by-catch encounters were found to be high.

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

13.4.3.4 INCIDENTAL HARVEST, BY-CATCH AND CONSTRAINTS TO SKEENA AND NASS PINK FISHERIES

- For Nass area fisheries, Pink fishing opportunities will be managed to conserve weak stocks of Area 3 Chum. Area 3 Chum and Kwinageese Sockeye are stocks of concern and will require focused management planning.
- Non-retention of steelhead in all Skeena and Nass area fisheries is mandatory.

- Area 4 and 5 fisheries will be managed in late July and early August to minimize impacts to weak Sockeye and Chum stocks.
- Skeena Pink fishing opportunities may be limited to reduce harvest impacts on Skeena Sockeye and Chum stocks by restricting late season openings and ensuring compliance during seine Pink harvests.
- Non-retention of Coho and Chinook in all net fisheries will be mandatory for 2019. Additional constraints may be implemented to reduce incidental mortality on these species.

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

13.4.3.5 ALLOCATION AND FISHING PLANS

13.4.3.5.1 First Nations Fisheries

Food Social and Ceremonial Fisheries

First Nations opportunities to harvest salmon for FSC 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 north coast First Nations are typically multi-species, and are issued on an annual basis. Licences may also be amended for shorter durations.

Actual opportunities and catches will be dependent on, among other factors; in-season stock strength, management measures taken to ensure conservation of individual stocks, community needs of First Nations, and alternative sources of salmon if preferred species are not available locally due to low abundance.

Refer to Section 10.2 for Communal Licence Harvest Target Amount [Table 10.2-1](#) in Northern BC First Nations Fisheries.

Fishery Monitoring and Catch Reporting

The Strategic Framework for Fisheries Monitoring and Catch Reporting in the Pacific Fisheries is being applied in First Nations FSC fisheries across the region. Work towards this includes assessing current monitoring practices, programs and gaps. The First Nations Fishery Council (FNFC) and other area aggregate groups have assisted in engagement 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 Nations Band offices.

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 electronic 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 as a Microsoft Access program, the database 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. In 2010, work started on compiling all aspects of the approximate 34 current MS Access databases into one (1) VB style system that would be customizable for each Nations' needs. Work on the new system is ongoing.

For more information please contact Aleta Rushton at 250-230-1227.

Treaty Fisheries

Nisga'a Fisheries

The Nisga'a Annual Fishing Plan (NAFP) is developed by the Nisga'a-Canada-BC Joint Fisheries Management Committee (JFMC) and governed by the terms of the Nisga'a Final Agreement and the Nisga'a Harvest Agreement of the Nisga'a Treaty. The Nisga'a Harvest Agreement includes Nisga'a fish allocations expressed as a percentage of the adjusted total allowable catch of Sockeye and Pink salmon. The NAFP is developed in accordance with Chapter 8 of the Nisga'a Final Agreement. Once approved by the Federal Minister of Fisheries, the Nisga'a 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 salmon, as defined in the Nisga'a Harvest Agreement, are set out as a percentage of the Canadian Total Allowable Catch for Nass Area stocks, 13% for Nass Sockeye and 15% for Nass Pink). Nisga'a Harvest Agreement fisheries have the same priority in fisheries management decisions as other commercial and recreational fisheries that target Nass Area salmon stocks. Other Nisga'a salmon allocations, as defined in the Nisga'a Treaty, are set out as a percentage of the Total Return to Canada (TRTC) up to maximum catch thresholds (63,000 Sockeye [10.5%], 6,300 Pink [0.6%], 12,600 Chinook [21%], 19,200 Coho [8%], and 12,000 Chum [8%]) in large return years. These other Nisga'a salmon allocations have the same priority in fisheries management decisions as domestic [food, social and ceremonial (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 2019 are:

Nass Pink: The Total Run size probability point estimate for 2019 from a pre-season odd-year brood regression model (2 year) is 653,000 (50%) with a range in point estimates between 449,000 (75%) and 950,000 (25%). Assuming a 8% Alaskan exploitation rate (based on the average of odd-years from 2009 to 2017, approximately 51,000 Nass Pink), the 50% probability point estimate for the Total Return to Canada (TRTC) of Nass Pink is 602,000 with a range of point estimates from 414,000 (75% probability) to 876,000 (25% probability). The forecast method's mean absolute accuracy for predicting TRTC returns was 84.2% (range: 69–99%) for 2015 and 2017 returns. Based on the pre-season TRTC forecasts and the minimum escapement

goal (225,000) for 2019, the Nisga'a allocation ranges between 30,000 and 103,000. The mean TRTC estimate (602,000) will be used for calculating the initial target for the in-season Nisga'a allocation (approximately 60,000) for Nass area Pink in 2019. The actual Nisga'a allocation target for 2019 may be increased to 88,000 depending on run strength to account for the current cumulative underage (approximately 28,000) accrued from the 2015 and 2017 returns. The cumulative underage would only be targeted in years where adequate abundances are available for harvest, as indicated by in-season assessments.

13.4.3.5.2 Recreational Fisheries

Recreational salmon fishing occurs in the tidal waters adjacent to the Nass and Skeena Rivers, Areas 3 & 4. The fishery is open April 1st to March 31st, with the peak of the season being from June to August. The daily limit for Pink salmon in Areas 3 & 4 is four (4) per day, unless otherwise varied.

The Nass and Skeena Rivers and tributaries are in Region 6 freshwater fishing area, and an opening for Pink salmon occurs on the Nass and Skeena mainstems from July 1st to September 15th. The minimum size limit is 30 cm, and a daily limit of 2 fish.

The minimum size limit for Pink salmon is 30 cm, in tidal waters and freshwater. The possession limit for salmon is twice the daily limit.

In-season updates and fishery regulation changes can be found on the recreational fisheries website:

<http://www.bcsportfishing.ca>.

For direct notification of regulatory changes, individuals may sign up to have recreational fishery notices sent directly to their email at the website above. Refer to the link to subscribe to fishery notices on the right hand side of the page.

Fishery Monitoring and Catch Reporting

The Area 3 and 4 Creel Program was run by the North Coast Skeena Stewardship Society and operated from June 1st to August 31st, 2018, with 10,734 recorded boat trips and a retained catch of 1,391 Pink salmon.

A creel survey of the freshwater recreational fisheries in the Skeena River watershed was not conducted in 2018.

A creel survey of the freshwater recreational fisheries in the Nass watershed was not conducted by Nisga'a Fish and Wildlife staff in 2018.

13.4.3.5.3 Commercial Fisheries

Allocations

Table 13.4-1: Commercial Allocation Implementation Plan for the 2015–2019 period

| Description | Areas | Seine A | Gill Net C | Troll F |
|--------------|--------------------------------------|---------|--------------------|---------|
| North | 1, 2E, 2W (even), 3 to 5, 101 to 105 | 75.5% | 22.5% ^a | 2.0% |

Notes on Pink allocations (north):

^a Skeena sharing 75% seine: 25% gillnet

Skeena-Nass Pink Fisheries

Fishing opportunities may be considered if stocks appear to be returning in sufficient abundance. Commercial harvest opportunities are dependent on run timing, but typically occur between mid-July and mid-August. The areas typically fished are outlined below and may be updated in-season.

Area A Seine

- **Area 3:** July 9 – First anticipated seine fishery opening will be determined in-season based on Sockeye and Pink abundance. Minimum bunt mesh size 70 mm (2.76 inches). Earlier fishery possible if stocks are abundant.
- **Areas 4 and 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.

Area C Gill Net

- **Area 3:** June 17 – First anticipated gill net fishery, but may vary depending on run size. Maximum mesh size is 137 mm (5.39 inches).
- **Areas 4 and 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.

Area F Troll

- **Area 3:** If abundances permit, a troll Pink fishery may be conducted. This fishery would be managed to minimize by-catch of Chum and gear conflicts with net fleets.

Fishery Monitoring and Catch Reporting

For 2019, the Department is continuing to work with Area Harvest Committees on catch monitoring programs in the following areas:

Area A Seine (PFMA 3 to 6):

- 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
- Independent verification of landed catch through a designated service provider
- Deployment of at-sea observers with priority placed on highest profile fisheries occurring concurrently

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
- Pilot of Super Sales Slip program by a portion of Area C licences during regular gill net fisheries is under consideration.

Additional details on the catch monitoring programs will be communicated via Fisheries Notices.

13.4.3.5.4 ESSR Fisheries

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 at the Kitwanga weir (Gitanyow First Nation) and Moricetown fishway (Wet'suwet'en First Nation)

13.4.4 CENTRAL COAST PINK SALMON

13.4.4.1 SNAPSHOT OVERVIEW AND MAP OF MANAGEMENT UNIT

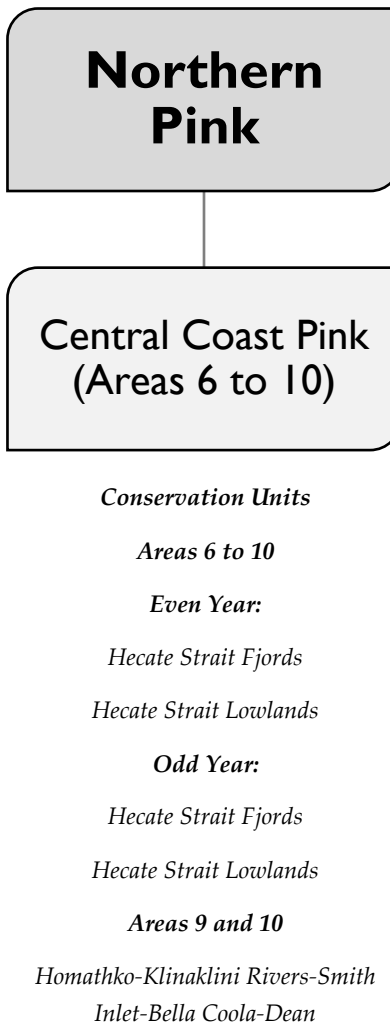


Figure 13.4-4: Conservation Units in the Central Coast Pink Salmon Management Unit

The Central Coast has more than 130 streams and rivers that support populations of Pink salmon. Central Coast streams support both odd and even year stocks with even year stocks usually being more abundant in Areas 7, 9 and 10 and in odd years in Areas 6 and 8. Both Area 6 and Area 8 can see extremely large returns of Pink salmon.

13.4.4.2 STOCK ASSESSMENT INFORMATION

13.4.4.2.1 Pre-season

There are no formal pre-season forecasts for Pinks in the Central Coast. Area 6 usually sees greater returns in odd years, while Areas 7 to 10 historically saw larger runs in even years. However, since flood events in 2010 the greater returns to Area 8 have been in odd years. Pink returns have been highly variable and expectations are highly uncertain.

The 2019 Salmon Outlook prediction for Central Coast Pinks is low to average for Area 6 based on the strength of the brood year. Low returns are expected in Area 7 and average to above average returns in Area 8. The odd-year Bella Coola / Atnarko stock exceeded escapement target in 2017, which may result in a large return in 2019. However, returns are known to be highly variable. Fishing opportunities in Areas 6 to 10 will be based on in-season indications of abundance.

13.4.4.2.2 In-season

Catch and spawning escapement data are used as indicators of stock abundance for Central Coast Pink stocks. Catch per unit effort in the commercial fishery is monitored as an indicator of overall Pink abundance, and can be used as an indicator as to whether or not escapement targets will be met. Each area contains key streams whose escapements are actively monitored in-season to determine run timing and size. This is accomplished by visual counts of fish in streams, either from the air or by walking the streams.

13.4.4.3 DECISION GUIDELINES AND MANAGEMENT ACTIONS

13.4.4.3.1 In-season Decisions

Where possible, openings in Areas 6 through 10 will be coordinated to distribute effort appropriately.

For Area 6, seine Pink fishing opportunities and opening dates are evaluated pre-season based on brood year escapements, run timing and any concurrent fisheries taking place in other areas. Seine fisheries will target Pink stocks returning to numerous streams near Gil Island with the Quaal and Kemano Rivers being the main producers in this area. Additional fishing opportunities are based on in-season assessments of commercial catch per unit effort (CPUE), with high CPUE's being indicative of a strong return. As the season progresses, the in-season indicator changes to the assessment of stream escapements to determine if further fishing opportunities are available.

For Areas 7 through 10, in-season decisions are made in consultation with local First Nations, the Central Coast First Nations Salmon Coordinating Committee and Central Coast Advisors for the management of fisheries in these areas.

Pink salmon are mainly caught as by-catch in Chum-directed fisheries in Area 7. In Area 8, Pink fisheries target mainly Atnarko River stocks but there is a component of Kwatna River and Koeve River Pinks that are fished. The Pink fishery on Kwatna stocks occurs at the same time as the Atnarko fishery, while Koeve Pinks are harvested during the latter part of August. There are no Pink-directed fisheries in Areas 9 or 10.

13.4.4.4 INCIDENTAL HARVEST, BY-CATCH AND CONSTRAINTS TO CENTRAL COAST PINK FISHERIES

Area 6:

- 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.
- Commercial net fishing is limited to daylight hours.
- Other management measures in effect include mandatory brailing for all seine sets and non- retention of Chinook, Coho and Steelhead in all fisheries and non-retention of Chum at the Gil Island seine fishery.

Area 7:

- Fishing will be limited to daylight hours.
- Net fisheries will begin with non-retention of Coho. Easing of restrictions in-season could occur if Coho abundance is high. In McLoughlin Bay and Kitsoo hatchery Chum targeted fisheries, Coho retention will likely be allowed due to the terminal nature of these fisheries and the hatchery origin of the stocks.
- Harvesting opportunities for Pink salmon will be coincidental to Chum-directed harvests.
- Seines are required to brail their catch and release Sockeye, Coho, Chinook and Steelhead. Gill nets are required to release Steelhead and Coho.

- 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 harvested.

Area 8:

- Fishing will be limited to daylight hours.
- Net fisheries will begin with non-retention of Coho. Easing of restrictions in-season could occur if Coho abundance is high.
- Seines are required to brail their catch and release Sockeye, Coho, Chinook and Steelhead. Gill nets are required to release Steelhead and Coho.
- 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.
- Between July 15 and August 15, weedlines are required for all gill nets in Subareas 8-5 north of Bold Point and 8-8 to reduce Steelhead interceptions.
- 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 harvested.

Areas 9 and 10:

- There are no Pink-directed fisheries in these areas.

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

13.4.4.5 ALLOCATION AND FISHING PLANS

First Nations Fisheries

Food Social and Ceremonial Fisheries

First Nations opportunities to harvest salmon for FSC 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 north coast First Nations are typically multi-species, and are issued on an annual basis. Licences may also be amended for shorter durations.

Actual opportunities and catches will be dependent on, among other factors; in-season stock strength, management measures taken to ensure conservation of individual stocks, community needs of First Nations, and alternative sources of salmon if preferred species are not available locally due to low abundance.

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Fishery Monitoring and Catch Reporting

The Strategic Framework for Fisheries Monitoring and Catch Reporting in the Pacific Fisheries is being applied in First Nations FSC fisheries across the region. Work towards this includes assessing current monitoring practices, programs and gaps. The First Nations Fishery Council (FNFC) and other area aggregate groups have assisted in engagement 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 Nations Band offices.

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 electronic 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 as a Microsoft Access program, the database 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. In 2010, work started on compiling all aspects of the approximate 34 current MS Access databases into one (1) VB style system that would be customizable for each Nations' needs. Work on the new system is ongoing.

For more information please contact Aleta Rushton at 250-230-1227.

Treaty Fisheries

There are no Treaty fisheries for Central Coast Pink salmon.

13.4.4.5.1 Recreational Fisheries

Recreational salmon fishing occurs in the tidal waters of the Central Coast (Areas 6 to 10). The Pink salmon fishery is open April 1st to March 31st, with the peak of the season being from June to August. Daily and total possession limits are in effect.

The minimum size limit for Pink salmon is 30 cm, in tidal waters and freshwater. The possession limit for salmon is twice the daily limit.

The Area 6 tidal water recreational salmon fishery begins in late April. Initial effort is mostly by local independent anglers out of Kitimat. One recreational fishing lodge and a number of charter operators also fish in Area 6 with the most significant portion of the recreational fishing season taking place between late May and mid-September.

In Area 7, the main recreational fishing activity takes place in Milbanke Sound off of St. Johns Harbour and in Seaforth Channel between St. Johns and Idol Point, by several recreational lodges and charter operators.

In Area 8, the main recreational fishing effort in tidal water is concentrated in the Hakai Pass area by guests of the recreational lodges in the area. There were four lodges operating in 2018.

In Area 9, a total of 6 lodges operated in Rivers Inlet during the 2018 season.

A condition of licence in the recreational Tidal Waters Sport Fishing Licence, applies to all angling in the Rivers Inlet Special Management Zone (SMZ), and reads as follows:

Area 9 Special Management Zone (SMZ). Any anglers fishing in this area should consult the Tidal Waters Sport Fishing Regulations prior to commencing fishing.

Recreational harvesting occurs in Area 10 with participation by independent anglers and charter operators.

The Central Coast non-tidal waters are in Regions 5B and 6 freshwater fishing areas, and there are openings for Pink salmon in the different watersheds at different time periods. The minimum size limit is 30 cm, with daily and total possession limits in effect.

In-season updates and fishery regulation changes can be found on the recreational fisheries website:

<http://www.bcsportfishing.ca>.

For direct notification of regulatory changes, individuals may sign up to have recreational fishery notices sent directly to their email at the website above. Refer to the link to subscribe to fishery notices on the right hand side of the page.

Fishery Monitoring and Catch Reporting

In Areas 6 to 9, DFO has been collecting recreational catch data through the Lodge Log Book Program. In Area 10, logbook information is used to provide catch and release numbers from anglers fishing in the area.

13.4.4.5.2 Commercial Fisheries

Allocations

Table 13.4-2: Commercial Allocation Implementation Plan for the 2015–2019 period

| Description | Areas | Seine A | Gill Net C | Troll F |
|----------------|---------|---------|-------------------|---------|
| Central | 6 to 10 | 95.0% | 5.0% ^b | * |

Notes on Pink allocations (north):

* by-catch provision

^b potential for future re-negotiation

Central Coast Pink Fisheries

Fishing opportunities may be considered if stocks appear to be returning in sufficient abundance. Commercial harvest opportunities are dependent on run timing, but typically occur

between mid-July and mid-August. The areas typically fished are outlined below and may be updated in-season.

Area 6

- **July 15:** First anticipated seine opening; areas open will be determined in-season. Minimum bunt mesh size 70mm. Catch rates in this fishery will be used as an indicator of returning abundances of Pink salmon to Area 6.

Area 7

- Harvest opportunities for Pink salmon will be incidental to Chum-directed fisheries for both seine and gillnets.

Area 8

- **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.

Areas 9 and 10

- No commercial harvesting of Pink salmon is anticipated in these areas in 2019.

Fishery Monitoring and Catch Reporting

Fishery Monitoring and Catch Reporting includes the following:

- Mandatory requirement to file fishing reports in all commercial fisheries, including “Start/Pause/Cancel/End” Fishing reports.
- Mandatory catch reporting by phone-in with a paper harvest log and electronic transmission with an electronic harvest log (E-log) in all commercial fisheries.

In addition, for any fisheries in Area 6 the following will be implemented as a part of the catch monitoring pilots (Area A Seine: PFMA 3 and 6; Area C Gill net: PFMA 3 to 5):

Area A Seine (PFMA 3 and 6):

- 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
- Independent verification of landed catch through a designated service provider
- Deployment of at-sea observers with priority placed on highest profile fisheries occurring concurrently

Additional details on the catch monitoring programs will be communicated via Fisheries Notices.

13.4.4.5.3 ESSR Fisheries

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 on the Kemano River or at Bish Creek (Haisla First Nation).

13.5 NORTHERN SOCKEYE SALMON FISHING PLAN

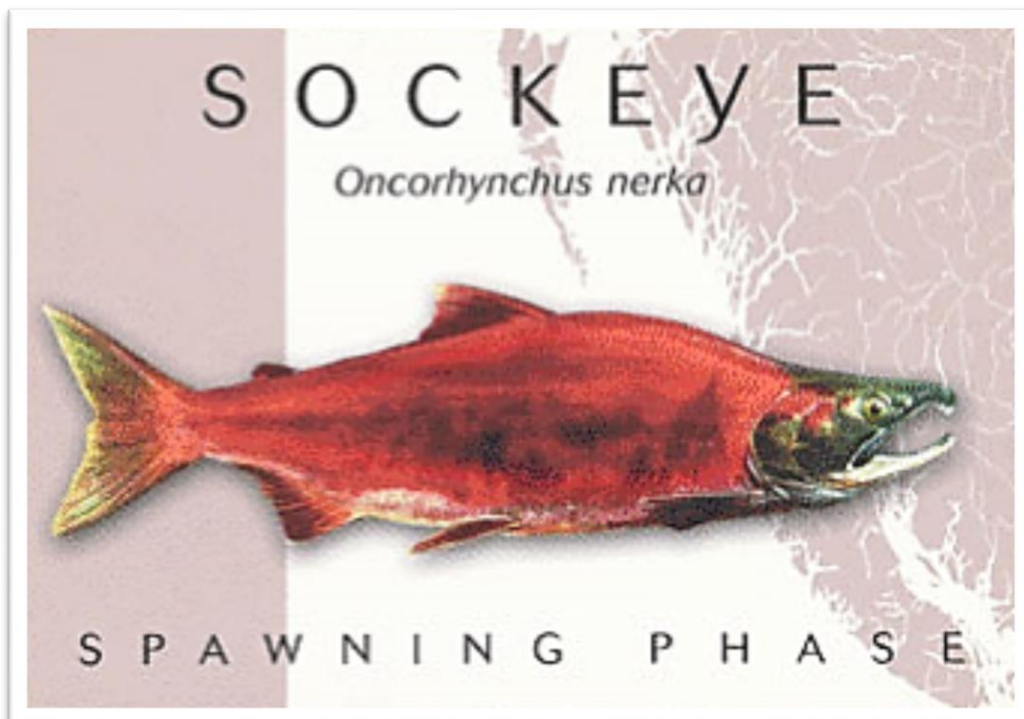
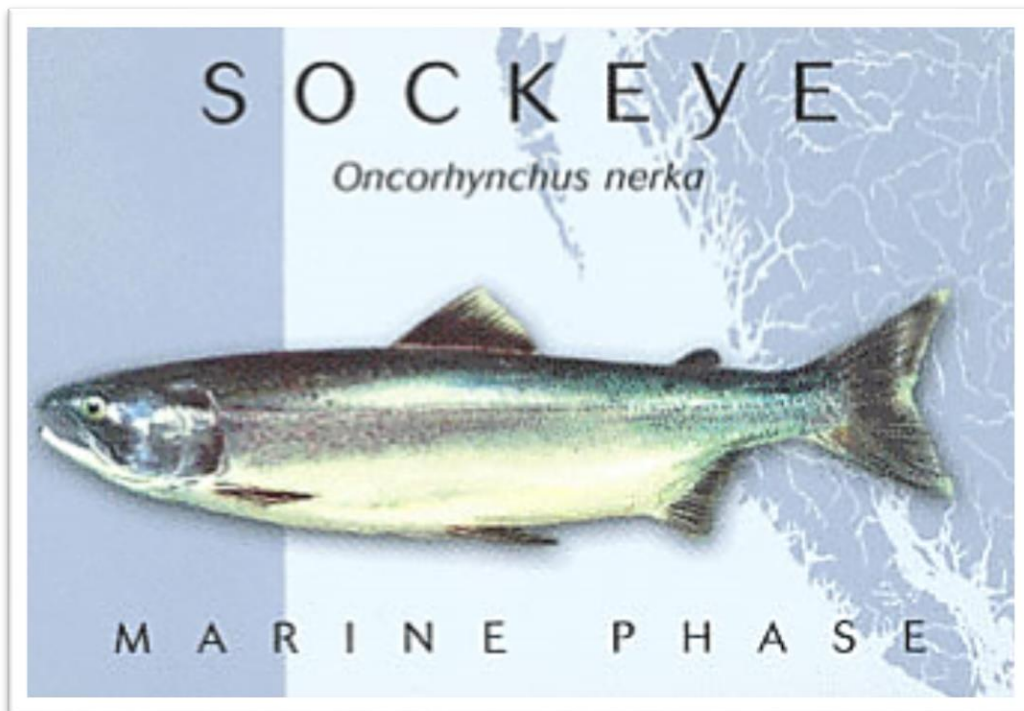


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13.5.1 NORTHERN SOCKEYE OVERVIEW

Major spawning runs of Sockeye salmon occur in the Skeena and Nass watersheds and historically in Rivers and Smith Inlets. Sockeye salmon are among the most economically and culturally important of Pacific salmon species.

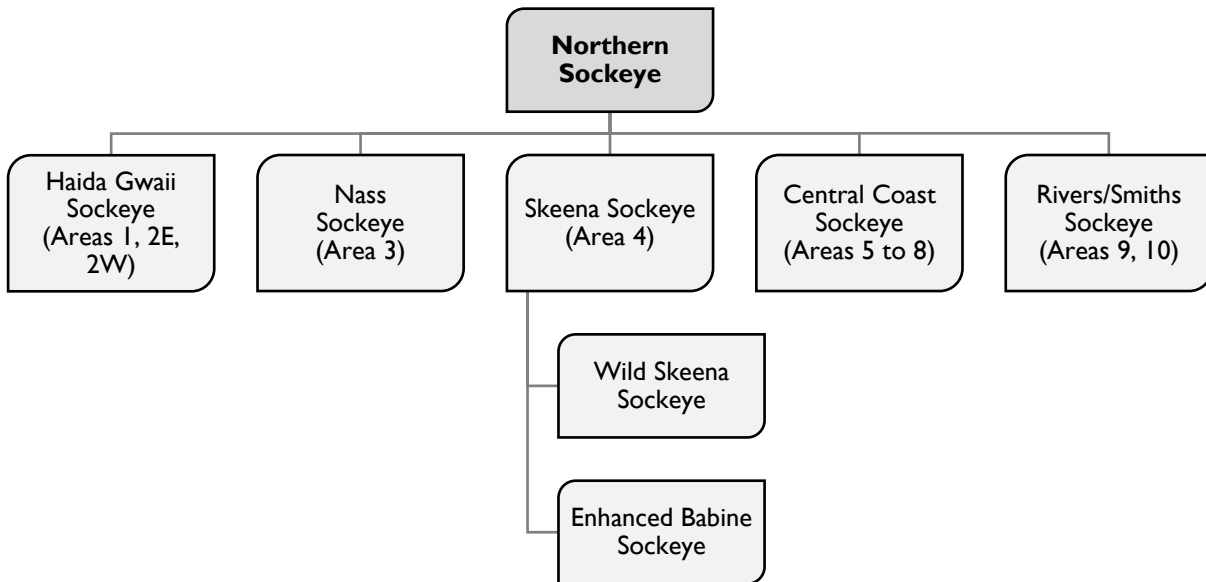


Figure 13.5-1: Overview of Northern Sockeye Salmon

13.5.1.1 NORTHERN SOCKEYE ENHANCEMENT INFORMATION

NORTHERN SOCKEYE ENHANCEMENT INFORMATION

The major BC North Coast DFO operation enhancement facilities that produce sockeye are:

- Fulton River project
- Pinkut Creek project
- Snootli Creek hatchery

The information available at the link below addresses production from major DFO Operations (OPS) facilities, contracted Community Economic Development Program hatcheries (CEDP), larger or more complex Public Involvement Projects (Designated Public Involvement or DPI) operated by volunteers, and Aboriginal Fisheries Strategy (AFS). 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.

There are two datasets available: **Post-Season Production** from the 2017 brood year (i.e. 2018 releases, and numbers on hand for 2019 release), and the **Production Plan**, which includes proposed targets for the upcoming 2019 brood year. These are available at the following website:

<http://www.pac.dfo-mpo.gc.ca/sep-pmvs/projects-projets/ifmp-pgip-eng.html>

13.5.2 HAIDA GWAI SCKEYE (AREAS I, 2W AND 2E)

13.5.2.1 SNAPSHOT OVERVIEW AND MAP OF MANAGEMENT UNIT

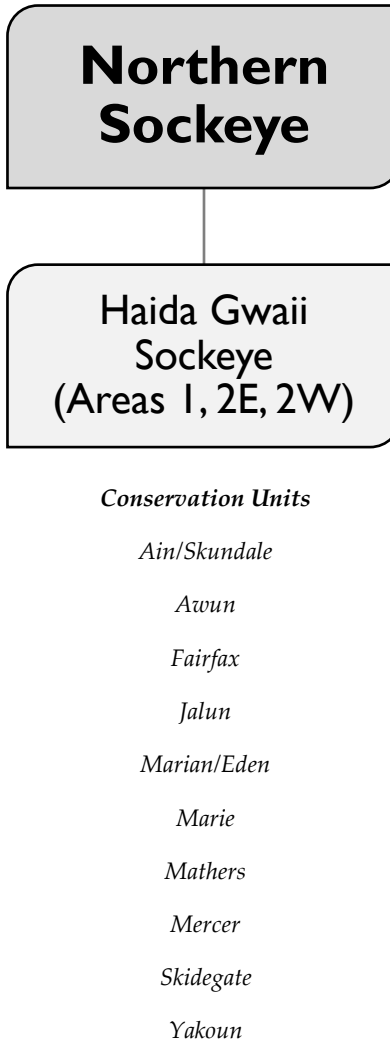


Figure 13.5-2: Overview of Haida Gwaii Sockeye

Sockeye returning to Haida Gwaii are relatively small stocks and are primarily harvested in targeted Haida food, social and ceremonial (FSC) fisheries

13.5.2.2 STOCK ASSESSMENT INFORMATION

13.5.2.2.1 Pre-season

There are no formal quantitative pre-season forecasts for Haida Gwaii Sockeye. The qualitative Salmon Outlook prediction is uncertain; most stocks are generally considered healthy with the exception of Sockeye returns to the Ain River.

13.5.2.2.2 In-season

The Haida Fisheries Program conducts the stock assessment of Haida Gwaii Sockeye to facilitate management of FSC fisheries. Sockeye returning to Skidegate Lake are visually enumerated at a floating fish fence at Copper Creek while the remainder of Sockeye stocks are typically enumerated using visual stream counts during spawning. The Haida Fisheries Program is developing an ARIS site (sonar based counter) on the lower Yakoun River, which is expected to be operational in the spring of 2019.

13.5.2.3 DECISION GUIDELINES AND MANAGEMENT ACTIONS

There are no commercial fisheries and very little recreational effort directed on Haida Gwaii Sockeye. The Haida Fisheries Program facilitates the management of the FSC harvest by conducting stock assessment, monitoring, FSC harvesting and develops FSC fishery management guidelines based on consultation with the Haida community.

13.5.2.4 INCIDENTAL HARVEST, BY-CATCH AND CONSTRAINTS TO HAIDA GWAI SOCKEYE FISHERIES

Haida Gwaii Sockeye are generally very early-timed and return from mid-May to late June. Sockeye are very small in size and do not contribute to any commercial net harvest as a target species or as by-catch, and are not subject to any known recreational harvest. Haida Gwaii Sockeye are mainly harvested in First Nations FSC fisheries.

The main producers of Sockeye harvested in the Area F troll fishery are the Skeena and Nass Rivers, and trollers at times intercept a small amount of these fish in Dixon Entrance as by-catch in their directed Fisheries on Coho, Pink and Chinook. Fisheries are managed to avoid the interception of 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.

13.5.2.5 ALLOCATION AND FISHING PLANS

13.5.2.5.1 First Nations Fisheries

Food Social and Ceremonial

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 the details of the FSC fishery including the dates, times, methods, locations of harvest. Communal licences for Northern Coastal First Nations are typically multi-species and are issued on an annual basis. Shorter duration amendments to licences are also issued on occasion.

Actual opportunities and catches will be dependent on, among other factors; in-season stock strength, management measures taken to ensure conservation of individual stocks, community needs of First Nations, and alternative sources of salmon if preferred species are not available locally due to low abundance.

Refer to Section 10.2 for Communal Licence Harvest Target Amount [Table 10.2-1](#) in Northern BC First Nations Fisheries.

First Nations Specific Conservation Measures

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

Fishery Monitoring and Catch Reporting

The Strategic Framework for Fisheries Monitoring and Catch Reporting in the Pacific Fisheries is being applied in First Nations FSC fisheries across the region. Work towards this includes assessing current monitoring practices, programs and gaps. The First Nations Fishery Council (FNFC) and other area aggregate groups have assisted in engagement 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 Nations Band offices.

Since 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 electronic 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 as a Microsoft Access program, the database 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. In 2010, work started on compiling all aspects of the approximate 34 current MS Access databases into one (1) VB style system that would be customizable for each Nations' needs. Work on the new system is ongoing.

For more information please contact Aleta Rushton at 250-230-1227.

Treaty Fisheries

There are currently no Treaty fisheries for Sockeye in Haida Gwaii.

13.5.2.5.2 Recreational Fisheries

Recreational salmon fishing occurs primarily in the tidal waters surrounding Haida Gwaii, with the majority of effort focused along the shoreline from Masset to Langara Island in Area 1 and between Englefield Bay and Port Louis in Area 2W. Recreational fishing occurs primarily between May and September with peak effort and catch occurring in July and August. Sockeye salmon are incidentally retained in the recreational fishery which primarily targets Chinook and Coho salmon. The daily aggregate limit of salmon is four (4) per day.

In-season updates and fishery regulation changes can be found on the recreational fisheries website:

<http://www.bcsportfishing.ca>.

For direct notification of regulatory changes, individuals may sign up to have recreational fishery notices sent directly to their email at the website above. Refer to the link to subscribe to fishery notices on the right hand side of the page.

Fishery Monitoring and Catch Reporting

DFO has been collecting recreational catch data through the Lodge Log Book Program and the Haida Creel Program since 1995. Participation in monitoring and reporting of recreational catch in Areas 1 and 2 has been excellent over the past 25 years. Monitoring is continuing to improve with region wide initiatives.

13.5.2.5.3 Commercial Fisheries

Allocation

| Description | Areas | Seine A | Gill Net C | Troll F |
|--------------------|-----------------------|---------|------------|---------|
| Skeena/Nass | 1, 3 to 5, 101 to 105 | 25% | 75% | * |

Notes on Sockeye allocation (north):

* by-catch provisions

Haida Gwaii Local Sockeye Fisheries

There are no commercial fisheries targeting Haida Gwaii Sockeye stocks, and incidental harvest by the Area F troll fishery is thought to be negligible.

Area A&C

There are no commercial net fisheries that target Haida Gwaii Sockeye salmon.

Area F Troll

Forecasted returns to the Nass and Skeena rivers are expected to support commercial net fisheries. Therefore, retention of Sockeye salmon will be permitted as by-catch in 2019. Troll fisheries will be managed to avoid migrating Fraser River sockeye. This includes prohibitions of Sockeye salmon retention West of 133 degrees West longitude as well as in-season closures should sockeye targeting be observed by Area F Troll.

Fishery Monitoring and Catch Reporting

Fishery Monitoring and Catch Reporting includes the following:

- Mandatory requirement to file fishing reports in all commercial fisheries, including “Start/Pause/Cancel/End” Fishing reports.
- Mandatory catch reporting by phone-in with a paper harvest log and electronic transmission with an electronic harvest log (E-log) in all commercial fisheries. (*Catch reporting requirements are specific to each licence group and are detailed in the conditions of licence for each gear type*).

13.5.2.5.4 ESSR Fisheries

There are currently no ESSR fisheries taking place for Haida Gwaii Sockeye.

13.5.3 NASS SOCKEYE

13.5.3.1 SNAPSHOT OVERVIEW AND MAP OF MANAGEMENT UNIT

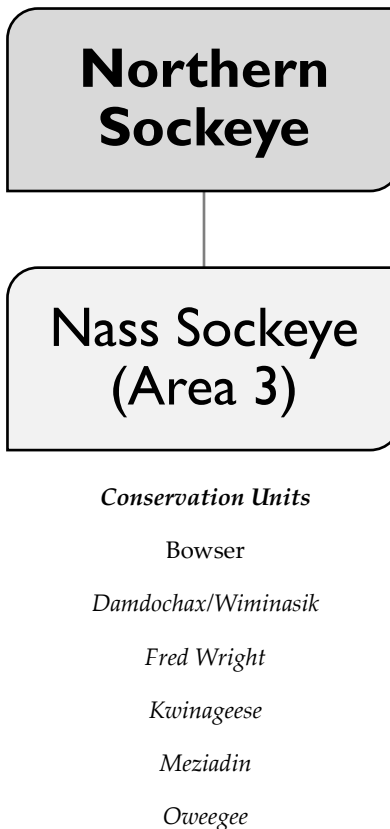


Figure 13.5-3: Overview of Nass Sockeye Salmon

There are 14 Sockeye streams in Area 3, of which all but two are tributaries to the Nass River. The major producers of lake-type Sockeye are Bowser, Damdochax, Kwinageese and Meziadin lakes, of which Meziadin Lake is the most significant and accounts for up to 75% of sockeye salmon production in the Nass watershed. Recent escapements to Meziadin have been below the target escapement. Kwinageese River sockeye returns were severely affected by a rockslide in 2009 that blocked access to spawning grounds. Sockeye salmon escapements have improved since 2011, when fish passage improvement measures were implemented by Nisga'a Fisheries, however Kwinageese sockeye are still considered to be in a rebuilding stage.

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

The northern Chatham Sound portion of Area 3 is managed in conjunction with the Skeena River fishery after the beginning of July due to the large numbers of Skeena Sockeye and Pink salmon passing through the area at that time.

13.5.3.2 STOCK ASSESSMENT INFORMATION

13.5.3.2.1 Pre-season

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

Seasonal management, assessment of Nass Area salmon stocks and minimum and production-based salmon escapement goals are discussed in the Nass Fisheries Operational Guidelines (FOG) which were developed to aid in the implementation of the Nisga'a Final Agreement. Additional information regarding the Nisga'a Fisheries Program can be found at:

<http://www.nisgaanation.ca/fisheries-management>

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

Opportunities for a gillnet 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.

Kwinageese Sockeye are a stock of concern and focused management planning is required to reduce impacts on this stock.

The Salmon Outlook qualitative forecast for Nass Sockeye is for below average returns.

2019 Pre-season Nass River Sockeye Run Size Forecast:

Nass River Sockeye returns are forecasted to be average to below average with an expected total return to Canada from 430,000 (75% probability) to 484,000 (25% probability) and a point estimate of 456,000(50% probability) based on a sibling-regression model. Nass Sockeye returns

will be carefully monitored to take into account increasing uncertainty and recent trends towards lower survival.

13.5.3.2.2 In-season

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;

13.5.3.3 DECISION GUIDELINES AND MANAGEMENT ACTIONS

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 Nisga'a Treaty, recreational and commercial harvest opportunities, both in marine and in-river fisheries. The escapement target for Meziadin Sockeye is 160,000. In years when Meziadin Sockeye escapement is expected to be below this target, management considerations to reduce impacts on this stock will influence decision-making for terminal commercial Sockeye harvests.

13.5.3.4 INCIDENTAL HARVEST, BY-CATCH AND CONSTRAINTS TO NASS RIVER FISHERIES

All Nass area net fisheries will normally be restricted to daylight hours.

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

Commercial marine constraints this year include:

- 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 to below 10%;

- Brailing and sorting, with the mandatory release of all Chinook will be in place for the seine fishery; gill net fisheries will be non-retention of Chinook;
- Non-retention of Coho will be in place initially but could revert to retention 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;

KWINAGEESE SOCKEYE BROOD RETURN STATUS, 2011 TO 2021

| KWINAGEESE SOCKEYE ESCAPEMENT | | | | | | | | | | | | | |
|-------------------------------|------|------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | YEAR | ESCAPEMENT | RETURN YEAR | | | | | | | | | | |
| | | | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| BROOD YEAR | 2006 | 2,700 | Age 5 | | | | | | | | | | |
| | 2007 | ? | Age 4 | Age 5 | | | | | | | | | |
| | 2008 | ? | | Age 4 | Age 5 | | | | | | | | |
| | 2009 | 107 | | | Age 4 | Age 5 | | | | | | | |
| | 2010 | 48 | | | | Age 4 | Age 5 | | | | | | |
| | 2011 | 10,273 | | | | | Age 4 | Age 5 | | | | | |
| | 2012 | 3,688 | | | | | | Age 4 | Age 5 | | | | |
| | 2013 | 397 | | | | | | | Age 4 | Age 5 | | | |
| | 2014 | 438 | | | | | | | | Age 4 | Age 5 | | |
| | 2015 | 7,044 | | | | | | | | | Age 4 | Age 5 | |
| | 2016 | 19,797 | | | | | | | | | | Age 4 | Age 5 |
| | 2017 | 7,240 | | | | | | | | | | | Age 4 |
| | 2018 | 290 | | | | | | | | | | | Age 4 |

Kwinageese sockeye returns for 2019 are expected to be low following extremely low brood year escapement in 2014, and modest escapement in 2015. Consequently, the Kwinageese closure for 2019 will be a one week closure. The management objective to reduce harvest impacts on Kwinageese Sockeye remains. 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 approximately July 9 to July 15 in all of Area 3.

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

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:

- Nets may be hung without a weed line (corkline to web distance 0 to 45 cm) to a maximum of 60 meshes deep.
- 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 0.76 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).

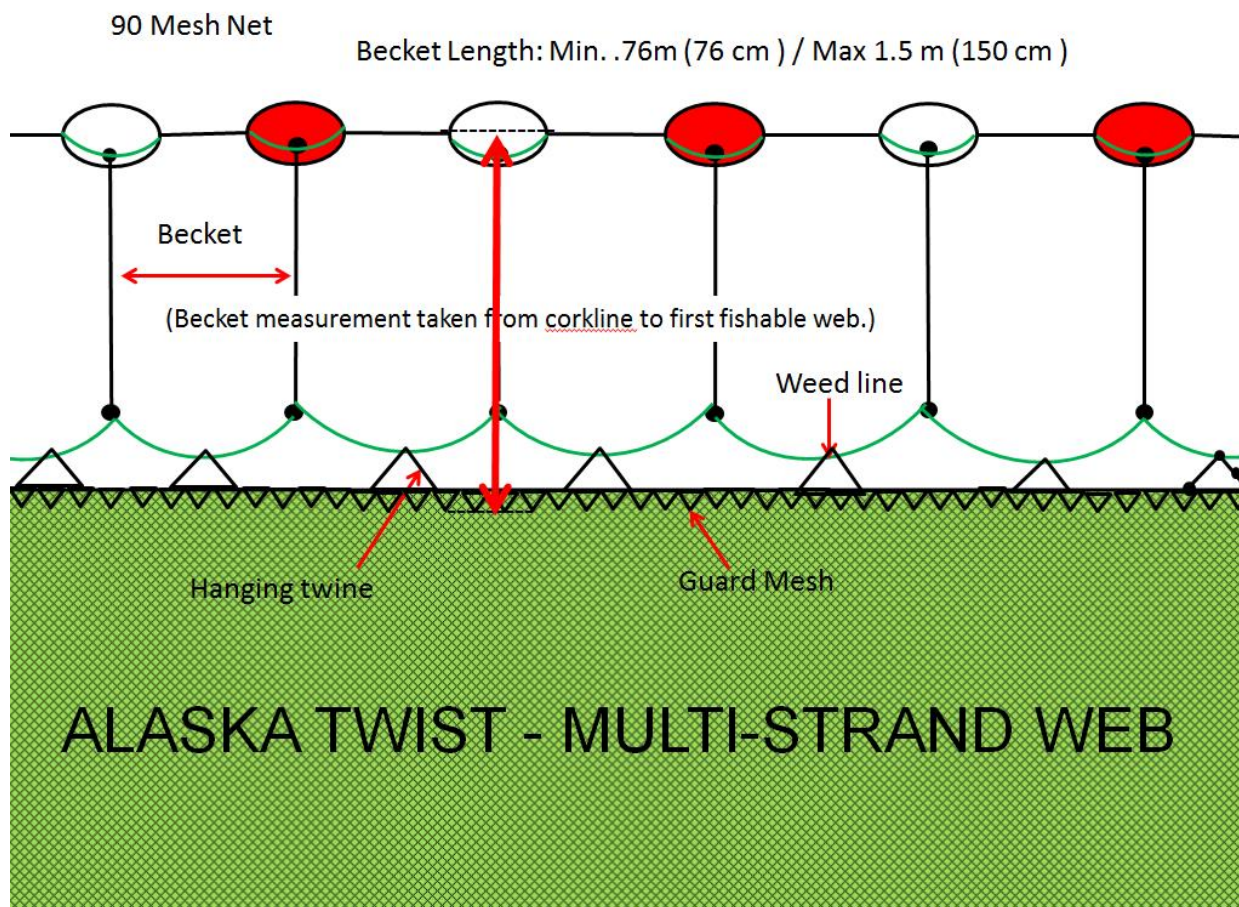


Figure 13.5-4: 90 Mesh Net Construction

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

13.5.3.5 ALLOCATION AND FISHING PLANS

13.5.3.5.1 First Nations Fisheries

Food Social and Ceremonial

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 the details of the FSC fishery including the dates, times, methods, locations of harvest. Communal licences for Northern Coastal First

Nations are typically multi-species and are issued on an annual basis. Shorter duration amendments to licences are also issued on occasion.

Actual opportunities and catches will be dependent on, among other factors; in-season stock strength, management measures taken to ensure conservation of individual stocks, community needs of First Nations, and alternative sources of salmon if preferred species are not available locally due to low abundance.

Refer to Section 10.2 for Communal Licence Harvest Target Amount [Table 10.2-1](#) in Northern BC First Nations Fisheries.

First Nations Specific Conservation Measures

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

Fishery Monitoring and Catch Reporting

The Strategic Framework for Fisheries Monitoring and Catch Reporting in the Pacific Fisheries is being applied in First Nations FSC fisheries across the region. Work towards this includes assessing current monitoring practices, programs and gaps. The First Nations Fishery Council (FNFC) and other area aggregate groups have assisted in engagement 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 Nations Band offices.

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 electronic 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 as a Microsoft Access program, the database 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. In 2010, work started on compiling all aspects of the approximate 34

current MS Access databases into one (1) VB style system that would be customizable for each Nations' needs. Work on the new system is ongoing.

For more information please contact Aleta Rushton at 250-230-1227

Treaty Fisheries

Nisga'a Fisheries

The Nisga'a Annual Fishing Plan (NAFP) is developed by the Nisga'a-Canada-BC Joint Fisheries Management Committee (JFMC) and governed by the terms of the Nisga'a Final Agreement and the Nisga'a Harvest Agreement of the Nisga'a Treaty. The Nisga'a Harvest Agreement includes Nisga'a fish allocations expressed as a percentage of the adjusted total allowable catch of Sockeye and Pink salmon. The NAFP is developed in accordance with Chapter 8 of the Nisga'a Final Agreement. Once approved by the Federal Minister of Fisheries, the Nisga'a 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 salmon, as defined in the Nisga'a Harvest Agreement, are set out as a percentage of the Canadian Total Allowable Catch for Nass Area stocks, 13% for Nass Sockeye and 15% for Nass Pink). Nisga'a Harvest Agreement fisheries have the same priority in fisheries management decisions as other commercial and recreational fisheries that target Nass Area salmon stocks. Other Nisga'a salmon allocations, as defined in the Nisga'a Treaty, are set out as a percentage of the Total Return to Canada (TRTC) up to maximum catch thresholds (63,000 Sockeye [10.5%], 6,300 Pink [0.6%], 12,600 Chinook [21%], 19,200 Coho [8%], and 12,000 Chum [8%]) in large return years. These other Nisga'a salmon allocations have the same priority in fisheries management decisions as domestic [food, social and ceremonial (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 provided to other Nass Watershed First Nations and 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 2019 are:

Nass Sockeye: The Total Run size probability point estimate for 2019 from a pre-season sibling-regression model ($r^2=0.68$) is 620,000 (50%) with a range in point estimates between 584,000 (75%) and 658,000 (25%). Assuming a 26% Alaskan exploitation rate (based on the average of run reconstructed odd-years from 1999 to 2017, approximately 164,000 Nass Sockeye), the 50%

probability point estimate for the Total Return to Canada (TRTC) of Nass Sockeye is **456,000** with a range of point estimates from 430,000 (75% probability) to 484,000 (25% probability). The forecast method's mean absolute accuracy for predicting TRTC returns was 83.7% (range: 62–98%) for 2003 to 2018 returns. Based on the pre-season TRTC forecasts and the minimum escapement goal (200,000) for 2019, the Nisga'a allocation ranges between 69,000 and 81,000. The mean TRTC estimate (456,000) will be used for calculating the initial target for the in-season Nisga'a allocation (75,000).

13.5.3.5.2 Recreational Fisheries

Recreational salmon fishing occurs in the tidal waters adjacent to the Nass River, with the peak of the season being from June to August. Daily and total possession limits for Sockeye in Area 3 are in effect and the open time is April 1st to March 31st.

The minimum size limit for Sockeye salmon is 30 cm, in tidal waters and freshwater. The possession limit for salmon is twice the daily limit.

The Nass River and tributaries are in Region 6 freshwater fishing area and a Sockeye opening occurs in Meziadin Lake and the Nass mainstem from July to September. The minimum size limit is 30 cm, and daily and total possession limits are in effect.

It has been recommended that a trigger for the recreational fishery in Meziadin Lake be established in response to recent poor returns of Meziadin Sockeye. Discussions regarding triggers and associated management measures are ongoing and a plan will be developed for the 2020 fishing season.

In-season updates and fishery regulation changes can be found on the recreational fisheries website:

<http://www.bcsportfishing.ca>.

For direct notification of regulatory changes, individuals may sign up to have recreational fishery notices sent directly to their email at the website above. Refer to the link to subscribe to fishery notices on the right hand side of the page.

Fishery Monitoring and Catch Reporting

The Area 3 and 4 creel program was operated by the North Coast Skeena First Nations Stewardship Society and ran from June 1 to August 31, 2018 with a total count of 10,734 boat trips and a retained catch of 32 Sockeye.

A creel survey of the freshwater recreational fisheries in four river systems of the Nass watershed was not conducted in 2018. The mean average in-river recreational catch of Nass Sockeye from 2000-2015 is 540 fish.

13.5.3.5.3 Commercial Fisheries

Allocation and Fishing Plans

| Description | Areas | Seine A | Gill Net C | Troll F |
|--------------------|-----------------------|---------|------------|---------|
| Skeena/Nass | 1, 3 to 5, 101 to 105 | 25% | 75% | * |

Notes on Sockeye allocation (north):

* by-catch provisions

Nass Fisheries

Opportunities for targeted Nass Sockeye fisheries will be determined based upon in-season assessment and abundance of Nass River Sockeye stocks. Fishing opportunities will also be subject to achieving fisheries management objectives for constraining stocks and species of concern (e.g. Kwinageese Sockeye, Nass Chinook, Nass Chum) in areas where they are present. In 2019, Nass River Sockeye returns are expected to be below average with a one-week Kwinageese gillnet closure/seine non-retention of Sockeye period. Later-timed fisheries will be avoided in order to minimize interactions with wild Nass Chum stocks of concern. Additional management considerations to address concerns for Nass Coho may be required.

Anticipated Net Opening Dates:

Area C Gill Net

June 17: First anticipated gill net fishery, but may vary depending on run size. Maximum mesh size is 137 mm (5.39 in). This fishery will assess the returning Nass River Sockeye run strength.

Area A Seine

July 9: 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 are abundant.

Fishery Monitoring and Catch Reporting

For 2019, the Department is continuing to work with Area Harvest Committees on catch monitoring programs in the following areas:

Area A Seine (PFMA 3 to 6):

- 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
- Independent verification of landed catch through a designated service provider
- Deployment of at-sea observers with priority placed on highest profile fisheries occurring concurrently

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
- Pilot of Super Sales Slip program by a portion of Area C licences during regular gill net fisheries.

Additional details on the catch monitoring programs will be communicated via Fisheries Notices.

Nass Sockeye Inland Demonstration Fisheries

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. 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 the same harvest decision guidelines as the marine commercial fishery. Further discussion is required to develop and appropriate in-season trigger to commence the inland demonstration fisheries.

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, by gear type in the Management Area 3 commercial fishery, and the weekly in-season forecast for aggregate Sockeye returns to the Nass system. 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 107 Area A seine licences and 626 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 selective methods that have been developed during the 1990s pilot sales fisheries. These could include beach seine, dip net, and fishwheels. Sockeye (and possibly Pink and Coho when abundance permits) 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 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 Nations 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 Jen Gordon at 250-627-3421.

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. This process may be updated to be consistent with licence issuance through the National Online Licensing System. 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. Licences transferred inland may be used simultaneously in other inland watershed demonstration fisheries as approved by DFO.

It is anticipated that the Nisga'a Lisims Government and Gitanyow First Nations demonstration fishery proposals under the Commercial Salmon Allocation Framework process will be considered in 2019. See [Appendix 6](#) for more details.

13.5.3.5.4 ESSR Fisheries

Historically, ESSR fisheries for Sockeye have taken place in Meziadin Lake for the Gitanyow and Nisga'a First Nations. No ESSR fisheries are expected for 2019

13.5.4 SKEENA SOCKEYE

13.5.4.1 SNAPSHOT OVERVIEW AND MAP OF MANAGEMENT UNIT

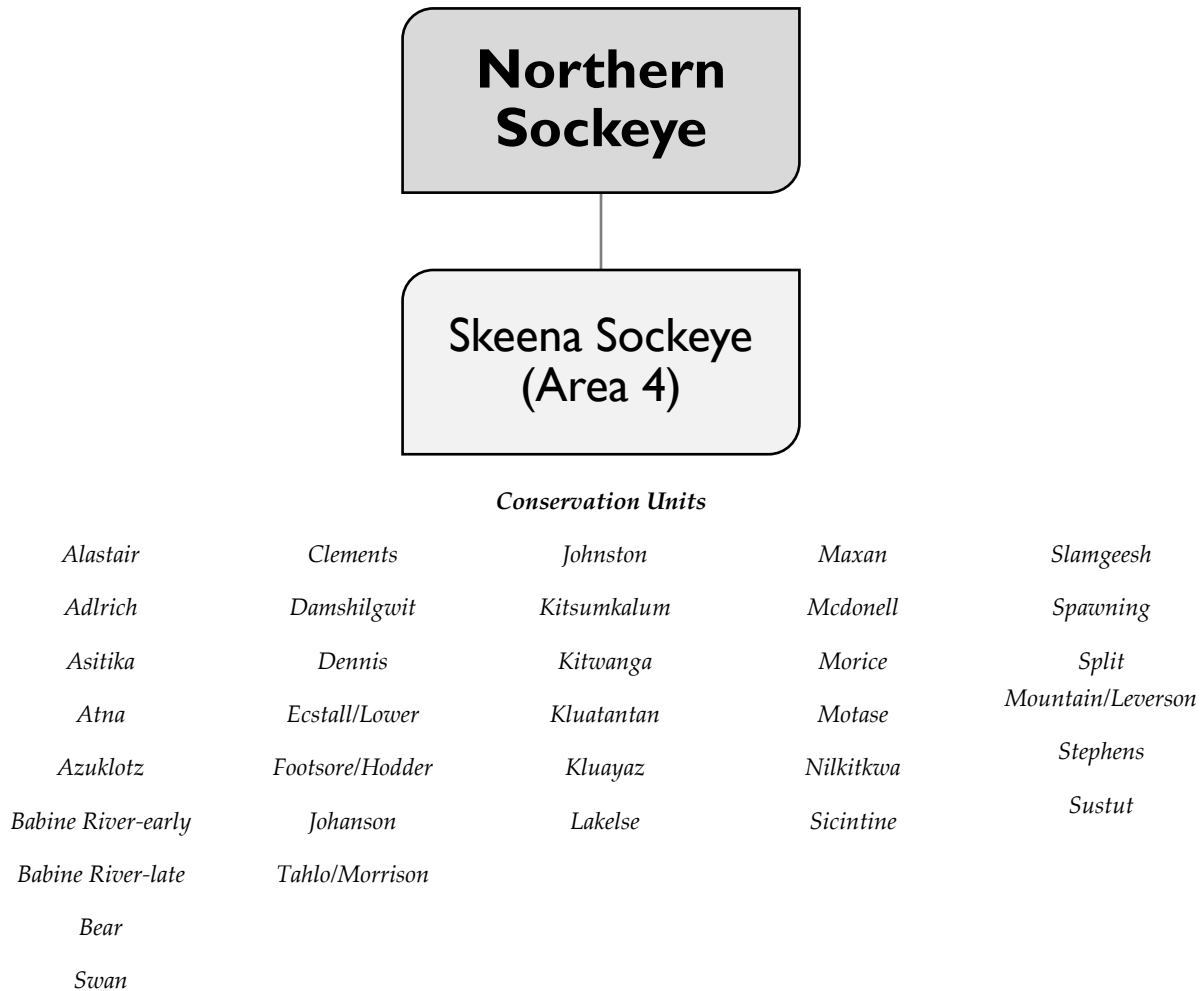


Figure 13.5-5: Overview of Skeena Sockeye Salmon

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 Babine Lake tributary spawning channels at Fulton River and Pinkut Creek.

Sockeye from various streams and lake systems migrate up the Skeena from June through August. 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. While there are a number of wild stocks of concern, current IFMP discussions have concentrated on three wild Sockeye stocks, 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 Chinook, 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 Sockeye returns are harvested in Areas 3, 4 and 5.

13.5.4.2 STOCK ASSESSMENT INFORMATION

13.5.4.2.1 Pre-season

The aggregate escapement target for Skeena Sockeye is currently under review. The current interim minimum escapement goal, of 400,000 is based on the lowest observed escapement from which Skeena Sockeye recovered after a landslide in 1950 that blocked fish passage into Babine River. This aggregate escapement goal does not account for the higher proportion of enhanced Babine Sockeye in the aggregate return since the inception of the Fulton and Pinkut spawning channels.

The Skeena First Nations Technical Committee (SFNTC) has provided advice to guide management of First Nations FSC fisheries in the Skeena beginning in 2017, and SFNTC has recommended that the FSC management trigger be increased from the minimum escapement goal of 400,000 to 600,000. This recommendation is supported by the North Coast Stock Assessment Division as an interim measure to increase the likelihood of attaining the minimum escapement goal for the aggregate of wild Skeena Sockeye. This action is required to meet the combined interim lower biological benchmark of 240,000 (40% Smsy) for wild Skeena Sockeye stocks. As a part of recent updates to Chapter 2 of the Pacific Salmon Treaty, an analysis of all Skeena and Nass Sockeye salmon CU's will be completed and may result in an updated aggregate escapement goal for Skeena River Sockeye. This updated information is scheduled to be completed by 2024.

The qualitative Salmon Outlook for wild Skeena Sockeye is "low" based on the strength of the brood years that went to sea in 2016 and 2017 respectively and the moderate returns of age 4 Sockeye in 2018. The Outlook for enhanced Babine Sockeye is low to modest based on the strength of sibling returns in 2018.

Pre-season Skeena River Sockeye Run Size Forecast:

The total Skeena Sockeye return is expected to be low to modest with a pre-season return forecast from 0.77 million (90% probability) to 3.8 million (10% probability) and a point estimate of 1.7 million (50% probability) based on the sibling model.

13.5.4.2.2 In-season Assessment

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. These in-season estimates are made possible due to the Babine fence operations that allow for in-season calibration of the Tyee Test fishery for Sockeye. 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.

13.5.4.3 DECISION GUIDELINES AND MANAGEMENT ACTIONS

Historically, an 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.

For 2019, it is anticipated that there will be sufficient Skeena Sockeye to meet Skeena First Nations FSC needs. However, the Department will continue to support the management recommendations developed by the Skeena First Nations Technical Committee and supported by individual Skeena First Nations regarding Skeena Sockeye:

The FSC management trigger level for First Nations Section 35 (1) Sockeye fisheries will be increased from 400,000 to 600,000;

The Skeena First Nations Technical Committee has also recommended that First Nations not engage in sockeye directed fisheries until in-season information shows returns are greater than 625,000 sockeye.

Individual Skeena First Nations FSC harvest plans will continue to be developed and refined based on in-season salmon return information including limited FSC opportunities in marine areas.

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

- If the pre-season forecast or the Skeena Sockeye return to Canada is greater than 1.05 million, then commercial fishery openings are planned.
- If the pre-season run size forecast is below 1.05 million, commercial 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.

The allowable Canadian commercial exploitation rate on the Skeena Sockeye aggregate increases as the return to Canada increases. The allowable commercial exploitation rate will be 0% for returns to Canada less than 1,050,000. The allowable exploitation rate will increase linearly from 0% at 1,050,000 to 20% at a run size of 2.0 million, 30% at 3.0 million, and up to a maximum of 40% at a return of 4.0 million or greater. See [Figure 13.5-6](#).

DFO may reserve Sockeye allocation for seine vessels to account for Sockeye by-catch during a directed Pink fishery.

Directed fisheries for Skeena Sockeye after August 1 will be constrained by Sockeye and Chum salmon stocks of concern. While the aggregate harvest rate schedule shown in [Figure 13.5-6](#) guides the overall commercial exploitation rate, other important considerations include protecting and rebuilding identified stocks and species of concern, incorporating concerns expressed by First Nations and stakeholders and impacts of other fisheries in setting weekly harvest rates. These additional considerations will guide weekly harvest rates in late July and early August.

SKEENA SOCKEYE

Commercial Mixed-Stock Fishery Abundance-Based Management Plan

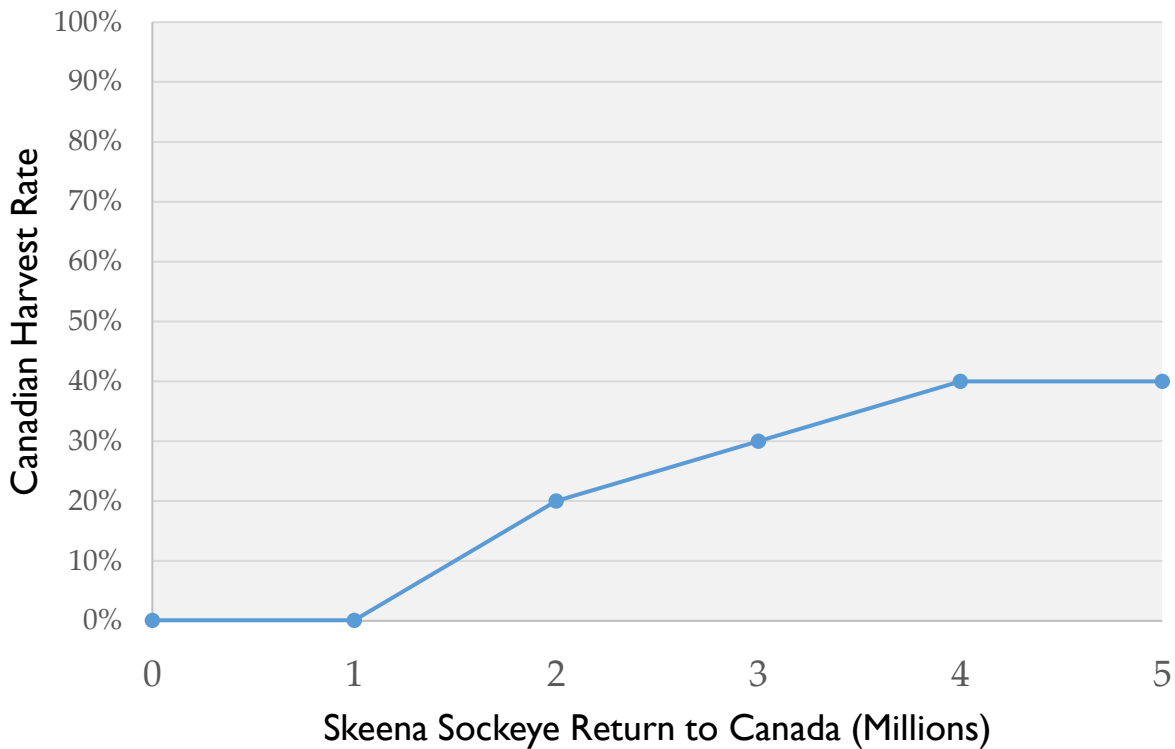


Figure 13.5-6: The allowable abundance based Canadian commercial harvest rate on Skeena Sockeye. This includes gillnet, seine and inland demonstration fisheries.

13.5.4.4 INCIDENTAL HARVEST, BY-CATCH AND CONSTRAINTS TO SKEENA SOCKEYE FISHERIES

- Weaker runs of wild Sockeye salmon co-migrate with strong Sockeye stocks are, as well as stocks of all Pacific salmon species.
- Fishing is limited to daylight hours except during directed Chinook gillnet fisheries when mesh size and run timing are used to target Chinook only.
- There is 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.

- 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 Nation and other interests).
- Measures are required to reduce harvest impacts on Skeena River Coho, Chinook, Chum, Steelhead and some Sockeye stocks. Retention of Coho, Chinook, Chum and Steelhead is prohibited in all net fisheries.
- 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 that these management measures will be in place for an extended period.
- Brailing and sorting with mandatory release of Chinook will be in place for the seine fishery.
- Gill net Sockeye fisheries will be mandatory non-retention for Chinook and Coho. Additional restrictions to reduce impacts on these species may be necessary.
- 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. Measures taken could include non-retention of some species, gear and fishing modifications and specific timing closures or Sockeye harvest rate reductions when weak stocks are present.
- In years of average run timing, the fishery will be managed to avoid high amounts of commercial harvest effort in late July and early August. Selective fishery 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.
- Any fisheries on or after August 1 will be short-net, short-set gill net fisheries to reduce impact on Steelhead 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 time 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 judgment 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.

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.

Gill net 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

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:

- Nets may be hung without a weed line (corkline to web distance 0 to 45 cm) to a maximum of 60 meshes deep.
- 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 0.76 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).

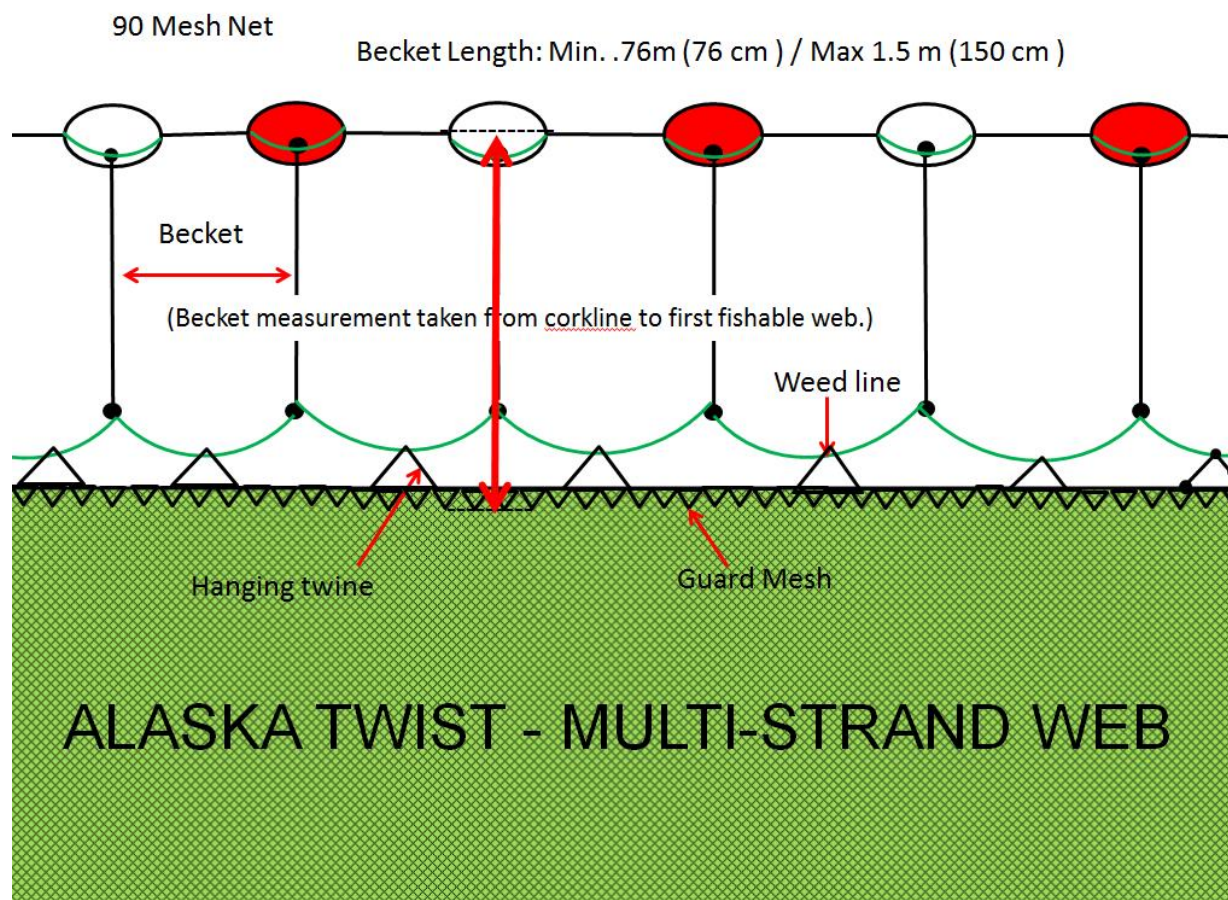


Figure 13.5-7: 90 Mesh Net Construction

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.

13.5.4.5 ALLOCATION AND FISHING PLANS

13.5.4.5.1 First Nations Fisheries

Food Social and Ceremonial

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 the details of the FSC fishery including the dates, times, methods, locations of harvest. Communal licences for Northern Coastal First Nations are typically multi-species and are issued on an annual basis. Shorter duration amendments to licences are also issued on occasion.

Actual opportunities and catches will be dependent on, among other factors; in-season stock strength, management measures taken to ensure conservation of individual stocks, community needs of First Nations, and alternative sources of salmon if preferred species are not available locally due to low abundance.

Refer to Section 10.2 for Communal Licence Harvest Target Amount [Table 10.2-1](#) in Northern BC First Nations Fisheries.

First Nations Specific Conservation Measures

When a conservation concern has been identified for an individual stock that is harvested by First Nations, consultations will be undertaken to adapt the fishing plan to provide the necessary protection to the weak stock. Fishery Monitoring and Catch Reporting

The Strategic Framework for Fisheries Monitoring and Catch Reporting in the Pacific Fisheries (see Section [Error! Reference source not found.](#)) is being applied in First Nations FSC fisheries across the region. Work towards this includes assessing current monitoring practices, programs and gaps. The First Nations Fishery Council (FNFC) and other area aggregate groups have assisted in engagement 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 Nations Band offices.

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 electronic 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 as a Microsoft Access program, the database 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. In 2010, work started on compiling all aspects of the approximate 34 current MS Access databases into one (1) VB style system that would be customizable for each Nations' needs. Work on the new system is ongoing.

For more information please contact Aleta Rushton at 250-230-1227.

Treaty Fisheries

There are currently no Treaty fisheries for Skeena Sockeye.

13.5.4.5.2 Recreational Fisheries

Recreational salmon fishing occurs in the tidal waters adjacent to the Skeena River, with the peak of the season being from June to August. The daily limit for Sockeye in Areas 3 to 5 is four (4) per day, unless otherwise varied, and open time is April 1 to March 31.

The minimum size limit for Sockeye salmon is 30 cm, in tidal waters and freshwater. The possession limit for salmon is twice the daily limit.

The Skeena River and tributaries are in Region 6 freshwater fishing area, and there are openings for Skeena Sockeye in Babine River and Lake, Pinkut Creek, Fulton River, and the Skeena mainstem.

The daily limits for Skeena Sockeye in non-tidal waters, are set by the guidelines for management actions table below.

Table 13.5-1: Guidelines for Management Actions for Recreational Sockeye Fisheries in the Skeena Watershed

| Estimated Abundance | Daily Limits | | |
|--|-----------------|--------------|-------------|
| | Skeena Mainstem | Babine River | Babine Lake |
| Less than 0.8 million past Tyee | 0 | 0 | 0 |

| Estimated Abundance | Daily Limits | | |
|---|--------------|-----|-----|
| 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 2019 season, the daily limit for Sockeye will be 2 per day from the start of the season based on the pre-season forecast. In years of high abundance, the daily limit in Babine River will remain at 2 per 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, the recreational Sockeye limits in Babine Lake will be increased to 4 per day.

In-season updates and fishery regulation changes can be found on the recreational fisheries website:

<http://www.bcsportfishing.ca>.

For direct notification of regulatory changes, individuals may sign up to have recreational fishery notices sent directly to their email at the website above. Refer to the link to subscribe to fishery notices on the right hand side of the page.

Fishery Monitoring and Catch Reporting

The Area 3 and 4 Creel Program was conducted by the North Coast Skeena First Nations Stewardship Society and operated from June 1 to August 31, 2018 with 10,734 boat trips recorded and a retained catch of 32 Sockeye.

A creel survey of the freshwater recreational fisheries in the Skeena River watershed was not conducted in 2018.

13.5.4.5.3 Commercial Fisheries

Allocation

| Description | Areas | Seine A | Gill Net C | Troll F |
|--------------------|-----------------------|---------|------------|---------|
| Skeena/Nass | 1, 3 to 5, 101 to 105 | 25% | 75% | * |

* by-catch provisions

Skeena Fisheries

Commercial Sockeye fisheries will take place in Management Area 4 when the predicted return to Canada is greater than 1,050,000. Allowable exploitation rates for returns greater than 1,050,000, will be determined based on the abundance based exploitation rates showing in the Skeena Sockeye harvest rate table above.

For 2019 Skeena River Sockeye, returns are expected to be below average (range from approximately 1.06 million to 3.27 million). Fisheries will be informed by in-season assessments of actual Sockeye returns.

The 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 is 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. The Sockeye fishery will be managed to an equal share of a weekly quota for Sockeye salmon for each of the registered 107 seine licences (0.93457% for each license). The opening times and quota will be posted weekly by fishery notice on the Department's web-site. ITQ management for the Sockeye fishery may not apply to Pink-directed seine fisheries that may occur in August. Any Sockeye harvested in a Pink-directed commercial fishery will still be subject to the Sockeye abundance-based management rules.

For the Sockeye ITQ seine fishery, the area will usually open for 5 days per week. 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 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 Jen Gordon (Jennifer.Gordon@dfo-mpo.gc.ca) or Corey Martens (Corey.Martens@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 after the TAC has been set for the given management week and vessels 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 any given management 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 DFO issued confirmation number of the quota transaction prior to fishing. As per the conditions of licence, quota reallocations will be permitted up to 48 hours after the fishery closes. Failure to reconcile quota within 48 hours of the fishery closure is a violation of the conditions of licence and will be forwarded on to DFO C&P for investigation.

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, Port Edward or Lax Kw'alaams. 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 of 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 participate in the 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 will be announced in-season.

Anticipated Net Opening Dates

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.

Fishery Monitoring and Catch Reporting

For 2019, the Department is continuing to work with Area Harvest Committees on catch monitoring programs in the following areas:

Area A Seine (PFMA 3 to 6):

- 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
- Independent verification of landed catch through a designated service provider
- Deployment of at-sea observers with priority placed on highest profile fisheries occurring concurrently

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
- Pilot of Super Sales Slip program by a portion of Area C licences during regular gill net fisheries.

Additional details on the catch monitoring programs will be communicated via Fisheries Notices.

Skeena Sockeye Inland Demonstration Fisheries

It is anticipated that there will be opportunities for Skeena River First Nations for inland demonstration fisheries on Skeena River in 2019. In years of high abundance, commercial allocations of Sockeye and Pink salmon have been 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 decision rule ceiling.

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.

The inland demonstration fisheries will only take place if the Skeena Sockeye run returns in sufficient strength to trigger a commercial fishery. 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 626 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 107 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 will not be permitted. 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 Nations 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 Jen Gordon at (250) 627-3421.

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. This process may be updated to be consistent with licence issuance through the National Online Licensing System. 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.

Licences may be used simultaneously in other inland watershed demonstration fisheries (e.g. Nass) as approved by DFO.

13.5.4.5.4 ESSR Fisheries

All ESSR fisheries are opportunistic and are not guaranteed from year to year. Harvests will be terminal in location and conducted by selective means, with live release of all non-target species.

The Lake Babine Nation has conducted ESSR fisheries in recent years in Babine Lake, targeting excess returns of enhanced Sockeye to the Pinkut and/or Fulton spawning channels. A fishing plan for this fishery has been developed and is reviewed on an annual basis.

Harvest amounts are calculated in-season and along with harvest timing will be determined in close liaison with Pinkut Creek and Fulton River spawning channel managers and Lake Babine Nation Fisheries to ensure enough Sockeye are available to meet the annual loading requirements for the Pinkut and Fulton systems.

13.5.5 CENTRAL COAST SOCKEYE

13.5.5.1 SNAPSHOT OVERVIEW AND MAP OF MANAGEMENT UNIT

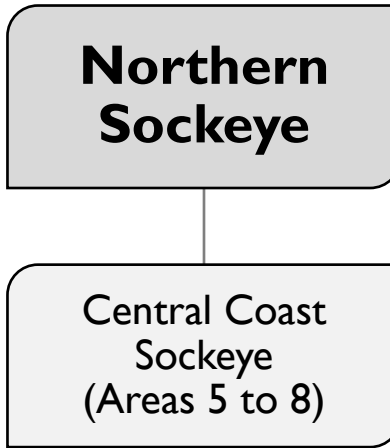


Figure 13.5-8: Overview of Central Coast Sockeye

The Central Coast MU is comprised of a number of small Sockeye stocks from Areas 5 through 8. Portions of Area 5 are traditionally managed in conjunction with Area 4 to target Skeena Sockeye and harvest opportunities may occur until mid- August when local Pink stocks become abundant. There are a number of Sockeye streams in Area 5 that may have small surpluses that have provided for some FSC harvest by local First Nations. Sockeye stocks in Areas 6, 7 and 8 have been weak in recent years and measures are in place to avoid interception of these stocks during commercial fisheries.

13.5.5.2 STOCK ASSESSMENT INFORMATION

13.5.5.2.1 Pre-season

There is no formal pre-season forecast done for Central Coast Sockeye.

Sockeye stocks in Areas 6 through 8 continue to be uncertain and measures will be implemented to avoid interception of these fish.

As noted above, commercial Sockeye opportunities in portions of Area 5 will be managed in conjunction with Area 4. These portions include sub-areas 5-1, 5-2, 5-3, 5-10, and a portion of 5-13.

The qualitative Salmon Outlook for Central Coast Sockeye is variable. Area 5 and 6 stocks are “uncertain” with some indications of improved escapements during the most recent cycle and some indications of extremely poor returns in portions of Area 6. Area 7 and 8 Sockeye returns

are expected to be “below average” based on very low brood year escapements and continuing poor return rates.

13.5.5.2.2 In-season Assessment

There is currently no in-season assessment tool for Sockeye in Area 7 and 8. In-stream enumerations are performed on some systems as well as overflights to estimate total escapement.

13.5.5.3 DECISION GUIDELINES AND MANAGEMENT ACTIONS

In Area 5, local streams could develop small surpluses and these will be monitored in-season. Area 5 will open in conjunction with Area 4 Sockeye-directed openings until early August.

For Areas 6 through 8, there will be no targeted Sockeye openings and Sockeye will not be permitted as by-catch in the seine fishery.

13.5.5.4 INCIDENTAL HARVEST, BY-CATCH AND CONSTRAINTS TO CENTRAL COAST SOCKEYE FISHERIES

Commercial gillnet fisheries targeting local stocks in Area 5 may be considered after discussion with the Gitxaala Nation 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.

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

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:

- Nets may be hung without a weed line (corkline to web distance 0 to 45 cm) to a maximum of 60 meshes deep.
- 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 0.76 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).
- Between July 15th and August 15th 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.

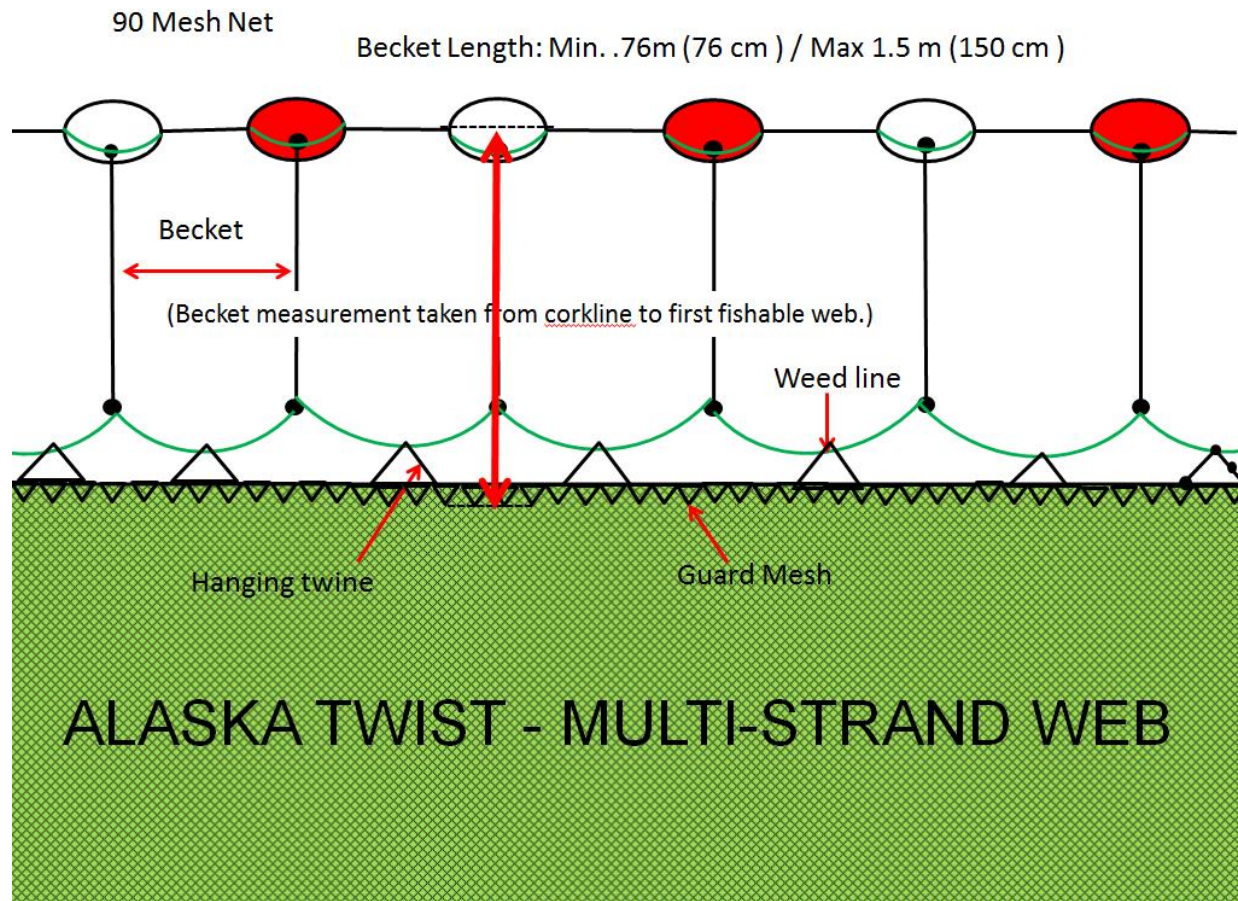


Figure 13.5-9: 90 Mesh Net Construction

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.

13.5.5.5 ALLOCATION AND FISHING PLANS

13.5.5.5.1 First Nations Fisheries

Food Social and Ceremonial

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 the details of the FSC fishery including the dates, times, methods, locations of harvest. Communal licences for Northern Coastal First

Nations are typically multi-species and are issued on an annual basis. Shorter duration amendments to licences are also issued on occasion.

Actual opportunities and catches will be dependent on, among other factors; in-season stock strength, management measures taken to ensure conservation of individual stocks, community needs of First Nations, and alternative sources of salmon if preferred species are not available locally due to low abundance.

Refer to Section 10.2 for Communal Licence Harvest Target Amount [Table 10.2-1](#) in Northern BC First Nations Fisheries.

First Nations Specific Conservation Measures

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

Fishery Monitoring and Catch Reporting

The Strategic Framework for Fisheries Monitoring and Catch Reporting in the Pacific Fisheries is being applied in First Nations FSC fisheries across the region. Work towards this includes assessing current monitoring practices, programs and gaps. The First Nations Fishery Council (FNFC) and other area aggregate groups have assisted in engagement 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 Nations Band offices.

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 electronic 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 as a Microsoft Access program, the database 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. In 2010, work started on compiling all aspects of the approximate 34

current MS Access databases into one (1) VB style system that would be customizable for each Nations' needs. Work on the new system is ongoing.

For more information please contact Aleta Rushton at 250-230-1227.

Treaty Fisheries

There are currently no Treaty fisheries for Central Coast Sockeye.

13.5.5.5.2 Recreational Fisheries

Recreational salmon fishing occurs in the tidal waters of the Central Coast (Areas 5 to 8) with interception fisheries beginning in late April and the peak of the season being from June to August.

In Area 5 the early season effort is mostly by local independent anglers out of Prince Rupert and Port Edward; however the most significant portion of the recreational fishing season develops late May and continues to mid-September. The fleet operating in Area 5 is made up mainly of independent anglers and charter operators.

In Area 6, tidal water recreational salmon fisheries begin in late April. Initial effort is mostly by local independent anglers out of Kitimat. One recreational fishing lodge and a number of charter operators also fish in Area 6 with the most significant portion of the recreational fishing season taking place between late May and mid-September.

The daily limit for Sockeye in Areas 5 and 6 is four (4) per day, unless otherwise varied, and the open time is April 1st to March 31st. The catch of Sockeye is most likely very small.

There is no retention of recreationally caught Sockeye salmon in Areas 7 and 8 at any time of year. If a commercial fishery occurs in these areas, a recreational daily limit would be set.

There are several recreational lodges and charter operators in these areas.

The Central Coast non-tidal waters are in Regions 5B and 6 freshwater fishing areas, and there are no openings for Sockeye.

Detailed information on salmon closures, daily limits, size limits, gear restrictions, and other management measures are found online at BC Sport Fishing Guide. This webpage contains a link to subscribe to recreational Fishery Notices, which can be sent to your email address.

BC Sport Fishing Guide link:

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

Fishery Monitoring and Catch Reporting

In Areas 6 to 8, DFO has been collecting recreational catch data through the Lodge Log Book Program.

13.5.5.3 Commercial Fisheries

Allocation

| Description | Areas | Seine A | Gill Net C | Troll F |
|----------------------|-----------------------|------------------|------------------|---------|
| Skeena/Nass | 1, 3 to 5, 101 to 105 | 25% | 75% | * |
| Central Coast | 6 to 8 | 80% ^a | 20% ^b | * |

Notes on Sockeye allocation (north):

* by-catch provisions

^a share reflects current Sockeye by-catch during Pink directed fisheries

^b potential for re-negotiation of sharing arrangements in event of a future directed Sockeye fishery

Central Coast Fisheries

No commercial opportunities are expected for Sockeye stocks in Areas 6, 7 and 8. Area 5 fisheries will open in conjunction with Sockeye-directed openings in Area 4, should they occur.

13.5.5.4 ESSR Fisheries

There are currently no ESSR fisheries for Central Coast Sockeye

13.5.6 RIVERS & SMITH INLET SOCKEYE

13.5.6.1 SNAPSHOT OVERVIEW AND MAP OF MANAGEMENT UNIT

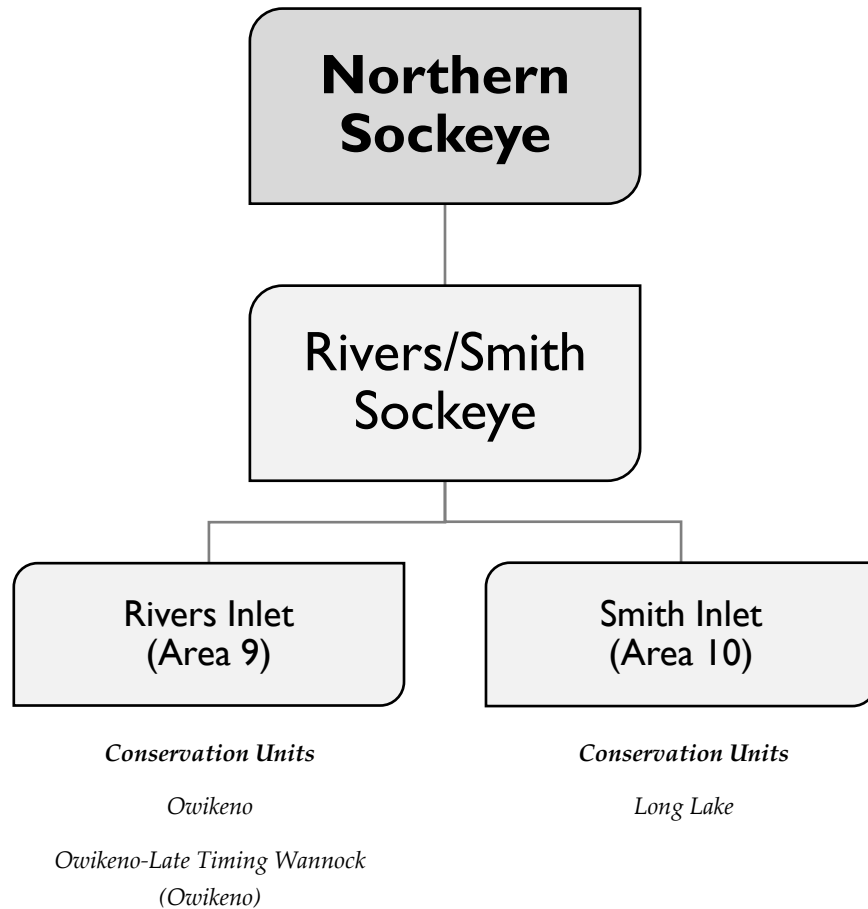


Figure 13.5-10: Overview of Rivers and Smith Inlet Sockeye

The Sockeye fishery on stocks from Rivers and Smith Inlets began in the late 19th century and increased rapidly during the early part of the 20th century. Both systems experienced dramatic declines in total returns of spawning adults since the mid-1990's and a high degree of variability in returns since that time.

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 inconsistent improvement in recent years. Sockeye salmon in Rivers Inlet remain in a period of low productivity.

Over the last 20 years Sockeye returns to Long Lake in Smith Inlet have generally been poor, resulting in only three commercial fisheries since 1996. In recent years, returns have shown

signs of improving, resulting in the three previously mentioned fishery opportunities, including a strong return in 2016 which resulted in a substantial gill net opportunity.

Long Lake Sockeye productivity has been reduced in recent years as the lake is no longer being fertilized. The escapement goal is currently under review and a more cautious management strategy has been adopted.

13.5.6.2 STOCK ASSESSMENT INFORMATION

13.5.6.2.1 Pre-season

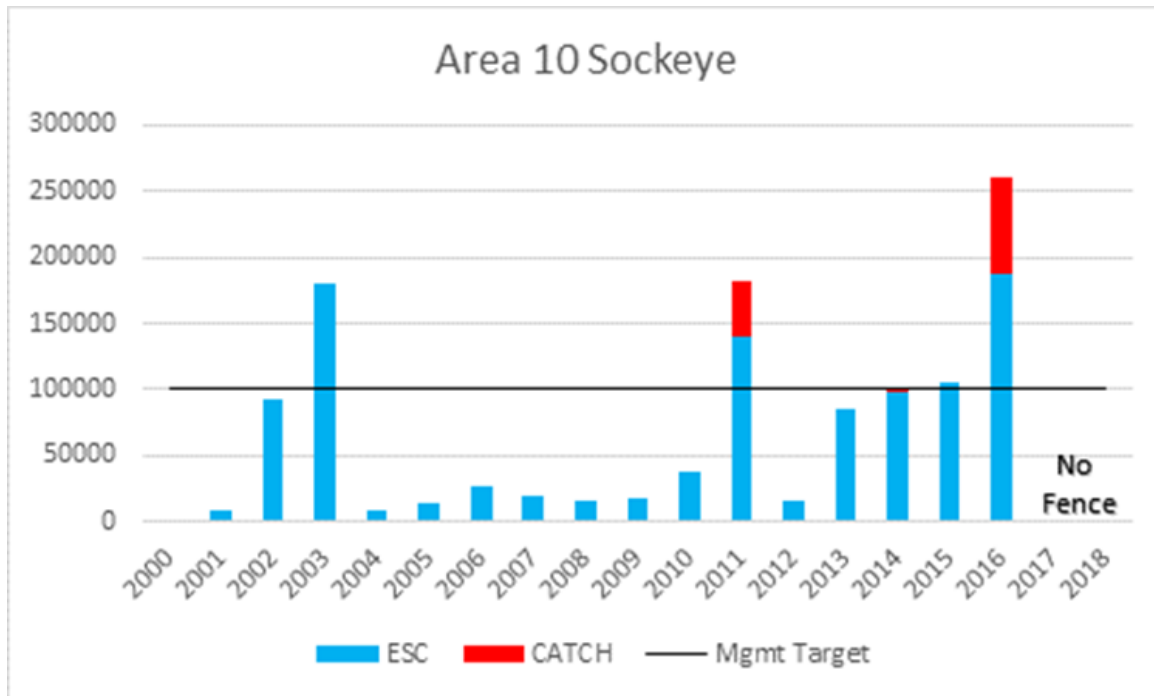
There is no formal pre-season forecast done for either Rivers Inlet or Smith Inlet Sockeye.

The qualitative Salmon Outlook for Areas 9 and 10 has been noted as being “uncertain,” but considered to be ‘average’ with some rebuilding trends seen over the past decade.

Pre-season Rivers and Smith Inlet Sockeye Run Size Forecast:

- The total Rivers Inlet Sockeye return for 2019 is forecasted to be improving but still below the range of desired escapement levels. No commercial or recreational fisheries are expected in 2019.
- The Docee River fence provided in-season assessment of sockeye salmon return to Long Lake in Area 10 from 1972-2016, but has not operated since 2017. As such, in-season estimation of returns to Long Lake will remain uncertain. However, the 2019 return is coming off of above average returns in 2014, 2015 and 2016.

Figure 13.5-11: Sockeye Salmon Catch and Escapement to Area 10



13.5.6.2.2 In-season Assessment

There is currently no in-season assessment tool for Rivers Inlet Sockeye. However the results of a DIDSON/ARIS enumeration project that has been carried out by the Wuikinuxv First Nation for several years are currently under review.

Until 2016, in-season assessment of Smith Inlet Sockeye was conducted at the Docee counting fence. Installed in 1972, the Docee fence allowed for reliable in-season enumeration of escapements to Long Lake, facilitating the management of the Sockeye fishery in-season. As noted above, the Docee Fence has not been in operation since 2017 and is not expected to be operating in 2019.

13.5.6.3 DECISION GUIDELINES AND MANAGEMENT ACTIONS

Rivers Inlet

DFO is continuing to work with the local First Nations via the First Nations Central Coast Salmon Coordinating Committee and local recreational and commercial advisors to review fishing plans for this area. The minimum escapement goal for Rivers Inlet Sockeye is 200,000 Sockeye. DFO is working collaboratively with First Nations and stakeholders to review biological escapement goals for the system through a request to the Canadian Science Advisory

Secretariat (CSAS) process. It is anticipated that the results of this review will be used to inform a further evaluation of the management framework for Sockeye fisheries in Rivers Inlet.

No commercial or recreational Sockeye fisheries are planned for Area 9 in 2019 as the pre-season expectation is for less than the lower threshold of escapement is currently in place for the system.

Smith Inlet

The escapement target for Smith Inlet is 100,000. The Long Lake Sockeye stock remains in a period of uncertainty, following a long period of low productivity beginning in the 1990s. Prior to 2017, opportunities for Long Lake Sockeye-directed fisheries were dependent on in-season evaluation from the Docee Fence which operated in collaboration with the Gwa'sala-'Nakwaxda'xw Nations (GNN). The Docee fence has not been in operation since 2017, and the Department is committed to developing a collaborative approach that will lead to a long-term agreement with the GNN and resume operations of the Docee facility.

13.5.6.4 INCIDENTAL HARVEST, BY-CATCH AND CONSTRAINTS TO RIVERS AND SMITH INLET SOCKEYE FISHERIES

Rivers Inlet

- 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.

Smith Inlet

- If a fishery takes place, a maximum mesh restriction of 150mm will be in place to protect Docee River Chinook stocks.
- Depending on run strength and consultations with First Nations and commercial representatives, fisheries will be considered in Subarea 10-11.
- Boundaries will be restrictive to protect non-targeted stocks. There will be no Coho retention unless abundance warrants.

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

Gill Net Construction

In Management Areas 1 to 10, gill nets of different constructions may be used. Net construction may be either multi-strand (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:

- Nets may be hung without a weed line (corkline to web distance 0 to 45 cm) to a maximum of 60 meshes deep.
- 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 0.76 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).
- Between July 15th and August 15th 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.

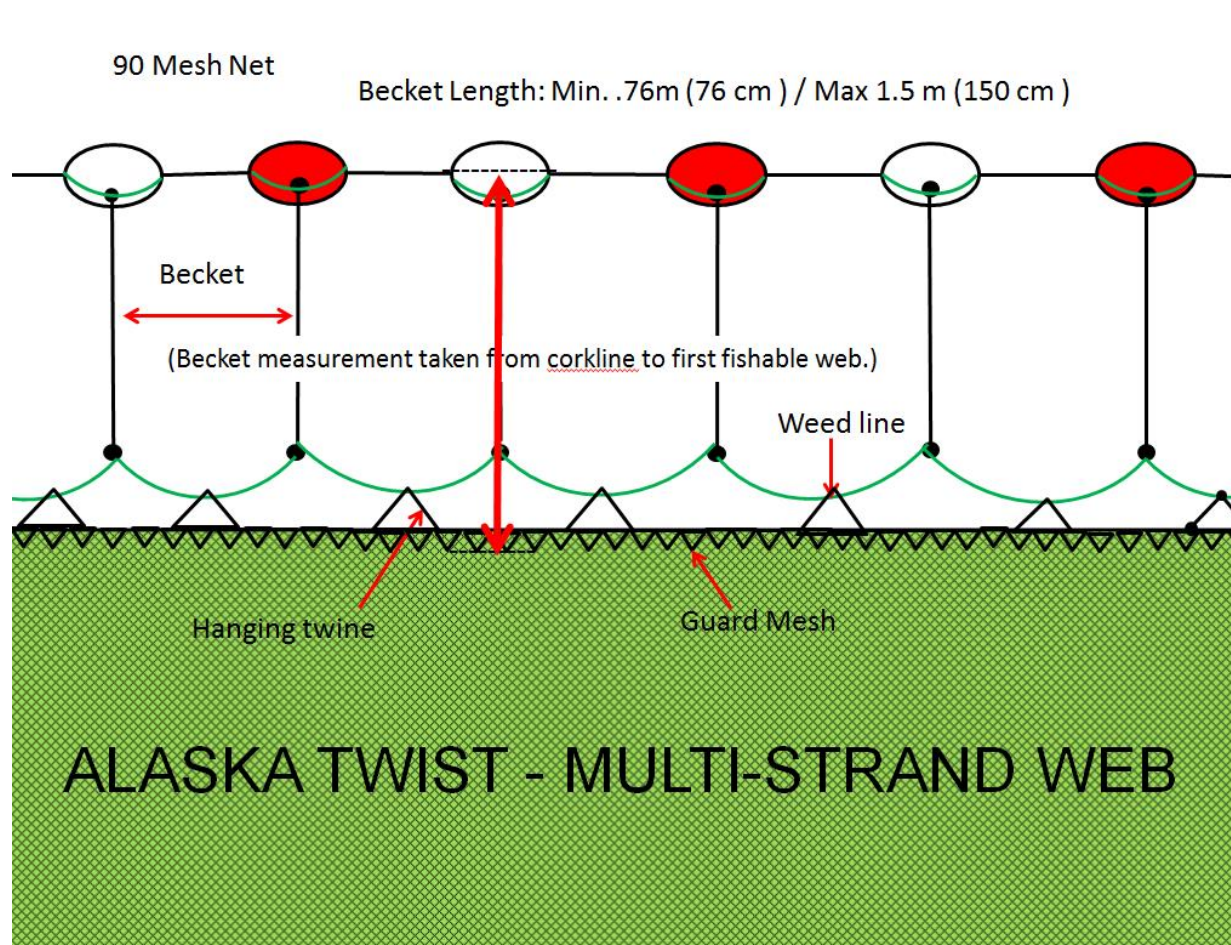


Figure 13.5-12: 90 Mesh Net Construction

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.

13.5.6.5 ALLOCATION AND FISHING PLANS

13.5.6.5.1 First Nations Fisheries

Food Social and Ceremonial

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 the details of the FSC fishery including the dates, times, methods, locations of harvest. Communal licences for Northern Coastal First

Nations are typically multi-species and are issued on an annual basis. Shorter duration amendments to licences are also issued on occasion.

Actual opportunities and catches will be dependent on, among other factors; in-season stock strength, management measures taken to ensure conservation of individual stocks, community needs of First Nations, and alternative sources of salmon if preferred species are not available locally due to low abundance.

Refer to Section 10.2 for Communal Licence Harvest Target Amount [Table 10.2-1](#) in Northern BC First Nations Fisheries.

First Nations Specific Conservation Measures

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

Fishery Monitoring and Catch Reporting

The Strategic Framework for Fisheries Monitoring and Catch Reporting in the Pacific Fisheries is being applied in First Nations FSC fisheries across the region. Work towards this includes assessing current monitoring practices, programs and gaps. The First Nations Fishery Council (FNFC) and other area aggregate groups have assisted in engagement 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 Nations Band offices.

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 electronic 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 as a Microsoft Access program, the database 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. In 2010, work started on compiling all aspects of the approximate 34

current MS Access databases into one (1) VB style system that would be customizable for each Nations' needs. Work on the new system is ongoing.

For more information please contact Aleta Rushton at 250-230-1227.

Treaty Fisheries

There are currently no Treaty fisheries for Rivers or Smith Inlet Sockeye.

13.5.6.5.2 Recreational Fisheries

Recreational salmon fishing occurs in the tidal waters of Rivers and Smith Inlets, with several recreational lodges and independent anglers fishing from late June to early September.

In 2018 there was no recreational fishery for Sockeye salmon. Rivers Inlet also remained closed to recreational Sockeye fishing. A condition of licence in the recreational Tidal Waters Sport Fishing Licence applies to all angling in the Rivers Inlet Special Management Zone (SMZ).

Please consult the regulations on tidal and freshwater salmon recreational fishing which can be found online at:

<http://www.bcsportfishingguide.ca>.

For direct notification of regulatory changes, individuals may sign up to have recreational fishery notices sent directly to their email at the website above. Refer to the link to subscribe to fishery notices on the right hand side of the page.

Fishery Monitoring and Catch Reporting

In Area 9, DFO has been collecting recreational catch data through the Lodge Log Book Program. In Area 10, logbook information is used to provide catch and release numbers from anglers fishing in the area.

13.5.6.5.3 Commercial Fisheries

Allocation

| Description | Areas | Seine A | Gill Net C | Troll F |
|----------------------------|---------|---------|------------|--------------|
| Rivers/Smith Inlets | 9 to 10 | 5% | 95% | ^c |

^c potential for future re-negotiation

Rivers and Smith Inlet Fisheries

No commercial or recreational fisheries are expected for Rivers Inlet Sockeye in 2019, and will remain unlikely until there is a trend towards higher ocean survival and significant and consistent improvements in escapement.

Brood year escapements for Long Lake Sockeye have improved in recent years, but forecasts are extremely uncertain due to highly variable return rates. The preliminary pre-season forecast is highly uncertain.

13.5.6.5.4 ESSR Fisheries

There are currently no ESSR fisheries for Rivers Inlet or Smith Inlet Sockeye.

APPENDIX I: LOGBOOK SAMPLES

SALMON TROLL Logbook I.D. # **T** **SAMPLE** Report Catch to: 1-(888) 387-0007 Record all catch in pieces **Page #** 11111

| | | | | | | | | | | | | | | | | | | | |
|---|------------|-----------------|--------------|-----------------------|-------------------------------|---------|------|------|------|-----------------------------------|-------------------------------------|---------------------|----------|--|----------------------------|----------|--|--|--|
| Vessel Name: Pacific Blue | | | | | | | | | | VRN (CFV#): 12346 | | | | | | | | | |
| Date | Mgmt. Area | Zone or Subarea | Hours Fished | Catch frozen or iced? | ¹ Kept or Released | Sockeye | Coho | Pink | Chum | ² Legal Sized Chinook | ² Sublegal Sized Chinook | ³ Grilse | Atlantic | ⁴ Rockfish | ⁵ Other Species | | | | |
| Day | Mon. | | | | | | | | | | | | | | | | | | |
| 15 | Jul | 4 | 9 | 3 | (F) or I | Kept | 25 | 0 | 12 | 0 | 0 | X | X | 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 | | | | | | | | | | | | | | ⁶ DCR Conf. #: FOS-12346 | | | | | |
| Vessel Master Name: Dan Doe | | | | | Signature: Dan Doe | | | | | ⁷ F.I.N.: 99999 | | | | | | | | | |
| 15 | Jul | 4 | 5 | 8 1/2 | (F) or I | Kept | 42 | 0 | 8 | 0 | 0 | X | X | 0 | 0 | 0 | | | |
| Trip ID #: FOS-12345 | | | | | Rel. | 0 | 0 | 0 | 0 | 2 | 5 | 1 | 0 | 8 Yelloweye, 6 unknown rockfish | | 0 | | | |
| Comments: 2 Rhinoceros Auklets released alive at 10 AM | | | | | | | | | | | | | | ⁶ DCR Conf. #: FOS-12346 | | | | | |
| Vessel Master Name: Dan Doe | | | | | Signature: Dan Doe | | | | | ⁷ F.I.N.: 99999 | | | | | | | | | |
| 16 | Jul | 5 | 1 | 10 | (F) or I | Kept | 12 | 0 | 0 | 0 | 0 | X | X | 0 | 0 | 0 | | | |
| Trip ID #: FOS-12345 | | | | | Rel. | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 2 Chilipepper, 2 unknown rockfish | | 0 | | | |
| Comments: | | | | | | | | | | | | | | ⁶ DCR Conf. #: FOS-12346 | | | | | |
| Vessel Master Name: Dan Doe | | | | | Signature: Dan Doe | | | | | ⁷ F.I.N.: 77777 | | | | | | | | | |
| 18 | Jul | 5 | 1 | 6 | (F) or I | Kept | 0 | 0 | 0 | 0 | 8 | X | X | 0 | 0 | 0 | | | |
| Trip ID #: FOS-12398 | | | | | Rel. | 0 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1L | | | |
| Comments: | | | | | | | | | | | | | | ⁶ DCR Conf. #: FOS-12402 | | | | | |
| Vessel Master Name: John Smith | | | | | Signature: John Smith | | | | | ⁷ F.I.N.: 77777 | | | | | | | | | |
| 18 | Jul | 5 | 3 | 5 1/2 | (F) or I | Kept | 0 | 0 | 0 | 0 | 12 | X | X | 0 | 0 | 0 | | | |
| Trip ID #: FOS-12398 | | | | | Rel. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2D | | | |
| Comments: | | | | | | | | | | | | | | ⁶ DCR Conf. #: FOS-12402 | | | | | |
| Vessel Master Name: John Smith | | | | | Signature: John Smith | | | | | ⁷ F.I.N.: 77777 | | | | | | | | | |

1. Catch: **Kept** are species retained on board; **Released** are species returned to the ocean. 2. As defined in the applicable Fishery Notice. 3. **Grilse** are juvenile salmon under 30 cm. 4. Rockfish are to be identified by species; if unsure of species, record as Unknown Rockfish. 5. **Other Species**: L=Lingcod, H=Halibut, D=Dogfish, M=Mackerel, S=Steelhead. If any **birds, marine mammals, or turtles** were encountered, give time of capture and full name of species in comments. 6. **DCR Conf. #** is the confirmation number received upon completion of the Daily Catch Report. 7. Vessel master's **Fisher Identification Number**.

2019

SALMON GILLNET Logbook I.D. # **G SAMPLE** Report Catch to: 1-(888) 387-0007 Record all catch in pieces Page # **11111**

| Vessel Name: | | Pacific Blue | | | | | | | | | | VRN (CFV#): | | 12346 | | | | |
|--|------------|---------------------|--------------|--------------------------|-------------------------------|---------|------------|-----------|-------------------------------|-----------------------------------|-------------|-------------|---------|-----------------------|--|-----------------------|-----------|-----------|
| Net Details | | Type ¹ : | A | # Strands ² : | 6 | Length: | 200 | (fathoms) | Weedline Depth ³ : | 30cm | Hang Ratio: | 3 | : | 1 | Mesh Size ⁴ : | 7/8" | # Meshes: | 90 |
| Daily Catch Records | | | | | | | | | | | | | | | | | | |
| Date | Mgmt. Area | Sub-area(s) | Hours Fished | # of sets | ⁴ Kept or Released | Sockeye | Coho | Pink | Chum | Chinook | Steel-head | Atlantic | Dogfish | ⁵ Sturgeon | ⁶ Other Fish | ⁷ Non-fish | | |
| 4 Aug 12 | 12-4 | 5.5 | 5 | Kept | 4 | 0 | 23 | 127 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Yes | | |
| Trip ID #: FOS-12480 | | | | | Rel. | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | No | | |
| Comments: 2 birds killed in 10AM set, kept for research program. Rhinoceros Auklets. | | | | | | | | | | | | | | | ⁸ DCR Conf. #: FOS-12346 | | | |
| Vessel Master Name: Dan Doe | | | | | Signature: Dan Doe | | | | | ⁹ F.I.N.: 99999 | | | | | | | | |
| 5 Aug 12 | 12-5 | 7 | 3 | Kept | 73 | 0 | 245 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | Yes | | |
| Trip ID #: FOS-12480 | | | | | Rel. | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2M, 1 salmon shark | No | | |
| Comments: Offloaded at CANFISCO in Port Hardy on August 5 at 14:00. | | | | | | | | | | | | | | | ⁸ DCR Conf. #: FOS-12367 | | | |
| Vessel Master Name: Dan Doe | | | | | Signature: Dan Doe | | | | | ⁹ F.I.N.: 99999 | | | | | | | | |
| 5 Aug 12 | 12-4 | 2 | 3 | Kept | 88 | 0 | 116 | 7 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | Yes | | |
| Trip ID #: FOS-12480 | | | | | Rel. | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 11M, 2R | No | | |
| Comments: Steelhead released in good condition. 2 sea lions released alive around 11AM. | | | | | | | | | | | | | | | ⁸ DCR Conf. #: FOS-12367 | | | |
| Vessel Master Name: John Smith | | | | | Signature: John Smith | | | | | ⁹ F.I.N.: 77777 | | | | | | | | |
| 29 Aug 17 | 17-11 | 6 | 6 | Kept | 163 | 0 | 328 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Yes | | |
| Trip ID #: FOS-12773 | | | | | Rel. | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | No | | |
| Comments: | | | | | | | | | | | | | | | ⁸ DCR Conf. #: FOS-12521 | | | |
| Vessel Master Name: John Smith | | | | | Signature: John Smith | | | | | ⁹ F.I.N.: 77777 | | | | | | | | |
| 29 Aug 29 | 29-2 | 4 | 6 | Kept | 205 | 0 | 493 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Yes | | |
| Trip ID #: FOS-12773 | | | | | Rel. | 0 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | No | | |
| Comments: Both coho put in rev. tank, one died, one released in good condition | | | | | | | | | | | | | | | ⁸ DCR Conf. #: FOS-12523 | | | |
| Vessel Master Name: John Smith | | | | | Signature: John Smith | | | | | ⁹ F.I.N.: 77777 | | | | | | | | |

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. Please specify White or Green Sturgeon in **Comments** Section. 6. **Other Fish:** M= Mackerel, L= Lingcod, H= Halibut. Give full name for other species. 7. Circle Yes or No as appropriate if any **birds, marine mammals, or turtles** were encountered. Give time of capture and species details in comments. 8. **DCR Conf. #** is the confirmation number received upon completion of the Daily Catch Report. 9. **F.I.N.** Is the Fisher Identification Number.

2019

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 | | | |
|---|------------|-------------|--------------|-----------|-------------------------------|---------|----------------|---------------------------|------|---------------|---------------------------|---------------------------------|----------|---|-----------------------|--------------------------|--|
| Daily Catch Records | | | | | | | | | | | | | | | | | |
| Date | Mgmt. Area | Sub-area(s) | Hours Fished | # of sets | ¹ Kept or Released | Sockeye | Coho | Pink | Chum | Adult Chinook | ² Jack Chinook | Steelhead | Atlantic | ³ Other Fish | ⁴ Non-fish | | |
| 14 Aug | 3 | 3-3, 3-2 | 8 | 5 | Kept | 42 | 0 | 431 | 0 | 0 | 0 | 0 | 6 | 0 | Yes | | |
| Trip ID #: FOS-12281 | | | | | Rel. | 0 | 3 | 0 | 12 | 2 | 0 | 0 | 0 | 0 | No | | |
| Comments: 2 Rhinoceros Auklets released alive at 10 AM, 1 coho clipped, 2 coho dead, 1 rel'd alive | | | | | | | | | | | | | | DCR Conf. #: 5 FOS-12346 | | | |
| Vessel Master Name: Dan Doe Signature: Dan Doe | | | | | | | | | | | | | | ⁷ F.I.N.: 99999 | | | |
| 15 Aug | 4 | 4-5 | 5½ | 2 | Kept | 38 | 0 | 850 | 0 | 0 | 0 | 0 | 0 | 0 | Yes | | |
| Trip ID #: FOS-12281 | | | | | Rel. | 0 | 0 | 0 | 2 | 1 | 0 | 1 | 0 | 4 D, 1 L, 1 salmon shark | No | | |
| Comments: 1 harbour seal released, steelhead revived in tank then released in good condition | | | | | | | | | | | | | | DCR Conf. #: 6 FOS-12358 | | | |
| Vessel Master Name: Dan Doe Signature: Dan Doe | | | | | | | | | | | | | | ⁷ F.I.N.: 99999 | | | |
| 19 Aug | 4 | 4-5 | 9 | 4 | Kept | 53 | 0 | 560 | 0 | 0 | 0 | 0 | 0 | 0 | Yes | | |
| Trip ID #: FOS-12403 | | | | | Rel. | 0 | 2 | 0 | 17 | 4 | 12 | 0 | 0 | 0 | No | | |
| Comments: Both coho rel'd in good condition. 12 jack chinook squishers all dead. | | | | | | | | | | | | | | DCR Conf. #: 6 FOS-12428 | | | |
| Vessel Master Name: John Smith Signature: John Smith | | | | | | | | | | | | | | ⁷ F.I.N.: 77777 | | | |
| Offload Catch Records | | | | | | | | | | | | | | | | | |
| Dates Fished | | | | | | # | Date offloaded | Sockeye | Coho | Pink | Chum | Chinook | (Other) | Complete if catch pooled with that of another vessel: | | | |
| First date | | Last date | | Days | | | | | | | | | | | | | |
| Day | Month | Day | Month | fished | | | | | | | | | | Received from: | Offloaded to: | Vessel | |
| 14 | Aug | 15 | Aug | 2 | 15 | Aug | 471 | 0 | 3958 | 0 | 0 | 0 | 42 | | | Name: | |
| Business and port offloaded to: Canfisco, Pr. Rupert | | | | | | | | Fish slip #: 79768 | | | | OCR Conf. #: 6 FOS-12380 | | VRN (CFV#): | | | |
| 19 | Aug | 19 | Aug | 1 | 20 | Aug | 310 | 0 | 1692 | 0 | 0 | 0 | 0 | | ✓ | Name: Home Run II | |
| Business and port offloaded to: | | | | | | | | Fish slip #: 79801 | | | | OCR Conf. #: 6 FOS-12482 | | VRN (CFV#): 12347 | | | |

1. Catch: Kept are species retained on board; Released are species returned to the ocean. 2. Jack Chinook are all chinook smaller than 67 cm fork length (approx 26 inches). 3. Other Fish: M= Mackerel, L= Lingcod, H= Halibut, D= Dogfish. Give full name for other species. 4. Circle Yes or No as appropriate if any birds, marine mammals, or turtles were encountered. Give time of capture and full name of species in comments. 5. DCR Conf. # is the confirmation number received upon completion of the Daily Catch Report. 6. OCR Conf. # is the Offload Catch confirmation number. 7. Enter the vessel master's Fisher Identification Number.

2019

APPENDIX 2: FISHING VESSEL SAFETY

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I OVERVIEW – FISHING VESSEL SAFETY

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

In the federal government, responsibility for shipping, navigation, and vessel safety regulations and inspections lies with TC; emergency response with the Canadian Coast Guard (CCG) and DFO has responsibility for management of the fisheries resources. In BC, WorkSafeBC exercises jurisdiction over workplace health and safety and conducts inspections on commercial fishing vessels in order to ascertain compliance with the Workers Compensation Act (WCA) and the Occupational Health and Safety Regulation (OHSR).

Before departing on a voyage the owner, master or operator must ensure that the fishing vessel is capable of and safe for the intended voyage and fishing operations. Critical factors for a safe voyage include the seaworthiness of the vessel, having the required personal protective and life-saving 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 training
- Fish Safe – Stability Education Program & 1 Day Stability Workshop
- Fish Safe – SVOP/Safe on the Wheel Course
- Fish Safe – Safest Catch Program – FREE for BC commercial fishers
- First Aid training
- Radio Operators Course
- Fishing Masters Certificate training
- Small Vessel Operators Certificate training
- 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>)
- Amendments to the Small Fishing Vessel Inspection Regulations (can be obtained from: <http://www.gazette.gc.ca/rp-pr/p2/2016/2016-07-13/html/sor-dors163-eng.php>)
- 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 Quick

For further information see:

<http://www.tc.gc.ca/eng/marinesafety/menu.htm>

<http://www.fishsafebc.com>

<http://www.worksafebc.com>

2 IMPORTANT PRIORITIES FOR VESSEL SAFETY

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

1.1 FISHING VESSEL STABILITY

Vessel stability is paramount for safety. Care must be given to the stowage and securing of all cargo, skiffs, equipment, fuel containers and supplies, and also to correct ballasting. Fish harvesters must be familiar with their vessel's centre of gravity, the effect of liquid free surfaces on stability (i.e. loose water or fish on deck), loading and unloading operations, watertight integrity 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. These instructions must 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 Fishing Vessel Safety 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 include fishing vessels involved in the catch of herring or capelin. In 2017, Transport Canada Marine Safety (TC) issued Ship Safety Bulletin (SSB) [No. 03/2017](#) announcing the coming into force of the New Fishing Vessel Safety Regulations. The initial regulations were published in the Canada Gazette Part II on July 13, 2016 and came into force on July 13, 2017. The bulletin includes important information on changes to requirements for Written Safety Procedures, Safety Equipment and Vessel Stability.

As of July 13, 2017, the following fishing vessels must successfully undergo a stability assessment by a competent person:

- A new fishing vessel that has a hull length of more than 9 m;
- A fishing vessel more than 9 m and that has undergone a major modification or a change in activity that is likely to adversely affect its stability;
- A fishing vessels that is fitted with an anti-roll tank at any time;
- A fishing vessel more than 15 gross tonnage and used for catching herring or capelin during the period beginning on July 6, 1977 and ending on July 13, 2017

A fishing vessel that is not required to undergo a stability assessment shall have adequate stability to safely carry out the vessel's intended operations. Guidelines have been developed and are available online to help small fishing vessel owners and operators meet their regulatory requirements. Additionally, Transport Canada published a Stability Questionnaire ([SSB No. 04/2006](#)) and Fishing Vessel Modifications Form ([SSB No. 01/2008](#)) which enable operators to identify the criteria which will trigger a stability assessment. Please contact the nearest Transport Canada office if you need to determine whether your vessel requires one, or to receive guidance on obtaining competent assessor.

In 2008, TC is updating [SSB No. 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.

he TSB has investigated several fishing vessel accidents since 2005 and found a variety of factors that effected the vessel's stability were identified as contributing factors in vessels capsizing, such as with: [M05W0110](#) - *Morning Sunrise*, [M07M0088](#) - *Big Sisters*, [M08W0189](#) - *Love and Anarchy*, [M09L0074](#) - *Le Marsouin I*, [M10M0014](#) - *Craig and Justin*, [M12W0054](#) - *Jessie G*, [M12W0062](#) - *Pacific Siren*, [M14P0121](#) - *Five Star*, [M15P0286](#) - *Caledonian*, M16A0140 - C19496NB, M17C0061 - *Emma Joan* and M17P0052 - *Miss Cory*.

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, naval architect or the local Transport Canada Marine Safety office.

WorkSafeBC's Occupational Health and Safety Regulation (OHSR) require owners of fishing vessels to provide documentation on board, readily accessible to crew members, which describes vessel characteristics, including stability.

In 2013, Fish Safe developed a code of best practices for the food and bait herring fishery and the prawn fishery: 'Food and Bait – Best Practice Reminders'; 'Prawn Industry - Best Industry Recommended Practices.' Please contact Ryan Ford at Fish Safe for a copy of the program materials they developed to address safety and vessel stability in these fisheries. Ryan Ford – Cell phone: (604) 739-0540 - Email: ryan@fishsafebc.com.

I.2 EMERGENCY DRILL REQUIREMENTS

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

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

WorkSafeBC's Occupational Health and Safety Regulation (OHSR) require written rescue and evacuation procedures for work on or over water. Additionally, fishing vessel masters must establish procedures and assign responsibilities to each crew member to cover all emergencies, including the following: crew member overboard, fire on board, flooding of the vessel, abandoning ship, and calling for help. Fishing vessel masters are also required to conduct emergency drills with the crew for the established procedures.

Between 2011 and 2015 the TSB investigated 17 fishing vessel accidents which resulted in 17 fatalities. The report's findings highlighted the lack of safety drills and safety procedures and practices.

The Safest Catch program, delivered by Fish Safe and free to BC commercial fishers, includes comprehensive practice of drills such as abandon ship, man overboard and firefighting drills.

I.3 COLD WATER IMMERSION

Drowning is the number one cause of death in BC's fishing industry. Cold water is defined as water below 25 degrees Celsius, but the greatest effects occur below 15 degrees C. BC waters are usually below 15 degrees C. Normal body temperature is around 37 degrees Celsius; cold water rapidly draws heat away from the body. 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 WorkSafeBC Bulletin *Cold Water Immersion* (available from the WorkSafeBC website at www.worksafebc.com)

WorkSafeBC currently requires workers who are employed under conditions which involve a risk of drowning to wear a PFD or lifejacket with sufficient buoyancy to keep the worker's head above water. Where there is a risk of entering the water, the use of a PFD will prepare a crew member to remain afloat, to survive the effects of cold shock, reduce the need to swim and give rescuers time to respond.

It has been demonstrated time and again that, when worn, PFD's save lives - and the chance of surviving a mishap increases significantly when these devices are worn while working on deck.

Resulting from the TSB investigations into the *Diane Louise* - [M14P0110](#) and the *Caledonian* – [M15P0286](#) fishing vessel accidents the Board recommended that both TC and WorkSafeBC require that persons wear a suitable personal flotation devices (PFDs) at all times when: on the deck of a commercial fishing vessel; or, when on board a commercial fishing vessel without a deck or deck structure, and ensure that programs are developed to confirm compliance.

I.4 OTHER ISSUES

2.1.1 WEATHER

Vessel owners and masters are reminded of the importance of paying close attention to current weather trends 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

2.1.2 EMERGENCY RADIO PROCEDURES

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

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

Since August 1, 2003 all commercial vessels greater than 8 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/eng/CCG/Home> or go directly to the Industry Canada web page: www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01032.html

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 Victoria or Prince Rupert or from the Coast Guard website: www.ccg-gcc.gc.ca/Pacific).

2.1.3 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:

- e) a ship towing or pushing inside a log booming ground,
- f) a pleasure yacht *less than* 30 metres in length, and
- g) 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 (250) 363 8904 or from the Coast Guard website:

<http://www.ccg-gcc.gc.ca/eng/CCG/Home>

2.1.4 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/voyage 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.

3 WORKSAFEBC

WorkSafeBC exercises jurisdiction over workplace health and safety, including the activities of crews of fishing vessels. Commercial fishing, diving, and other marine operations are subject to the provisions of the Workers Compensation Act (WCA) and requirements in Part 24 of the Occupational Health and Safety Regulation (OHSR).

Examples of Part 24 regulatory requirements related to fishing include, but are not limited to, the requirement to establish emergency procedures, to conduct emergency drills, to provide immersion suits for the crew, to provide stability documentation for the vessel, safe work procedures, injury reporting, correction of unsafe working conditions, etc.

Other sections of the OHSR also apply to commercial fishing operations. For example, Part 3 addresses training of young and new workers, first aid, and employer incident/accident investigations. Part 4 addresses general conditions such as maintenance of equipment, workplace conduct and impairment. Part 8 addresses issues related to safety headgear, safety footwear, and personal flotation devices (PFDs). Part 12 addresses issues related to tools, machinery and equipment, including safeguarding. Part 15 addresses issues related to rigging.

Additionally, Part 3 of the WCA defines the roles and responsibilities of owners, employers, supervisors and workers. (Fishing vessel masters are considered to be employers under the WCA)

The OHSR and the WCA are available from the Provincial Crown Printers or by visiting the WorkSafeBC website: www.worksafebc.com

NOTE: Regarding the OHSR requirement to wear PFD's, WorkSafeBC has produced a video entitled "Turning the Tide – PFD's in the Fishing Industry". For more information on PFD use, including a link to the video, please access the following site:

<https://www.worksafebc.com/en/about-us/news-events/news-releases/2018/November/new-fishing-industry-safety-video?origin=s&returnurl=https%3A%2F%2Fwww.worksafebc.com%2Fen%2Fsearch%23q%3DTurning%2520the%2520Tide%26sort%3Drelevancy%26f%3Alanguage-facet%3D%5BEnglish%5D>

For further information, contact an Occupational Safety Officer:

- Bruce Logan, Vancouver/Richmond/Delta, (604) 244-6477
- Cody King, Courtenay, (250) 334-8733
- Mark Lunny, Courtenay, (250) 334-8732
- Jessie Kunce, Victoria, (250) 881-3461
- Gregory Matthews, Courtenay, (250) 334-8734
- Pat Olsen, Manager of Interest for Marine and Fishing, (250) 334-8777

For information on projects related to commercial fishing:

For information on projects and initiatives related to commercial fishing health and safety please contact Tom Pawlowski (604) 233-4062 or by email: tom.pawlowski@worksafebc.com

4 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 fishers in this goal. The Fish Safe Stability Education Program and 1 Day

Stability Workshop are available to all fishers who want to improve their understanding of stability and find practical application to their vessel's operation. The SVOP (Small Vessel Operator Proficiency) Course is designed to equip crew with the skills they need to safely navigate during their wheel watch. The Safest Catch Program, along with fisher-trained Safety Advisors, is designed to give fishers the tools they need to create a vessel specific safety management system.

Fish Safe is managed by Ryan Ford, Program Manager and support staff including John Krgovich, Program Coordinator, Stephanie Nguyen, Program Assistant, Rhoda Huey, Bookkeeper/Administrative Assistant and an experienced team of fisher 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 fishing vessels). The Advisory Committee meets two to three times annually 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 WorkSafeBC to improve the fishing injury claims process. For further information contact:

Ryan Ford, Program Manager

Cell: (604) 739-0540

Fish Safe Office: (604) 261-9700

#100, 12051 Horseshoe Way

Richmond, BC, V7A 4V4

Email: ryan@fishsafebc.com

Website: <http://www.fishsafebc.com>

5 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 2014 the TSB released three investigation reports:

- the collision between trawl fishing vessel [Viking Storm](#) and US long line fishing vessel Maverick and the subsequent fatality,
- the person over board off the prawn fishing vessel [Diane Louise](#) and the subsequent fatality, and
- the capsizing of the crab fishing vessel [Five Star](#) and subsequent fatality.

In 2016 the TSB released one investigation report:

- the capsizing of the trawl [Caledonian](#) and subsequent fatalities.

In 2018 the TSB released two investigation reports:

- the capsizing and sinking of the Miss Cory and subsequent fatality.
- the sinking of the Western Commander and loss of life.

The TSB issues five recommendations following the *Caledonian* report. Three recommendations issued are aimed at ensuring all crews have access to adequate stability information that meets their needs. That means:

- All commercial fishing vessels should have a stability assessment appropriate for their size and operation.
- The information from that assessment must then be kept current, and it must be used to determine safe operating limits.

Moreover, these operating limits must be easily measurable, and relevant to the vessel's operation. For example, that could mean marking the sides of a vessel's hull to indicate the maximum operating waterline. Or maximum permitted loads can be specified in the most relevant unit of measure—total catch weight for instance, or the safe number of traps. Regardless, for it to be of real, practical use, the information must be presented in a format that is clearly understood and easily accessible to crew.

The other two recommendations address the most basic step that fishers can take: wearing a personal flotation device. Here in British Columbia, roughly 70 percent of all fishing-related fatalities in the past decade came while not wearing a PFD. Yet many fishers still don't wear them. Regulations currently require that PFDs be worn only if fishers identify a risk, however; you never know when you could end up in the water. So the TSB is recommending to TC and WorkSafeBC to require persons to wear suitable personal flotation devices at all times when on the deck of a commercial fishing vessel or when on board a commercial fishing vessel without a deck or deck structure and that programs are developed to confirm compliance.

For more information about the TSB, visit the website at:

<http://www.tsb.gc.ca>

For information about the TSB's investigation into fishing safety, or to view a brief video, visit:

<http://www.tsb.gc.ca/eng/medias-media/videos/marine/m09z0001/index.asp>

To view information on the TSB's recent safety Watchlist, visit:

<http://www.tsb.gc.ca/eng/surveillance-watchlist/marine/2018/marine.asp>

Reporting an Occurrence:

<http://www.tsb.gc.ca/eng/incidents-occurrence/marine>

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

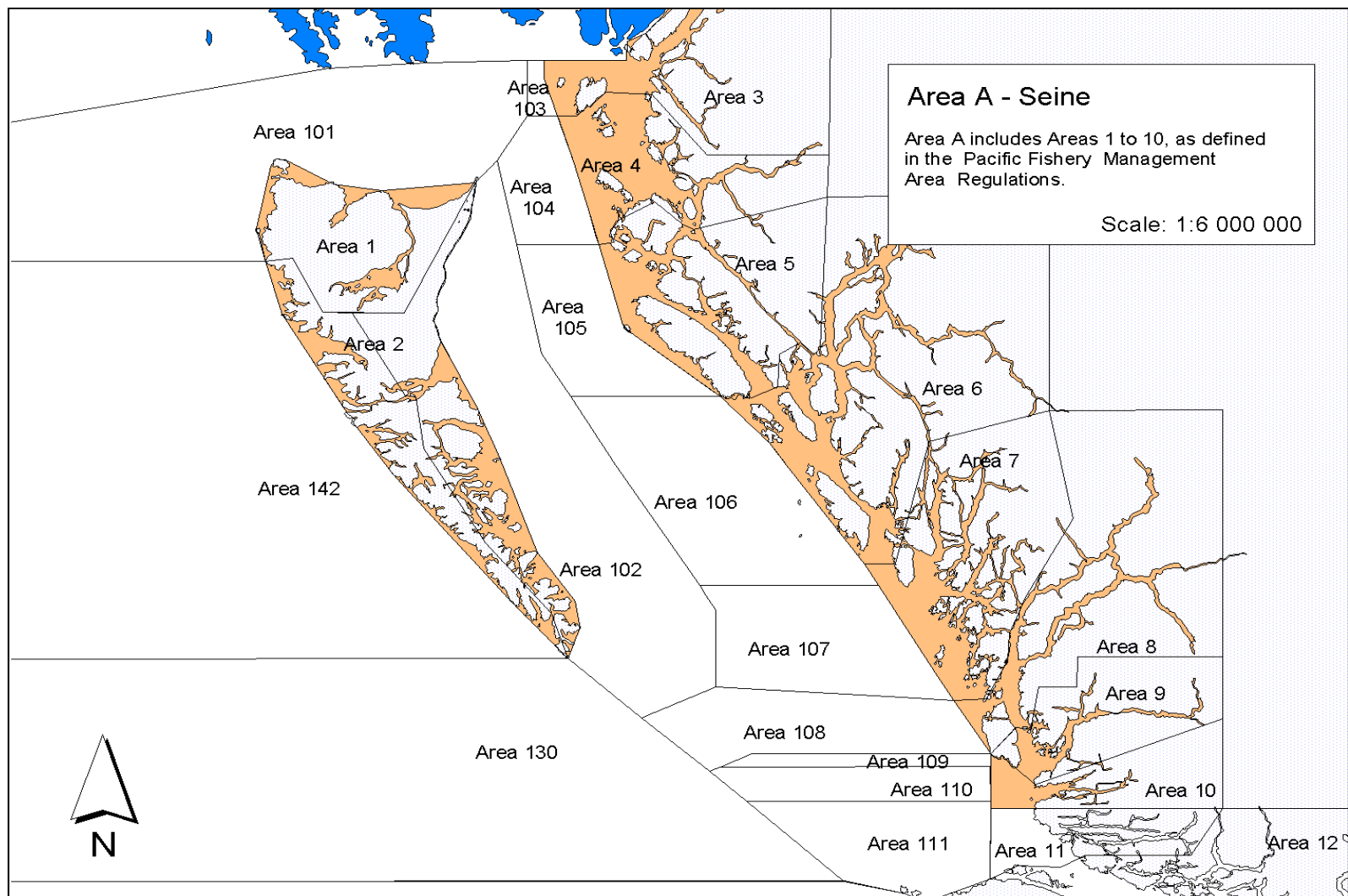
Email: glenn.budden@tsb.gc.ca

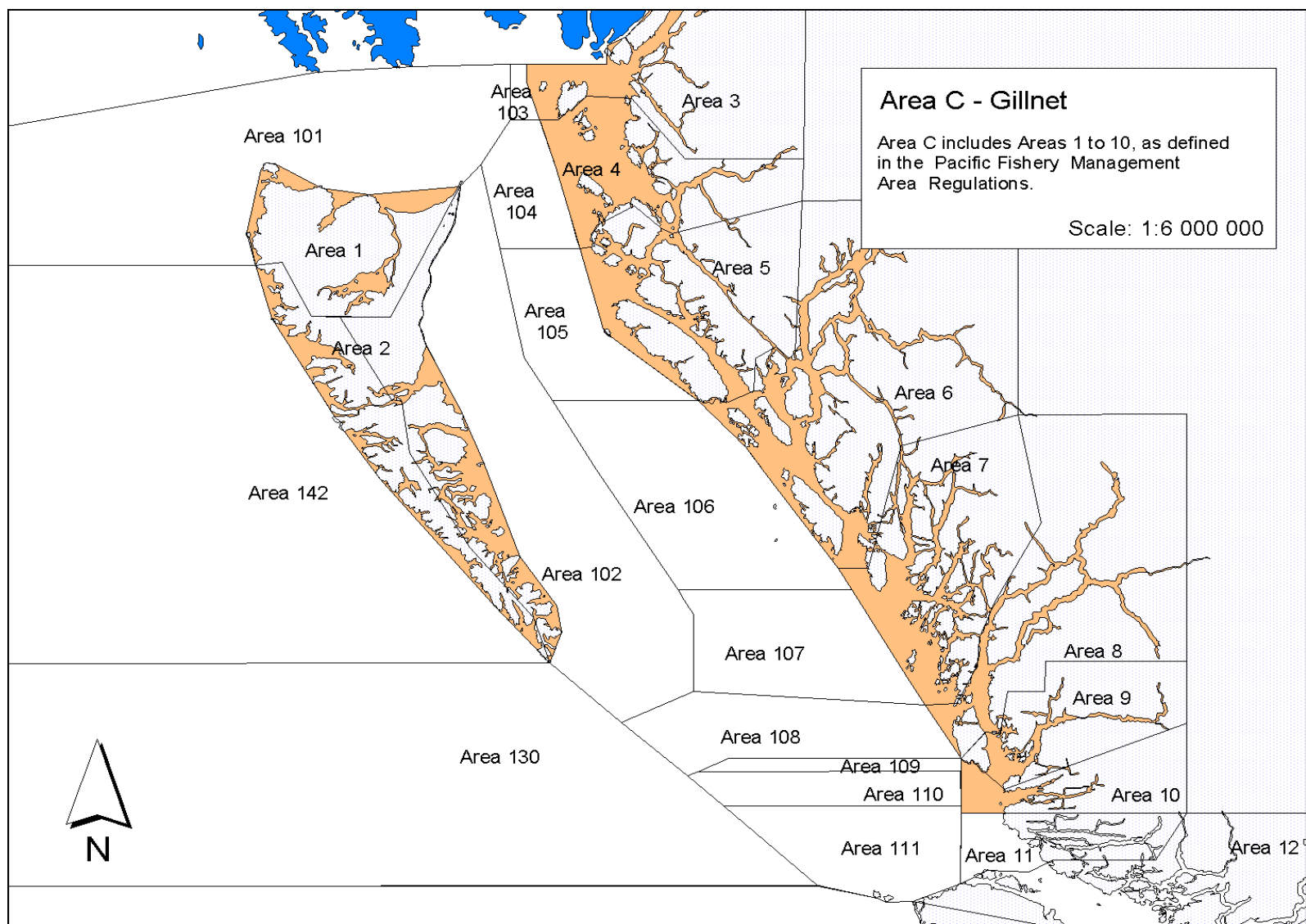
APPENDIX 3: COMMERCIAL SALMON LICENCE AREAS

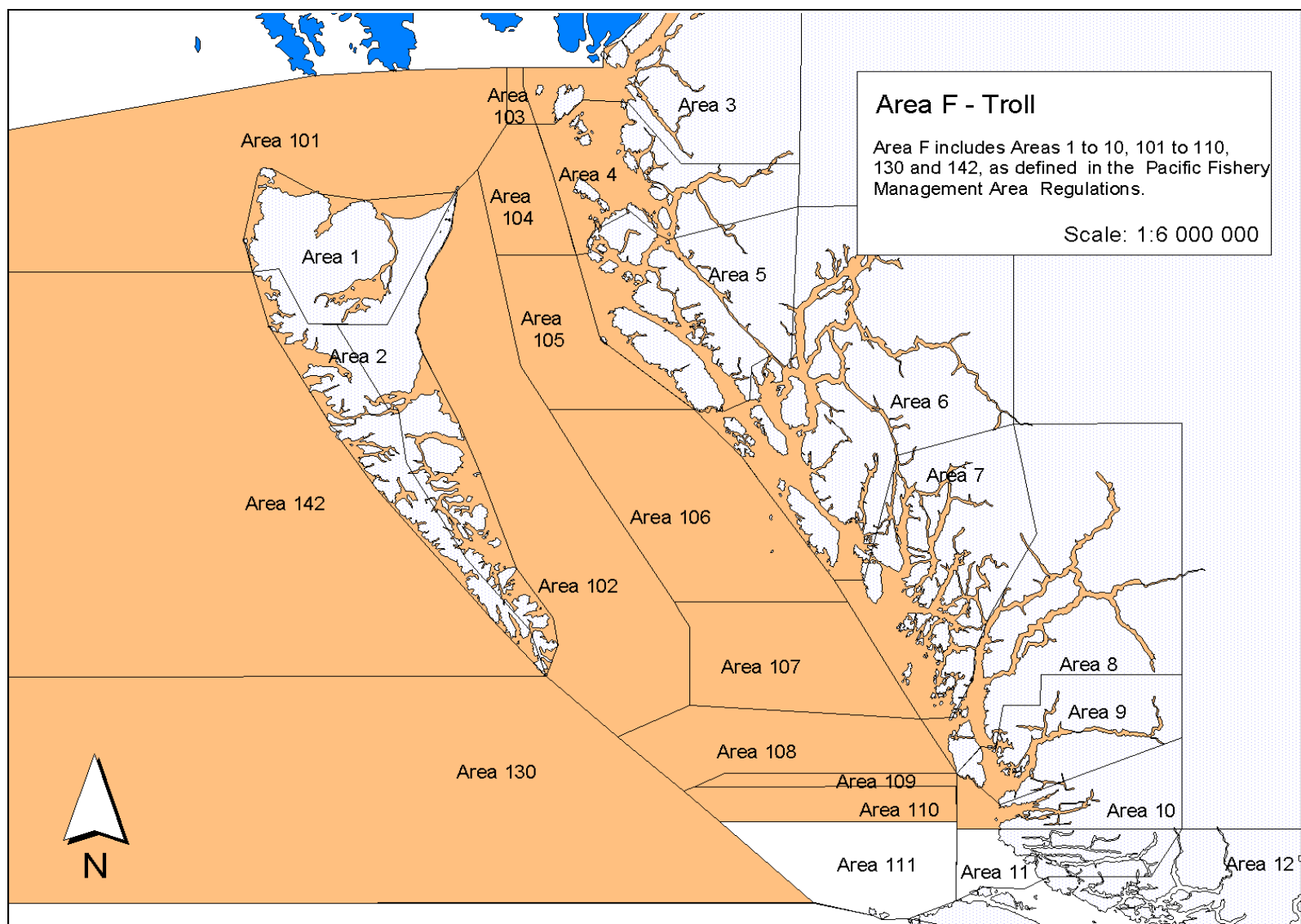
| Pacific Salmon Fishing Area | Gear | Corresponding Pacific Fisheries Management Areas (PFMA) |
|-----------------------------|----------|---|
| Salmon Area A | Seine | Areas 1 to 10, Subarea 101-7 |
| Salmon Area B | Seine | Areas 11 to 29 and 121 |
| Salmon Area C | Gill net | Areas 1 to 10, Subarea 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 PFMAs please see Appendix 4.

APPENDIX 4: MAPS OF NORTHERN BC COMMERCIAL LICENCE AREAS







APPENDIX 5: 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>

The IHPC membership list can also be found on the DFO website at:

<http://www.pac.dfo-mpo.gc.ca/consultation/smon/ihpc-cpip/membs-eng.html>

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ALTERNATE

Vacant

FIRST NATIONS (FOUR) MEMBERS

Vacant

Vacant

Vacant

Vacant

PROVINCE (EX-OFFICIO) (ONE) MEMBER

Vacant

APPENDIX 6: UPDATES TO THE COMMERCIAL SALMON ALLOCATION FRAMEWORK

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I INTRODUCTION AND PURPOSE

The purpose of this appendix is to outline progress related to updates to the Commercial Salmon Allocation Framework (CSAF), including:

Document progress on key work plan items for the 2019 season agreed to by the Salmon Coordinating Committee, Commercial Salmon Advisory Board and DFO;

Describe principles and guidelines for sharing arrangements, building on guidelines approved in the 2015/2016 IFMP;

Outline CSAF demonstration fishery proposals assessed through the Departments' Evaluation Framework. These may be implemented subject to a final fishing plan being approved in the area which addresses any outstanding elements highlighted and sufficient returns for commercial fishing.

2 BACKGROUND

In September 2013, as part of the Pacific Salmon Treaty Mitigation program, Fisheries and Oceans Canada started a process to obtain advice on updating the CSAF to address deficiencies raised by commercial harvesters and First Nations. The Department engaged the existing advisory processes, principally the First Nations Salmon Coordinating Committee (SCC) and the Commercial Salmon Advisory Board (CSAB), and also sought the views of other First Nations and commercial interests on possible changes to the framework. Discussions with the SCC and CSAB were completed at the end of January 2015. Updates approved are detailed in the final 2015/16 IFMP. Work to address key issues raised continue. Key items being discussed for 2019 include:

- a) Supporting local area collaboration: to improve integration and collaboration among CSAF Demonstration, commercial marine and First Nation fishers;
- b) Dual Fishing: engage in preliminary discussions regarding dual fishing for salmon, including developing draft dual fishing principles to support implementation of pilot dual fishing demonstrations in the future;
- c) Providing support to local proponents and DFO area staff in reviewing and developing existing and new CSAF demonstration fishery proposals; and
- d) Using the CSAF small group forum to explore timelines and information needs to support the 5 year review of the CSAF sharing arrangements among fleets which will take place over 2019. For further details on this work, please see section 1.6.1. Any

proposed changes will be included in the draft 2020 IFMP for feedback prior to being implemented.

The Department's broad interests in continuing to support this process are to improve the long term sustainability of Pacific wild salmon, help commercial fishery participants achieve greater economic benefit, and create more resilient commercial salmon fisheries. The Department's role has not been to propose changes to the CSAF; rather its focus has been to consider proposed changes to ensure that these were consistent with key Departmental objectives, policies, and programs.

A summary of previous work completed related to the initiative to update the CSAF is also available through the following link:

<http://www.pac.dfo-mpo.gc.ca/consultation/smon/saf-crrs/index-eng.html>.

Principles and guidelines approved through the 2015 IFMP and expanded on in 2017 are included in Section 3.0 below. No changes have been suggested for the 2019 season.

3 PRINCIPLES AND GUIDELINES FOR CALCULATING SALMON SHARES

Below are principles and guidelines intended to provide clarity on commercial sharing arrangements. They have been developed as part of the initiative to update the CSAF in collaboration with the CSAB and SCC.

Please note: these guidelines and principles may be reviewed and updated annually to ensure they remain relevant and clear. Proposed changes will be included in draft IFMPs for feedback prior to being approved. There are no changes proposed for the 2019 season.

APPROVED PRINCIPLES

For simplicity, the updates to the CSAF are organized into three categories: 1. Stabilizing commercial shares; 2. Flexibility to harvest the shares and integrated planning process; and 3. Additional elements for future discussion.

CATEGORY 1: STABILIZING COMMERCIAL SHARES

The following recommendations form the basis for the commercial allocation plan starting in 2015:

- a) Commercial salmon shares (specified as a % allocation of the allowable commercial harvest) will be assigned by species, fleet and fishery production area. Shares at the

species, fleet and fishery production area are provided in Section **Error! Reference source not found.** of the IFMP;

- b) Shares will apply for a 5 year period with a provision for a review after year 4 to determine if adjustments should be made to Area A-H sharing arrangements in subsequent years. An earlier review could be considered if circumstances warrant by majority agreement of the commercial advisory board;
- c) Sockeye equivalents will no longer be used to adjust shares on an annual basis;
- d) Licences transferred to First Nations communities for commercial purposes, from an individual relinquished commercial licence, will be based on an equal percentage allocation of the allowable commercial harvest for all licences (e.g. $1/X$ where X = total licences per fleet) in that commercial licence area (i.e. Areas A to H). Please note that licence shares may change over time due to changes in fleet size (e.g. licence retirements, stacking) or updates to the A-H sharing arrangements outlined in the commercial salmon allocation plan based on the periodic review (i.e. for the 2019 season).
- e) A central, common tracking system developed to provide an open and transparent annual accounting of all commercial A to H licences/allocations and First Nation economic fishery allocations by each First Nations economic fishery.
- f) In addition to the 22 fishery production areas that existed pre-2015, three new areas have been added, as of 2015, to better define sharing arrangements for troll fisheries limited by the Pacific Salmon Treaty including the WCVI Aggregate Abundance Based Management (AABM) Chinook, Northern BC AABM Chinook and the AB-line Pink troll fisheries.
- g) Sharing arrangements in the commercial salmon allocation plan are not fixed entitlements. Although best efforts will be made to achieve fishery production area target allocations over the course of the season, no guarantees are offered that allocations will actually be achieved in any given year. The achievement of commercial allocations will depend upon the ability to fish selectively and the conservation needs of the resource. In the event that allocations are not achieved over the course of the season, no compensatory adjustments (i.e. overage/underage provisions) will be made to future allocations.
- h) Fishing opportunities for all commercial fisheries, including First Nations commercial fisheries, targeting the same fishery management unit should be planned to provide reasonable opportunities to harvest shares. No fishery should be allowed such that its operation puts another fleet out of the water (e.g. using a disproportionate amount of bi-

catch to target share or using insufficient effort such that it takes an unreasonable amount of time to achieve weekly target). Post season reviews will address whether fisheries adjustments may be required in future years to address situations where allocations are not achieved.

- i) In the event of extenuating circumstances (e.g. when fisheries are opened until further notice after escapement objectives are met in a terminal fishery), commercial sharing arrangements may be set aside and commercial opportunities will focus on harvesting surplus salmon. These situations will be discussed at local processes where possible to coordinate fishing plans.

Further considerations on Stabilizing Commercial Shares

In addition to the three additional production areas which were approved starting in 2015, the SCC recommended adding an additional fishery production area for a total of 26. This 26th fishery production area would result by dividing the Fraser River Chum from the southern inside Chum production area. This additional production area was not approved, however may be considered in the future pending additional discussion.

It is expected that annual post-season reviews will be conducted to consider how well the approved allocation arrangements have been implemented in commercial fisheries that season.

CATEGORY 2: FLEXIBILITY TO HARVEST SHARES AND INTEGRATED PLANNING PROCESS

Both the CSAB and the SCC are seeking greater flexibility to harvest the shares that are assigned at the fishery production area level and/or are associated with voluntarily relinquished commercial licences transferred to First Nations.

The following principles and operational guidelines form the basis for the incremental testing of flexibilities to harvest shares which started in 2016 informed through the collaborative advisory process (CSAF small group, which includes participants of from the SCC, CSAB and DFO) and a Departmental evaluation framework (these are described in more detail under “further considerations on flexibilities” below). No changes have been recommended for the 2019 season.

- a) Greater flexibility, such as fishing location and methods, should be provided to harvest the shares; however, ‘one size does not fit all’ and each gear type through its area harvest committee or First Nations economic fishery should determine the best approach to harvest their shares;

- b) First Nations that have Area A-H licences may continue to fish those licences in the current A-H fisheries or they may choose to transfer the harvest share associated with those licences to a First Nation economic fishery. Under the SCC proposal, any First Nations economic fishery would have to be managed in coordination with other fisheries and would require approval from the Department (including proposed fishing method, location and time);
- c) A revised collaborative process will be required to coordinate the collective interests of the A-H fisheries and First Nations economic fisheries in order to produce integrated fishing plans. This could also include more local harvest planning processes as required;
- d) In-season transfers of shares among and between A-H and First Nation economic fisheries will be considered. These arrangements will be subject to operational guidelines for pre-season and in-season transfers (see the current Guidelines for Temporary Commercial Salmon Share Transfers, Section **Error! Reference source not found.**);
- e) Transfers between fisheries, including marine and inland areas, must account for similar stocks/species, as well as, any management adjustments that may need to be taken into consideration for transfers to inland areas;
- f) Bycatch and stocks of concern (i.e. non-targeted species that limit target species access) will not be formally allocated at this time. Available impacts must be shared between all commercial fisheries, including First Nation economic fisheries, in the development of operational plans to allow every fishery reasonable access to its target species. Operational plans should be discussed annually through a collaborative process among all commercial fishery participants, including First Nations economic interests. The use of bycatch will require more discussion to further clarify how bycatch is best used under different scenarios;
- g) There will be a requirement to have accurate, timely and accessible fisheries data, such that there is sufficient information for all Pacific salmon fisheries to be managed sustainably and to meet other reporting obligations and objectives; and
- h) Common standards and approach will be used for evaluating and approving flexibilities to harvest shares whether these are Area A-H or First Nations economic fisheries. Operational issues about how to operationalize harvest flexibilities in different areas has underscored the need for greater clarity and transparency in applying any of the proposed changes.

- i) Assessment fisheries should take into consideration existing sharing arrangements between A to H and First Nations commercial fisheries; opportunities for assessment fisheries should be proportionate with existing shares or as agreed to by the relevant parties.

Further Considerations on Flexibility to Harvest Shares:

The SCC proposal envisaged that any First Nations that have Area A-H licence(s) may continue to fish those licence(s) in A-H fisheries or choose to transfer the harvest share associated with that licence to a First Nation economic fishery. This could result in First Nation economic fisheries in marine or inland areas based on shares converted from A-H fisheries. The relevant First Nations economic fishery (including any proposed fishing methods, times and locations) would need approval from the Department. Any First Nations fishery would have to be managed in coordination with other commercial fisheries (including A-H), on the same species and would have to meet Department requirements for stock assessment, catch monitoring, compliance and enforcement.

Similarly, the CSAB suggested that fleets in the A-H fisheries should decide how to best harvest their shares through harvest committee deliberations and thus endorsed the view that “one size does not fit all” when it came to how fleets may choose to harvest their shares.

The Department will adopt an incremental approach to implementation of harvesting flexibilities starting in 2016, informed through a collaborative advisory process and a common evaluation framework to review proposals submitted.

Collaborative Process

An inclusive commercial advisory process including commercial representatives from the A – H fisheries and First Nations economic fisheries will be required for the Department supporting implementation of any proposed flexibilities. Since 2015, a small working group comprised of CSAB, SCC and DFO representatives has been effective at exploring opportunities for collaboration and improving understanding of various perspectives, while communicating with each host organization to ensure consistency and accuracy of feedback included. The purpose of this CSAF small working group is as a forum to discuss and make recommendations for the Department’s consideration on implementation of the revised allocation framework (to be reviewed in 2019 for 2020 implementation), the operational details associated with proposed flexibilities and how to prioritize testing of potential harvesting flexibilities including: reviewing and assessing proposals pre-season and considering the results of pilots against evaluation criteria post-season. The Department will continue to work with the existing CSAB

and SCC to determine next steps, other priority items for discussion, relevant for this forum and support the use of the CSAF small group process for collaborative discussions.

Local Fishing Area Discussions:

Discussions on commercial harvest plans including which group fishes first, sequencing of opportunities, amounts of fishing time and other fishing plan parameters should be discussed among fishery participants at planning processes suitable to the scale of the fishery (e.g. local area) and included within the IFMP as required. The Department will continue to consider advice and recommendations on proposed fishing plans from the local First Nations, Area Harvest Committees, and other groups to promote integrated fishery planning.

Local management committees are encouraged to promote effective communication, consultation and support increased collaboration and integration of commercial fisheries. Structure and protocol for any local committees should promote effective management through open, transparent and collaborative process to develop and implement commercial fishing plans. Existing processes will be used whenever possible/practical to support pre-season planning, in-season management and post-season review. Operational plans should be guided by the principles and guidelines outlined in this document and, where possible, identify clear decision guidelines that address the potential fishery configurations and effort associated with a range of potential commercial harvest scenarios.

Pre-agreed methods for calculating in-season harvest amounts associated with commercial allocations for all groups should be identified in local area fishing plans and/or the IFMP where appropriate and communicated pre-season so all commercial participants have clarity on sharing arrangements. Methods should account for all commercial allocations including A to H fleets, FN demonstration, economic opportunities and harvest agreement fisheries.

Approaches for in-season communication (e.g. integrated conference calls, Fisheries Notices, etc.) of fishing opportunities, sharing arrangements and catch to date should be provided for discussion with First Nations and stakeholders.

Evaluation Framework

In 2016, DFO in collaboration with the SCC and CSAB developed an Evaluation Framework (E.F.) supported by all parties. The E.F. outlines the objectives and criteria that are used to assess CSAF proposals for flexible harvest arrangements for all commercial/economic fisheries. The E.F. may be reviewed and updated annually based on post-season discussions. There are no proposed changes for 2019.

CATEGORY 3: ADDITIONAL ELEMENTS FOR DISCUSSION:

In addition to commercial allocation arrangements within Section 12.4 of the IFMP and those listed above in Category 2: *Flexibility to Harvest Shares*, there are a number of additional elements in the SCC and CSAB proposals where differences remain. These elements may have policy implications and require additional discussion, collaboration and analysis by commercial harvesters, First Nations and the Department.

Details are included within the original proposals received by both the SCC and CSAB in 2015 which can be reviewed at:

<http://www.pac.dfo-mpo.gc.ca/consultation/smon/saf-crrs/index-eng.html>

Further considerations on additional elements:

The following areas have been highlighted by the SCC and CSAB where there was no agreement concerning the proposed changes.

There was also a difference of views on the approach to dual fishing (the retention of fish for food, social and ceremonial purposes during a commercial fishery under agreed circumstances). The SCC has proposed that First Nations economic fisheries be permitted to have dual fishing whereas the CSAB has raised concerns about fairness of this approach to the A to H fishery and its potential conservation issues on stocks of concern. The Department has initiated discussions with the SCC on draft dual fishing principles, intended to guide under what circumstances dual fishing pilots may be considered in the future.

The CSAB has indicated concerns with the guidelines for the conversion of an existing marine A-H commercial licence (not including licences held in DFO inventory) into a First Nation economic fishery allocation (guidelines the CSAB would like to be consider prior to approval of conversions include timing (e.g. pre-season vs. in-season), notification, and transfer/tracking requirements. Please see the transfer guidelines in section **Error! Reference source not found.** f or more details.

In addition, there are some proposed changes that are principally matters best handled between DFO and the relevant group. These matters will require further discussion with the Department.

The SCC has proposed a separate management body/process to manage First Nations salmon shares including a proposed body (a 'First Nations' licensing board') to administer use of shares associated with relinquished commercial salmon licences from the DFO inventory or licences otherwise set aside for First Nations use. The Department has not initiated development of a

separate board; however DFO would be interested in hearing any principles for the distribution of licences which the SCC may suggest for consideration.

The CSAB had indicated interest in reviewing commercial licencing policy, however initial discussions highlighted the diversity of views and priorities on potential areas of work within the CSAB.

4 CSAF DEMONSTRATION FISHERY PROPOSALS FOR FLEXIBLE HARVEST ARRANGEMENTS

As part of implementing changes to the CSAF, the Department adopted an incremental approach to providing increased flexibility to harvest salmon shares starting in 2016. Each proposal is assessed by the same Evaluation Framework which defines the principles and operational guidelines required by DFO to ensure appropriate implementation of proposed harvesting flexibilities. The Department's Evaluation Framework was developed to assess proposals with input from the SCC and CSAB. There continues to be agreement from DFO, the SCC and CSAB to continue using the Evaluation Framework with no updates to the principles, objectives and criteria currently in use.

Below is a table outlining demonstration fishery proposals that were reviewed using the Department's Evaluation Framework. New proposals for 2019 included within this final IFMP have been highlighted in bold font. For details on proposals or fishing plans for CSAF demonstrations which were included in the final IFMP and implemented in previous years, please contact the relevant resource manager in the area or Ge Li (Ge.Li@dfo-mpo.gc.ca).

Approved CSAF demonstration fisheries listed below will be implemented contingent on any remaining considerations being resolved with a fishing plan approved in the local area and sufficient returns for commercial harvest. The Department will be discussing operational details with First Nations and stakeholders in each demonstration fishery proposal area to develop fishing plans. Should operational considerations not be resolved or sufficient abundance not materialize, the demonstration fishery will not occur in the coming season.

Any demonstration fishery that does proceed in 2019 will be reviewed as part of the post-season review process. Below is a table which outlines the section and related demonstration fishery project included within this appendix.

| Year Approved | Salmon Coordinating Committee | Commercial Salmon Advisory Board |
|---------------|-------------------------------|----------------------------------|
| | <u>Northern B.C.</u> | <u>Northern B.C.</u> |

| Year Approved | Salmon Coordinating Committee | Commercial Salmon Advisory Board |
|----------------------|--|---|
| 2016 | Central Coast hatchery Chum (Heiltsuk/Kitasoo) 4.1 and 4.2 | Central Coast Coho (Area F) 4.10 |
| 2017 | Central Coast Chum and | |
| 2018 | Central Coast Chinook (Nuxalk) 4.3 | |
| 2016 | Nass River Sockeye (2 proposals from Nisga'a Lisims Government and Gitanyow) 4.4 and 4.5 | |
| 2016 | Skeena Sockeye - Area 4 (NCSFNSS) 4.6 | |
| 2018 | Skeena Pink – Area 3 / 4 (NCSFNSS) 4.7 | |
| 2017 | Haida Gwaii Coho (CHN) 4.8 | |
| 2018 | Coho bycatch within existing Pink ESSR (Wet'suwet'en) 4.9 | |
| | <u>Southern B.C.</u> | <u>Southern B.C.</u> |
| 2016 | Cowichan Chum (Cowichan Tribes) 4.11 | Fraser River Sockeye, Pink, Chum - alternate gear (Area E) 4.14 |
| 2017 | Goldstream Chum (Saanich Tribes) 4.12 | Qualicum/Puntledge (Chum Area D) 4.15 |
| 2017 | | Area 12 – 9 Encounter study (Area D) 4.16 |
| 2017 | | Mainland/Inlet Pink and Chum (Area H) 4.17 |
| 2018 | Bute Inlet Chum (Homalco First Nation) 4.13 | Bute Inlet Chum (Area H) 4.18; |
| 2018 | | Bute Inlet Chum (Area D) 4.19 |

First Nations requests for access to salmon allocations associated with licences in the Departmental licence inventory will be reviewed internally by the Department and outcomes will be confirmed First Nations proponents. Demonstration fisheries that do not receive requested allocations will not proceed.

In an effort to reduce the length of the CSAF section in the IFMP, CSAF proposals have been condensed to only reflect key components and any significant changes proposed by the proponent for the coming season. As per previous years, a CSAF demonstration fishery may

only operate with a final fishing plan being approved in the area and sufficient returns available.

Full versions of the original proposals or final fishing plans is available upon request to Ge.Li@dfo-mpo.gc.ca or [the local fishery manager](#).

4.1 <NEW FOR 2019>

4.1.1 TERMINAL CHUM (K'OMOKS FIRST NATION)

| | |
|--|---|
| | Terminal Chum |
| Included in Final IFMP | 2019 |
| Status (Implemented/Developing) | Developing Fishing Plan |
| Allocation* | 13% of Southern Inside Chum. |
| Location | A portion of 14 (TBC) |
| Size | 1- 2 seines or 3-5 gillnet vessels. Final number based on the number of fish to be harvested. |
| Catch Monitoring (Key Elements) | TBC – consistent with commercial marine fisheries |
| Communication | A K'omoks Tribes Fisheries demonstration fishery manager will be identified and will be responsible for the coordination of the K'omoks fishery and will be the primary contact for all communication with DFO and fishers. |
| Further Information | Kent Spencer – Aboriginal Affairs Advisor |

*Shares change annually based the respective gear shares for the production Area and licences in DFO Inventory. In 2018 shares were based on 24 Area B, 16 Area D, 68 Area E, and 19 Area H licences in the DFO Inventory.

4.1.2 NANAMO TERMINAL CHUM (SNUNEYMUXW FIRST NATION)

| | |
|--|--|
| | Nanaimo Terminal Chum |
| Included in Final IFMP | 2019 |
| Status (Implemented/Developing) | Developing Fishing Plan |
| Allocation* | 13% of Southern Inside Chum. |
| Location | Nanaimo River Approach Areas/Portions of Departure Bay (TBC) |

| | |
|--|---|
| Size | 1- 2 seines or 3-5 gillnet vessels. Final number based on the number of fish to be harvested. (TBC) |
| Catch Monitoring (Key Elements) | TBC – consistent with commercial marine fisheries |
| Communication | A Snuneymuxw Tribes Fisheries demonstration fishery manager will be identified and will be responsible for the coordination of the Snuneymuxw fishery and will be the primary contact for all communication with DFO and fishers. |
| Further Information | Terry Palfrey – DFO Fisheries Manager/ Kent Spencer – Aboriginal Affairs Advisor |

*Shares change annually based the respective gear shares for the production Area and licences in DFO Inventory. In 2018 shares were based on 24 Area B, 16 Area D, 68 Area E, and 19 Area H licences in the DFO Inventory.

4.1.3 MAINLAND INLET PINK & CHUM FISHERY: AREA 12 BROUGHTON ARCHIPELAGO (AREA H)

| | |
|---|--|
| | Mainland Inlet Pink & Chum – Area 12 Broughton Archipelago (Area H) |
| Included in Final IFMP | 2019 |
| Status (Implemented/ Developing) | Developing fishing plan |
| Allocation | Existing share of Southern Inside Chum as per the CSAF. |
| Location | Sub-Areas 12 -26 to 12-30 and 12-35 to 12-42 (TBC) |
| Size | 5 vessels. Final number based on the number of fish to be harvested. |
| Catch Monitoring (Key Elements) | Start, end, pause, cancel and daily catch reporting; logbook or E-log entry for each day of fishing; monitoring program to be determined. |
| Communication | Communication protocols with other fisheries and participants and DFO would be coordinated with the Resource Manager. The same type of program that occurs for southern inside Chum is envisioned. |
| Further Information | Christine Bukta – DFO Fisheries Manager |

4.1.4 METLAKATLA FIRST NATION

| | |
|-------------------------------|----------------|
| | Skeena Sockeye |
| Included in Final IFMP | 2019 |

| | |
|--|---|
| Status (Implemented/Developing) | Developing final fishing plan |
| Allocation* | 0.999% of the Total Commercial Allowable Catch (TCAC) harvest of Skeena Sockeye in Area 4. This percentage is based on a 1/5 share of 1/3rd of the 14.9% of Skeena Sockeye allocation associated with the 88 Area C and 19 Area A licences in the DFO inventory (Addison & English, 2017 Tsimshian Fishery Pilot Proposal). |
| Location | Area 4-9, 4-12 and 4-15 and freshwater site (Aberdeen Boat Launch) (TBC) |
| Size | 6-12 Vessels. TBC |
| Catch Monitoring (Key Elements) | At-sea patrols; by-vehicle patrols; hail in/out; mandatory fisher logs; landing sites; 100% dockside validation |
| Communication | Metlakatla Fisheries Manager will work with other Skeena First Nations, DFO and CSAB through a Local Harvest Planning Committee (LHPC) to discuss and coordinate fishing plans. |
| Further Information | Jen Gordon – DFO Fisheries Manager |

*Shares change annually based the respective gear shares for the production Area and licences held in DFO Inventory for use by First Nations. In 2018 shares are based on 88 Area C and 19 Area A licences held in the DFO Inventory.

4.2 KITASOO FIRST NATION

| | |
|---------------------------------|--|
| | Trout Bay Chum (Kitasoo First Nation) |
| Included in Final IFMP | 2016 |
| Status (Implemented/Developing) | 2016: insufficient returns 2017: insufficient returns 2018: insufficient returns |
| Allocation* | 15.72% of Chum |
| Location | 7-5 |
| Size | 1 seine or 2- 6 gillnet vessels. Final number based on the number of fish to be harvested. |
| Catch Monitoring (Key Elements) | At-sea patrols by a member of the Kitasoo Co-mgt program and/or DFO; mandatory landing site (Trout Bay dock); 100% dock side enumeration |
| Communication | Kitasoo Fisheries Program will be responsible for all pre-season, in-season and post-season communications with DFO and participating FNs. |
| Further Information | Brad Koroluk – DFO Fisheries Manager |

*Shares change annually based the respective gear shares for the production Area and licences held in DFO Inventory for use by First Nations. In 2018 shares are based on 88 Area C and 19 Area A licences held in the DFO Inventory.

4.3 MCLOUGHLIN BAY CHUM (HEILTSUK FIRST NATION)

| | |
|--|---|
| | McLoughlin Bay Chum (Heiltsuk First Nation) |
| Included in Final IFMP | 2016 |
| Status (Implemented/Developing) | 2016: implemented 2017: insufficient returns 2018: insufficient returns |
| Allocation* | 15.72% of Chum |
| Location | 7-17 |
| Size | 1 – 2 seines or 3 - 8 gillnet vessels. Final number based on the number of fish to be harvested. |
| Catch Monitoring (Key Elements) | At-sea patrols by a member of the Heiltsuk Co-mgt program and/or DFO; mandatory landing site (McLoughlin Bay – Heiltsuk fish plant); 100% dock side enumeration |
| Communication | Heiltsuk Fisheries Program will be responsible for all pre-season, in-season and post-season communications with DFO and participating FNs. |
| Further Information | Brad Koroluk – DFO Fisheries Manager |

*Shares change annually based the respective gear shares for the production Area and licences held in DFO Inventory for use by First Nations. In 2018 shares are based on 88 Area C and 19 Area A licences held in the DFO Inventory.

4.4 BELLA COOLA CHUM AND CHINOOK (NUXALK NATION)

| | |
|--|--|
| | Bella Coola: Terminal Chum and Chinook (Nuxalk Nation) |
| Included in Final IFMP | 2017 |
| Status (Implemented/Developing) | 2017: Implemented for Chum 2018: Implemented for Chum (addition of Chinook in proposal) |
| Allocation* | 15.72% of Chum and 14.06% of Chinook. |
| Location | 8-10, Portions of 8-11 and 8-12 and 8-15 |
| Size | 2-3 Vessels. Final number based on the number of fish to be harvested. |
| Catch Monitoring (Key Elements) | Single designated mandatory landing site; monitor will be the Nuxalk Coastal Guardian Watchmen; Level of coverage – 50% on water; 100% dock side enumeration |
| Communication | A representative/manager of the Nuxalk Stewardship Office will be assigned as the demonstration fishery manager and will be responsible for the coordination of the Nuxalk fishery |

| | |
|----------------------------|--------------------------------------|
| Further Information | Brad Koroluk – DFO Fisheries Manager |
|----------------------------|--------------------------------------|

*Shares change annually based the respective gear shares for the production Area and licences held in DFO Inventory for use by First Nations. In 2018 shares are based on 88 Area C and 19 Area A licences held in the DFO Inventory.

4.5 NASS RIVER SOCKEYE (NISGA'A LISIMS GOVERNMENT)

| | |
|--|--|
| | Nass River Sockeye (Nisga'a Lisims Government) |
| Included in Final IFMP | 2016 |
| Status (Implemented/Developing) | 2016: insufficient returns 2017: insufficient returns 2018: insufficient returns |
| Allocation* | 8.68% of the combined Area A and C commercial TAC. |
| Location | 3 |
| Size | Within existing Nisga'a Treaty fishery**, with gear types including marine gillnets, river gillnets, and fish wheels |
| Catch Monitoring (Key Elements) | 100% catch monitoring and validation at either a marine packer or the Nisga'a Processing Plant in Gitlakdamiks; all Nisga'a fisheries are sampled for marks; all non-target salmon caught (released and kept) accounted for in all Nisga'a salmon fisheries |
| Communication | NFWD managers will participate in weekly conference calls with DFO throughout the Sockeye fishing season and will continue to provide in-season and post-season Nass escapement and run size information needed to manage Nass Area Sockeye and other salmon species like in other |
| Further Information | Jen Gordon – DFO Fisheries Manager |

*Shares change annually based the respective gear shares for the production Area and licences held in DFO Inventory for use by First Nations. In 2018 shares are based on 88 Area C and 19 Area A licences held in the DFO Inventory.

**Please see Section 10.4 of the Northern IFMP for further details on the Nisga'a Treaty fisheries

4.6 NASS RIVER SOCKEYE (GITANYOW FISHERIES AUTHORITY)

| | |
|--|--|
| | Nass River Sockeye (Gitanyow Fisheries Authority) |
| Included in Final IFMP | 2016 |
| Status (Implemented/Developing) | 2016: insufficient returns 2017: insufficient returns 2018: insufficient returns |
| Allocation* | 6.30% of the combined Area A and C commercial TAC. |
| Location | 3 |

| | |
|--|--|
| Size | To be finalized prior to the fishery and based on available allocation |
| Catch Monitoring (Key Elements) | Combination of fishing site and landing site monitoring will take place in-season. To be confirmed with DFO area staff. |
| Communication | GFA representatives will participate in the Local Harvest Planning Committee (LHPC) to discuss and coordinate fishing plans with other Nass Nations, CSAB and DFO. GFA will also participate at in-season weekly conference calls and any post-season review. |
| Proposed Changes Submitted for 2019 | Annual overage/underage provisions as included in the proposal will not be implemented. However, continued discussions on in-season flexibility to support this demonstration fishery achieving shares continues. Any proposed changes will be discussed with all relevant commercial and First Nations fisheries prior to implementation. |
| Further Information | Jen Gordon – DFO Fisheries Manager |

*Shares change annually based the respective gear shares for the production Area and licences held in DFO Inventory for use by First Nations. In 2018 shares are based on 88 Area C and 19 Area A licences held in the DFO Inventory.

4.7 SKEENA SOCKEYE (NORTH COAST SKEENA FIRST NATION STEWARDSHIP SOCIETY (NCSFNSS))

| | |
|---|---|
| | Skeena Sockeye (NCSFNSS) |
| Included in Final IFMP | 2016 |
| Status (Implemented/ Developing) | 2016: Implemented 2017: Insufficient returns 2018: Implemented |
| Allocation* | 3.995% of the allowable commercial harvest of Skeena Sockeye which has been recently based on actual weekly commercial catches of Sockeye in Area 4. This percentage is based on sharing of the 1/3 share of the 14.99% of Skeena Sockeye allocation associated with the 88 Area C and 19 Area A licences in the DFO Inventory between the Metlakatla First Nation and NCSFNSS proposals. |
| Location | Area 4-12 and 4-15 |
| Size | 1-3 Vessels. Final number based on the number of fish to be harvested and participating First Nations. |
| Catch Monitoring (Key Elements) | At-sea patrols; mandatory fisher logs; landing sites; 100% dockside validation |
| Communication | NCSFNSS will work with other Skeena First Nations, DFO and CSAB through the Local Harvest Planning Committee (LHPC) to discuss and coordinate fishing plans. |

| | |
|----------------------------|------------------------------------|
| Further Information | Jen Gordon – DFO Fisheries Manager |
|----------------------------|------------------------------------|

*Shares change annually based the respective gear shares for the production Area and licences held in DFO Inventory for use by First Nations. In 2018 shares are based on 88 Area C and 19 Area A licences held in the DFO Inventory.

4.8 SKEENA PINK (NORTH COAST SKEENA FIRST NATION STEWARDSHIP SOCIETY (NCSFNSS))

| | |
|--|--|
| | Nass Pink (NCSFNSS) |
| Included in Final IFMP | 2018 |
| Status (Implemented/Developing) | 2018: Not Implemented |
| Allocation* | 13.41% of the allowable commercial harvest of Area 3 Pink salmon. |
| Location | Sub-areas in Areas 3 where commercial fisheries are permitted for Pink salmon |
| Size | 1-2 Vessels. Final number based on the number of fish to be harvested and participating First Nations. |
| Catch Monitoring (Key Elements) | At-sea patrols; mandatory fisher logs; landing sites; 100% dockside validation |
| Communication | NCSFNSS will work with other Skeena First Nations, DFO and CSAB through the Local Harvest Planning Committee (LHPC) to discuss and coordinate fishing plans. |
| Further Information | Jen Gordon – DFO Fisheries Manager |

*Shares change annually based the respective gear shares for the production Area and licences held in DFO Inventory for use by First Nations. In 2018 shares are based on 88 Area C and 19 Area A licences held in the DFO Inventory.

4.9 HAIDA GWAI COHO (COUNCIL OF THE HAIDA NATION (CHN))

| | |
|--|--|
| | Haida Gwaii Coho Troll (CHN) |
| Included in Final IFMP | 2017 |
| Status (Implemented/Developing) | 2017: Implemented (not fished) 2018: Available for Implementation (did not fish) |
| Allocation* | 3.1-10% of North Coast commercial Coho catch based on the respective gear shares in the North Coast Coho production area |
| Location | In Area 1 (North Coast of Haida Gwaii) DFO fishing management areas 1-3, 1-5 and a portion of 101-7 east of Klashwun Point (Shag Rock) to the eastern boundary of Rose Spit. In Area 2W (West Coast Haida Gwaii) DFO fishing management areas 2-63, 2-64 & 2-68 (West Skidegate Inlet and Cartwright Sound). |

| | |
|--|--|
| Size | Vessels will be limited to boats 17 feet to 26 feet long. Limit on the total number of vessels not anticipated. Expect participation of 20-30 total vessels. |
| Catch Monitoring (Key Elements) | At-sea patrols and validation of all offloads at designated landing sites; 100% dockside validation |
| Communication | A Haida Fisheries demonstration fishery manager will be identified and will be responsible for the coordination of the Haida fishery and will be the primary contact for all communication with DFO and fishers. |
| Further Information | Peter Katinic – DFO Fisheries Manager |

*The Haida share depends on the allocation of the 21 Area F licences with no Chinook quota in the DFO Inventory.

4.10 CENTRAL COAST COHO (AREA F)

| | |
|--|--|
| | Central Coast Coho (Area F) |
| Included in Final IFMP | 2016 |
| Status (Implemented/Developing) | 2016: Implemented 2017: Implemented 2018: Implemented |
| Allocation* | Limited effort, risk based fishery. |
| Location | Area 6, 7, 8 |
| Size | As in previous years, approval for 4, 3 and 2 vessels in Areas 6, 7, and 8 respectively in consideration of increased potential to encounter stocks of concern in areas further south. |
| Catch Monitoring (Key Elements) | Limited number of catch validation/landing sites; 100% monitoring; logbook or e-log entry for each day of fishing |
| Communication | Communication in-season would be via the local harvest committee reps established pre-season. |
| Further Information | Peter Katinic – DFO Fisheries Manager |

4.11 BULKLEY RIVER COHO (WET'SUWET'SEN FIRST NATION)

| | |
|--|--|
| | Bulkley River Coho (Wet'suwet'en First Nation) |
| Included in Final IFMP | 2018 |
| Status (Implemented/Developing) | 2018: Insufficient returns |

| | |
|--|---|
| Allocation* | ~1000-2000 pieces. Coho are not managed to a TAC in Area A&C fisheries, but are retained as bycatch when abundance permits. The Bulkley River Coho demo will follow similar guidelines. |
| Location | 4 |
| Size | Within existing Wet'suwet'en Moricetown Canyon Pink ESSR fishery, with gear types including beach seine and dip net. |
| Catch Monitoring (Key Elements) | 100% catch validation at designated landing sites; all non-target salmon caught (released and kept) accounted for by fishing site. |
| Communication | Wet'suwet'en managers will provide weekly in-season updates on numbers of each species caught, sold, retained, and released by fishing site. |
| Further Information | Jennifer Gordon – DFO Fisheries Manager |

*Shares change annually based the respective gear shares for the production Area and licences in DFO Inventory. In 2018 shares were based on 24 Area B, 16 Area D, 68 Area E, and 19 Area H licences in the DFO Inventory.

4.12 COWICHAN CHUM (COWICHAN TRIBES)

| | |
|--|---|
| | Cowichan Terminal Chum (Cowichan Tribes) |
| Included in Final IFMP | 2016 |
| Status (Implemented/Developing) | 2016: Implemented 2017: Implemented 2018: Implemented |
| Allocation* | 13% of Southern Inside Chum. |
| Location | A portion of 18-6, a portion of 18-7, a portion of 18-8. |
| Size | 1- 2 seines or 3-5 gillnet vessels. Final number based on the number of fish to be harvested. |
| Catch Monitoring (Key Elements) | At-sea observer; mandatory landing site; 100% at-sea coverage; monitoring plan, in-season reporting |
| Communication | A Cowichan Tribes Fisheries demonstration fishery manager will be identified and will be responsible for the coordination of the Cowichan fishery and will be the primary contact for all communication with DFO and fishers. |
| Further Information | Terry Palfrey – DFO Fisheries Manager |

*Shares change annually based the respective gear shares for the production Area and licences in DFO Inventory. In 2018 shares were based on 24 Area B, 16 Area D, 68 Area E, and 19 Area H licences in the DFO Inventory.

4.13 GOLDSTREAM CHUM (SAANICH TRIBES)

| | |
|--|---|
| | Goldstream Chum (Saanich Tribes) |
| Included in Final IFMP | 2016 |
| Status (Implemented/Developing) | 2017: Insufficient returns 2018: Implemented |
| Allocation* | 13% of Southern Inside Chum. |
| Location | A portion of 19-8, subareas 19-10, 19-11, and a portion of subarea 19-12 |
| Size | 1- 2 seines or 3-5 gillnet vessels. Final number based on the number of fish to be harvested. |
| Catch Monitoring (Key Elements) | At-sea patrols; mandatory landing site; 100% dock side monitoring; monitoring plan, in-season reporting |
| Communication | A Saanich Tribes Fisheries demonstration fishery manager will be identified and will be responsible for the coordination of the Saanich fishery and will be the primary contact for all communication with DFO and fishers. |
| Further Information | Terry Palfrey – DFO Fisheries Manager |

*Shares change annually based the respective gear shares for the production Area and licences in DFO Inventory. In 2018 shares were based on 24 Area B, 16 Area D, 68 Area E, and 19 Area H licences in the DFO Inventory.

4.14 BUTE INLET CHUM (HOMALCO FIRST NATION)

| | |
|--|--|
| | Bute Inlet Chum (Homalco First Nation) |
| Included in Final IFMP | 2018 |
| Status (Implemented/Developing) | 2018: insufficient returns; final fishing plan pending |
| Allocation* | 13 % of Southern inside Chum |
| Location | 13-21 |
| Size | 3-5 gillnet vessels. Final number based on the number of fish to be harvested. |
| Catch Monitoring (Key Elements) | To be determined in discussion with DFO |
| Communication | A Homalco First Nations representative will be identified and will be responsible for the coordination of the Bute Inlet fishery and will be the primary contact for all communication with DFO and fishers. |

| | |
|----------------------------|---|
| Further Information | Kent Spencer – DFO Aboriginal Affairs Advisor |
|----------------------------|---|

*Shares change annually based the respective gear shares for the production Area and licences in DFO Inventory. In 2018 shares are based on 24 Area B, 16 Area D, 68 Area E, and 19 Area H licences in the DFO Inventory.

4.15 SOCKEYE, PINK AND CHUM ALTERNATE GEAR (AREA E)

| | |
|--|---|
| | Fraser River Sockeye, Pink and Chum Alternate Gear (Area E) |
| Included in Final IFMP | 2016 |
| Status (Implemented/Developing) | 2016/2017: not implemented, insufficient interest 2018: not implemented, final fishing plan pending |
| Allocation | Existing share of Area E Fraser River Sockeye, Pink and Chum as per the CSAF. |
| Location | Fraser River main stem |
| Size | Up to 15 shallow seines to harvest Pinks, Sockeye, Chum. 1-3 beach seine for Chum. The numbers of shallow seines and the beach seines would be limited by the uncaught Area E allocation. |
| Catch Monitoring (Key Elements) | Dock side monitoring for the shallow seines and on grounds monitor for the beach seines; 3 landing sites; 25% roving observer coverage |
| Communication | Area E would appoint a spokesperson for communication with other fisheries and DFO. It is expected that there would be at least weekly in-season communications with DFO and or a local harvest committee if one is struck. |
| Further Information | Barbara Mueller – DFO Fisheries Manager |

4.16 QUALICUM AND PUNTLEDGE CHUM (AREA D)

| | |
|--|---|
| | Qualicum and Puntledge Chum (Area D) |
| Included in Final IFMP | 2017 |
| Status (Implemented/Developing) | 2017: implemented 2018: insufficient returns |
| Allocation | Existing share of Southern Inside Chum as per the CSAF |
| Location | Area 14 |
| Size | 4 vessels |
| Catch Monitoring (Key Elements) | Start, end, pause, cancel and daily catch reporting; logbook or e-log entry for each day of fishing |

| | |
|----------------------------|---|
| Communication | Communication in-season would be via the Chum working group committee |
| Further Information | Ryan O'Connell – DFO Fisheries Manager |

4.17 AREA 12-9 ENCOUNTER (AREA D)

| | |
|--|---|
| | Area 12-9 Encounter Study (Area D) |
| Included in Final IFMP | 2017 |
| Status (Implemented/Developing) | 2014: Implemented 2018: Implemented |
| Allocation* | Existing share of Sockeye as per the CSAF |
| Location | Subareas 12-9, 12-10, and portion of 12-8 |
| Size | 10 to 25 vessels |
| Catch Monitoring (Key Elements) | Minimum of 20% on-board observer coverage; subject to regular Area D Gill Net licence conditions; logbook or e-log entry for each day of fishing |
| Communication | Communication in-season would be via the Fraser harvest committee |
| Additional Comments | The results for this demonstration fishery from 2014 and 2018 are under review by the Department to determine whether Subarea 12-9 may be included in the regular Area D fishing area for Fraser Sockeye in 2019. |
| Further Information | Greg Hornby – DFO Fisheries Manager |

4.18 BUTE INLET CHUM (AREA D)

| | |
|--|---|
| | Bute Inlet Chum (Area D) |
| Included in Final IFMP | 2018 |
| Status (Implemented/Developing) | 2018: insufficient returns; final fishing plan pending |
| Allocation | Existing share of Southern Inside Chum as per the CSAF. |
| Location | Areas 13-20-22 |
| Size | Limited entry fleet (4-5 vessels). Final number based on the number of fish to be harvested. |
| Catch Monitoring (Key Elements) | Start, end, pause, cancel and daily catch reporting; logbook or E-log entry for each day of fishing |

| | |
|----------------------------|--|
| Communication | Communication in-season would be via the Chum working group committee. |
| Further Information | Greg Hornby – DFO Fisheries Manager |

4.19 MAINLAND INLET PINK & CHUM – JERVIS INLET (AREA H)

| | |
|--|--|
| | Mainland Inlet Pink & Chum – Jervis Inlet (Area H) |
| Included in Final IFMP | 2017 |
| Status (Implemented/Developing) | 2017: Not implemented - low forecast; final fishing plan pending 2018: Not implemented - low forecast; final fishing plan pending |
| Allocation | Existing share of Southern Inside Chum as per the CSAF. |
| Location | Areas 12 to 19 and 28 |
| Size | 2-3 vessels. Final number based on the number of fish to be harvested. |
| Catch Monitoring (Key Elements) | Start, end, pause, cancel and daily catch reporting; dockside catch validation; logbook or E-log entry for each day of fishing |
| Communication | Communication protocols with other fisheries and participants and DFO would be coordinated with the Resource Manager. The same type of program that occurs for southern inside Chum is envisioned. |
| Further Information | Christine Bukta – DFO Fisheries Manager |

4.20 BUTE INLET CHUM (AREA H)

| | |
|--|---|
| | Area 13 – Bute Inlet Chum (Area H) |
| Included in Final IFMP | 2018 |
| Status (Implemented/Developing) | 2018: insufficient returns; final fishing plan pending |
| Allocation | Existing share of Southern Inside Chum as per the CSAF. |
| Location | Areas 13-20 and 23 |
| Size | 4 vessels |
| Catch Monitoring (Key Elements) | Start, end, pause, cancel and daily catch reporting; logbook or E-log entry for each day of fishing; monitoring program to be determined. |

| | |
|----------------------------|---|
| Communication | Communication protocols with other fisheries and participants and DFO would be coordinated with the Resource Manager. This fishery should form part of the southern inside Chum coordinated management program. |
| Further Information | Christine Bukta – DFO Fisheries Manager |

APPENDIX 7: 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 exploitation rates on Area 3 Canadian Chum stocks from historical levels, as a rebuilding measure. The harvest reductions have been achieved, with current Canadian exploitation rates averaging below 10% which is down from the average of 28% from 1982 to 1999 ([Figure 13.5-13](#)). The Area 3 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 proportion of the harvest.
- Gill nets will be closed from July 9 to July 15 in all of Area 3. (Kwinageese Sockeye closure). This provides a 7 day window where there is no potential 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 2018 management approach for Chum and all fisheries in Area 3 are included in DFO fisheries management post-season reports. Limited Chum retention fisheries were provided that intercepted US hatchery Chum returns in Pink and Sockeye-directed commercial fisheries. 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 67-93% of the Chum sampled from Chum retention fisheries from 2012-2016. In 2019 DFO will be working with partners to review the efficacy of management measures used to date to limit impacts on Area 3 Chum.

STOCK STATUS TO 2017

The Nisga'a Joint Technical Committee and recent DFO assessments indicate recent aggregate status in the red zone for Portland Inlet and the Portland Canal-Observatory Inlet CUs and data deficiencies for the Lower Nass CU. Chum stocks are not rebuilding even though exploitation rates have been reduced since 2000. This may be partly the result of reduced productivity over the same period.

The management intent is to keep the Area 3 Chum Exploitation Rates 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 13.5-13](#)). Although for a period of time the total ER was in the 20% to 30% range, down from the 57% average from 1982 to 1999, it did increase slightly in subsequent years. The current ER is well below the level that would be expected to provide for rapid stock increases under “normal” productivity conditions.

Area 3 Chum Exploitation Rates US and Canada

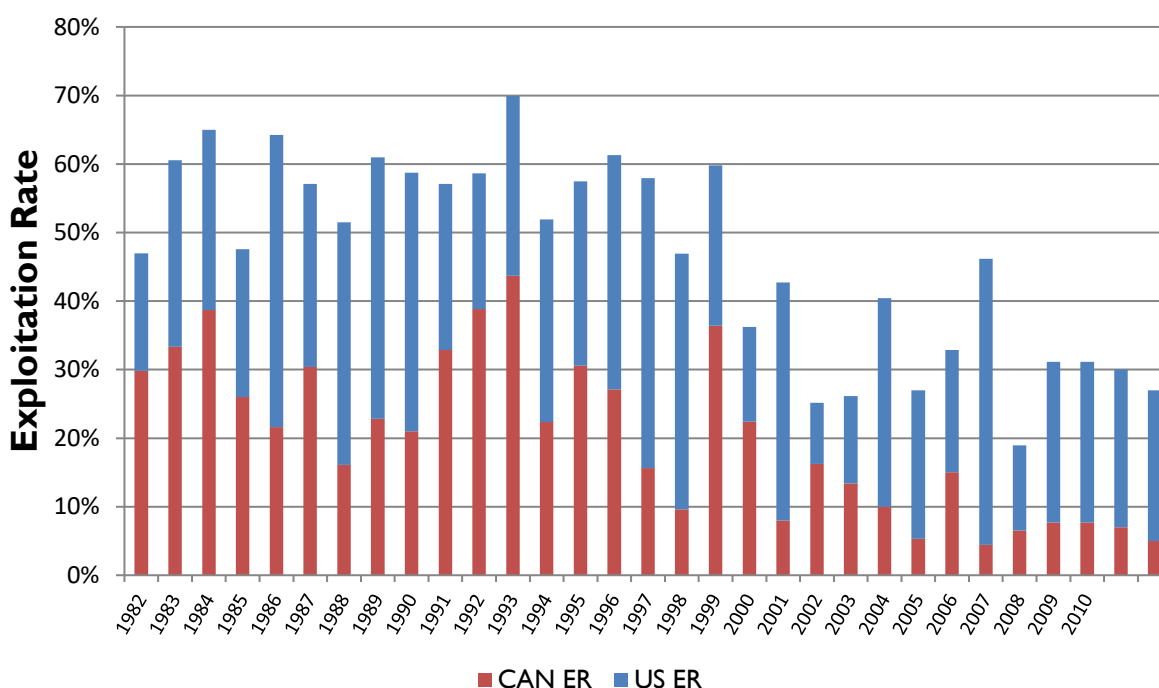


Figure 13.5-13: Area 3 Chum Exploitation Rates (US and Canada)

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. Updates provided regularly at http://shiny/lgl Sidney.com/ncc-salmon/ |
| 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. |

| Key Activities | Status |
|---|---|
| Analyze 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 annually. 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. |
| Review 2018 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 standardize Nass Chum escapement estimates. |
| Collect otoliths from Area 3 fisheries to determine US hatchery contributions in both retention and non-retention areas | Since 2011 otoliths have been collected and analyzed. |
| 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. | Technical work scheduled for spring Nisga'a Joint Technical Committee annually. |

| Key Activities | Status |
|---|---|
| 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 8: 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%. 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 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 13.5-14). 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.

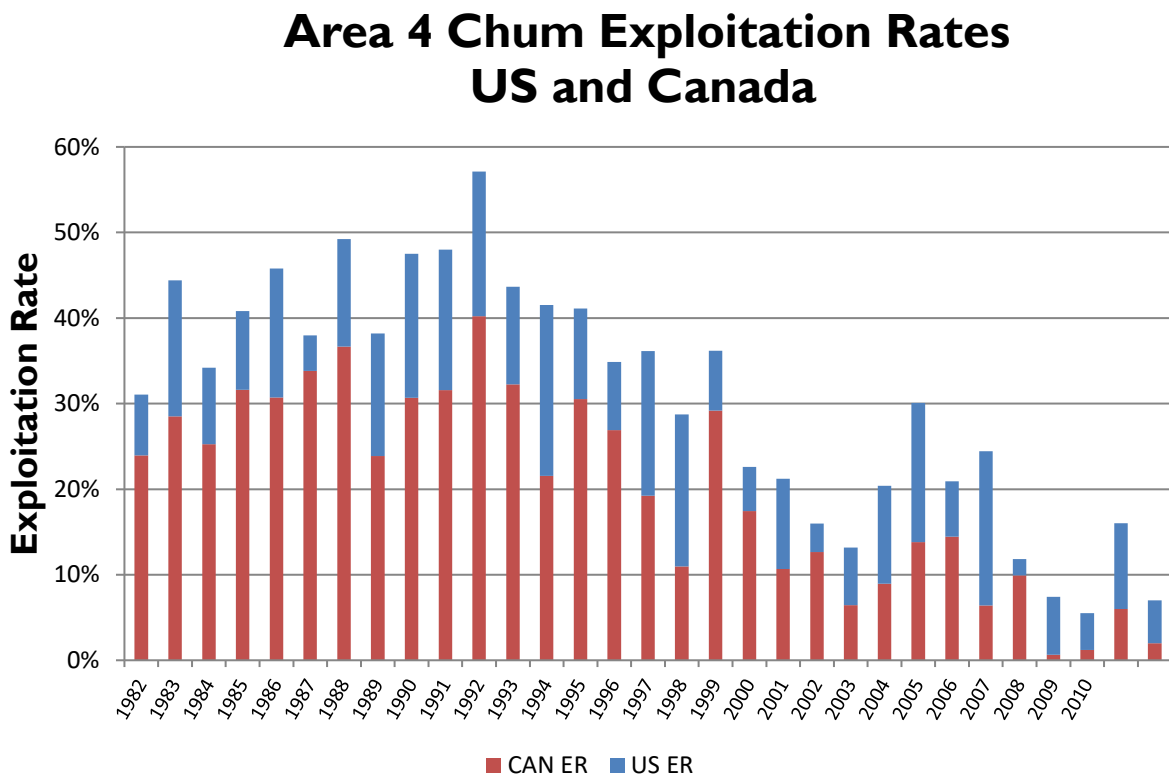


Figure 13.5-15: Area 4 Chum Exploitation Rates US and Canada

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. |
| Analyze 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. |
| 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 Skeena Chum escapement enumeration plans. | Enumerations plans reviewed each year through the Skeena FN technical committees. |

| Key Activities | Status |
|----------------------------|---|
| Develop 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.
- 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.
- 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.

APPENDIX 9: DRAFT CATCH MONITORING AND REPORTING RISK ASSESSMENTS FOR PACIFIC SALMON

The purpose of this Appendix is to share the initial draft Catch Monitoring and Reporting Risk Assessments for Pacific Salmon completed to date, which are required under the current *Strategic Framework for Fishery Monitoring and Catch Reporting in the Pacific Fisheries*. Thirteen initial evaluations of commercial salmon fisheries have been completed so far and work is underway to complete the remaining commercial risk assessments and to begin the assessments for recreational and First Nations fisheries.

The Department sought feedback on completed draft risk assessments during this year's IFMP consultation process. Feedback received is now being reviewed and will inform next steps to finalize the risk assessments.

Each draft risk assessment (Table 13.5-2) was completed by a DFO evaluation panel, including resource managers and biologists. The panels have evaluated each fishery using a Risk Assessment Tool, which includes a fishery description, identification of resource management issues, and a scoring system on the level of ecosystem risk to main species, bycatch, and community & habitat, which contributes a final "Risk of Fishery Score". The "Risk of Fishery Score" identifies a target level of monitoring for the fishery (either low, generic, or enhanced) and is compared to the current level of catch monitoring in place for that fishery.

For more information on how each fishery was scored, please contact the Pacific Salmon Regional Management Team at DFO.PacificSalmonRMT-EGRSaumondupacifique.MPO@dfo-mpo.gc.ca.

The below diagram (Figure 13.5-16) outlines the Catch Monitoring and Reporting Risk Assessment process being used for Pacific salmon fisheries.

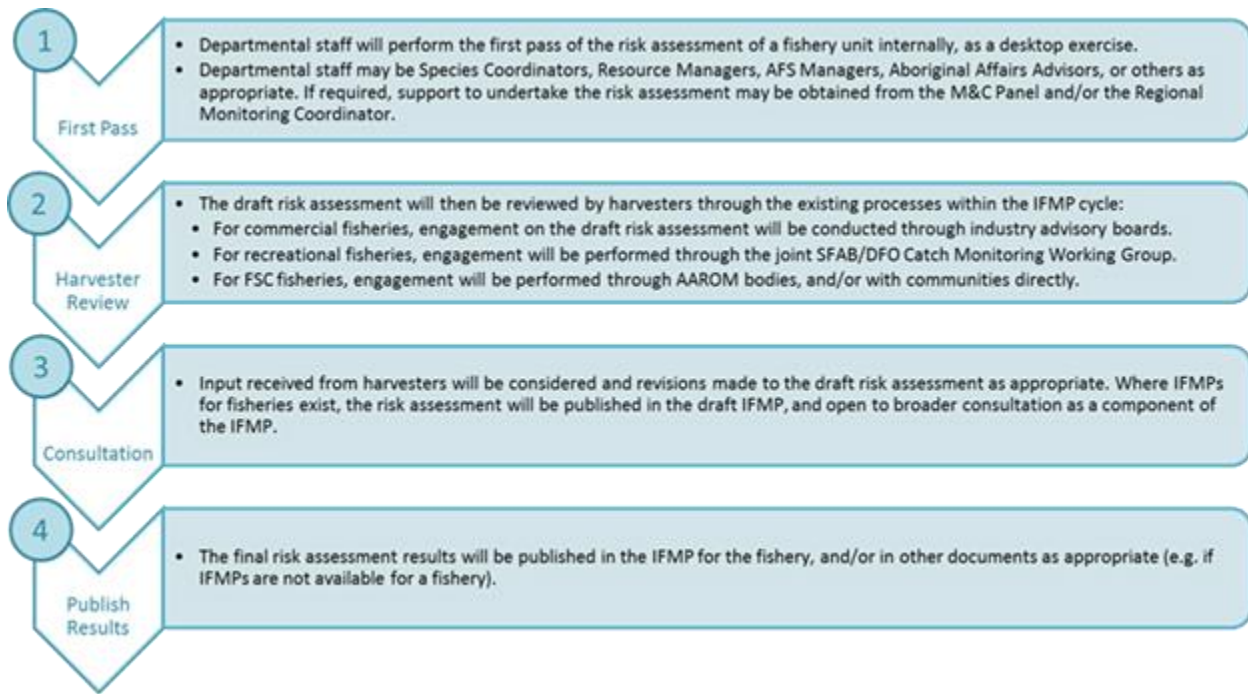


Figure 13.5-17: The Catch Monitoring and Reporting Risk Assessment process used for Pacific salmon fisheries.

Of the 13 commercial risk assessments completed so far, 8 have received a “generic” score for a target level of monitoring using the Risk Assessment Tool (TABLE REFERENCE). Factors contributing to this score may include one or more of the following for each fishery: potential impact(s) to red Conservation Units (CUs) through the targeted fishery, by-catch of species of concern (including some Chinook and Coho stocks, IFR Steelhead, etc.), and disturbance to Southern Resident Killer Whales (SRKW) and Stellar Sea Lions.

Table 13.5-3: Draft Commercial Salmon Risk Assessments that received a “Generic” Score for a Target Level of Monitoring.

| Area | Gear | Species Targeted | Target Level of Monitoring ¹² | Current Level of Monitoring |
|------|-------|---|--|-----------------------------|
| A | Seine | Nass and Skeena Sockeye | Generic | Generic |
| A | Seine | Haida Gwaii, Skeena, Nass Pink and Haida Gwaii and Central Coast Chum | Generic | Generic |

¹² As scored by the Risk Assessment Tool

| Area | Gear | Species Targeted | Target Level of Monitoring ¹² | Current Level of Monitoring |
|---|---------|---|--|-----------------------------|
| B (including Cowichan EO and Goldstream EO) | Seine | ECVI and Mainland Pinks, Inside Southern Chum Terminal, and Fraser Chum (Terminal/in river Pink and Chum fisheries) | Generic | Generic |
| C | Gillnet | Nass Sockeye, Rivers and Smiths Inlets Sockeye and Skeena Sockeye | Generic | Generic |
| C | Gillnet | Central Coast Chum and Haida Gwaii Chum | Generic | Generic |
| C | Gillnet | Central Coast ISMB Chinook and Skeena-Nass Chinook | Generic | Generic |
| D and E | Gillnet | Inside Southern Chum Terminal, WCVI Chum- other, WCVI ISBM Chinook, and WCVI Chum- Nitinat | Generic | Generic |
| E | Gillnet | Fraser Chum | Generic | Generic ¹³ |

The remaining fisheries that have been evaluated have received an initial “enhanced” score for a target level of monitoring using the Risk Assessment Tool (TABLE REFERENCE).

Contributing factors leading to this scoring can be seen in the table below.

¹³ Note that current monitoring levels are higher than “generic” due to partial independent observer coverage, but not enough to categorize as an “enhanced” level of monitoring

Table 13.5-4: Draft Commercial Salmon Risk Assessments that received an “Enhanced” Score for a Target Level of Monitoring.

| Area | Gear | Species Targeted | Target Level of Monitoring | Current Level of Monitoring | Contributing Factors (leading to the score received for a target level of monitoring) |
|------|---------|--|----------------------------|-----------------------------|---|
| B | Seine | Fraser Sockeye, Fraser Pink and Barkley/Somass Sockeye | Enhanced | Enhanced | The enhanced level of monitoring currently in place is largely driven by the need to manage the ITQ fishery. Potential to impact red CU Sockeye stocks (Fraser [Sakinaw & Cultus] & Barkley [Henderson L.]), although low likelihood due to mitigated management actions. Potential by-catch species include some Coho and Chinook stocks and co-migrating IFR Steelhead. Also some concern during Pink years when Sockeye abundance is low. Possibility for marine mammal entanglements and disturbance to SRKW. |
| D | Gillnet | Fraser Sockeye and WCVI Barkley/Somass Sockeye | Enhanced | Generic | Potential to impact red CU Sockeye stocks (Fraser [Sakinaw & Cultus] & Barkley [Henderson L.]), although low likelihood due to mitigated management actions. Potential by-catch species include Coho, Chinook, and IFR Steelhead. Potential encounters of sea birds and marine mammals. |
| H | Troll | Fraser Sockeye and Fraser Pink | Enhanced | Enhanced | The enhanced level of monitoring currently in place is largely driven by the need to manage the ITQ fishery. Potential impacts to red CU Sockeye Stocks [Sakinaw & Cultus], although low likelihood due to mitigated management actions. Potential by-catch species include some Coho and Chinook stocks, IFR Steelhead and Rockfish, although encounter rates are low. Also some concern during Pink years when Sockeye abundance is low. |

| Area | Gear | Species Targeted | Target Level of Monitoring | Current Level of Monitoring | Contributing Factors (leading to the score received for a target level of monitoring) |
|------|---------|---|----------------------------|-----------------------------|--|
| F | Troll | Northern Coho, Pink Chum, and Northern AABM Chinook | Enhanced | Enhanced | Potential risk to WCVI Chinook and Fraser Chinook. Potential by-catch species include Rockfish (Boccaccio and Yelloweye), although encounter rates are low. There are also potential encounters with Stellar Sea Lions. |
| E | Gillnet | Fraser Sockeye | Enhanced | Generic | Potential to impact red CU Sockeye stocks, although low likelihood due to mitigated management actions. Potential by-catch species include Sturgeon, IFR Coho, Steelhead, Harrison Chinook and other Chinook stocks (although by-catch is mostly Summer 41). Management actions in place to address and mitigate bycatch concerns are: window closures, revival boxes, mesh size restrictions, maximum soak times and reduced net lengths. |